Appendix P:
ENVIRONMENTAL COMPLIANCE REPORT
(Exhibit A-6.2)

EXHIBIT A-6.2:
ENVIRONMENTAL COMPLIANCE REPORT

RIVERBEND WIND ENERGY FACILITY

Submitted by Atwell, LLC

On behalf of

MI Energy Developments, LLC
575 5th Ave, Suite 2501
New York, NY 10017

August 1, 2025

TABLE OF CONTENTS

1 INTRODUCTION 1
1.1 SUMMARY OF FINDINGS 2
2 PROTECTED AQUATIC RESOURCES 2
2.1 WILD AND SCENIC RIVER 2
2.2 STATE DESIGNATED RIVER 3
2.3 WETLANDS 3
2.4 WATERBODIES 3
2.5 INLAND LAKES AND STREAMS 3
2.6 FLOODPLAINS 4
2.7 COASTAL ZONE 4
2.8 COASTAL MANAGEMENT 5
2.9 GREAT LAKES 5
2.10 CRITICAL DUNES 5
2.11 STORMWATER 5
2.12 SOIL EROSION AND SEDIMENTATION CONTROL 6
3 PROTECTED SPECIES AND HABITATS 6
3.1 THREATENED AND ENDANGERED SPECIES 6
3.2 EAGLES 10
3.3 MIGRATORY BIRDS 10
3.4 CRITICAL HABITAT 11
3.5 SENSITIVE HABITAT 11
4 CULTURAL RESOURCES 11
4.1 CULTURAL AND HISTORIC ARCHITECTURAL AND ARCHAEOLOGICAL RESOURCES 11
5 PROTECTED LANDS 13
5.1 PARKS 13
5.2 WILDLIFE CORRIDORS 13
5.3 PUBLIC LANDS 13
5.4 FARMLAND 14
6 WASTE AND POLLUTION PREVENTION 15
6.1 HAZARDOUS WASTE 15
6.2 SOLID WASTE 15
6.3 LIQUID INDUSTRIAL BYPRODUCT 15
6.4 USED OIL 15
6.5 SPILL PREVENTION, CONTROL, AND COUNTERMEASURES 16

6.6 STORMWATER POLLUTION AND PREVENTION PLAN 16
6.7 AIR QUALITY 16
6.8 MATERIALS MANAGEMENT 16
7 CONCLUSIONS 17
8 REFERENCES 18

TABLES

1 Threatened and Endangered Species Review

APPENDICES

A Information for Planning and Consultation Query Results, and
B Michigan Natural Features Inventory Database Results
C Preliminary Constraints Map
D Wetland Delineation Report
E Threatened and Endangered Species Memorandum and Conservation Measures
F Phase 2 Presence/Absence Bat Acoustic Survey
G Raptor Nest Survey Report
H Site Characterization Report
I Year One Avian Use Report
J Year Two Avian Use Report

ACRONYMS AND ABBREVIATIONS

Atwell	Atwell, LLC
BCC	Birds of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practices
CSE	Council of Science Editors
CWA	Clean Water Act
dBA	decibel
ECR	Environmental Compliance Report
EGLE	Michigan Department of Environment, Great Lakes and Energy
EMR	eastern massasauga rattlesnake
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
GIS	Geographic Information Systems
HUC	Hydrologic Unit Code
IPaC	Information, Planning, and Consultation System
MBTA	Migratory Bird Treaty Act
MDARD	Michigan Department of Agriculture and Rural Development
MDNR	Michigan Department of Natural Resources
MNFI	Michigan Natural Features Inventory
MPSC	Michigan Public Service Commission
NHD	National Hydrography Dataset
NEC	National Electrical Code
NFPA	National Fire Protection Association
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NLCD	National Land Cover Database
NRCS	Natural Resources Conservation Service
NREPA	Natural Resources and Environmental Protection Act
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
PA 116	Michigan's Farmland and Open Space Preservation Program
SESC	Soil Erosion and Sedimentation Control
SHPO	State Historic Preservation Office
TES	threatened and endangered species
USDA	U.S. Department of Agriculture

USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1 INTRODUCTION

MI Energy Developments, LLC, a subsidiary of REV Renewables proposes to construct and operate a wind energy facility known as the Riverbend Wind Energy Facility (the Project). This Environmental Compliance Report (ECR) is intended to fulfill the Exhibit A-6.2 requirement of the Project's application for approval to construct and operate the Project under Public Act 233. It describes how the proposed facility will comply with applicable state and federal laws including the Natural Resources and Environmental Protection Act (NREPA), Public Act 451 of 1994, and Section 1705(2) of the Michigan Environmental Protection Act (MEPA), MCL 324. 1705(2).

The Riverbend Wind Energy Facility is located in Fremont, Speaker, and Elk townships, Sanilac County, Michigan. The Project proposes to permit up to 50 turbine pad locations, up to 26 within Fremont Township and up to 24 within Speaker Township. There are no turbines proposed within Elk Township. The Applicant has secured approximately 31,326 acres of participating land under lease agreement throughout Sanilac County, Michigan, of which only approximately 79 acres of land will be utilized for above ground infrastructure. The Project area and associated proposed infrastructure is depicted in Appendix A – Site Plan (Exhibits A-1.1, 1.2 & 1.4) as part of Exhibit A-1 of this application.

Evaluations were completed for the Project and 1,000-foot buffer to determine potential impacts on air quality, wildlife, water resources, and cultural resources within the Project area. A larger area outside of the current Project boundary was studied during the project due diligence phase to determine siting of project infrastructure. This ECR was conducted through a combination of desktop research and field reconnaissance. Data acquisition was conducted through publicly available information from a variety of sources including federal, state, and local agencies; Geographic Information System (GIS) databases; and literature review.

Appendix A includes the results of U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) database query. **Appendix B** includes the results of Michigan Natural Features Inventory (MNFI) database queries. **Appendix C** includes a Constraints Map which displays desktop and field delineated data discussed within this ECR. **Appendix D** includes the Wetland Delineation Report performed for the Project area performed by Atwell, LLC (Atwell). **Appendix E** includes a copy of the Threatened and Endangered Species Memorandum and Conservation Measures prepared by Atwell. **Appendix F** includes the Phase 2 Presence/Absence Bat Acoustic Survey conducted by Sanders Environmental Inc. **Appendix G** includes a Raptor Nest Survey Report conducted and prepared by TRC Environmental Corporation (TRC). **Appendix H** includes a Site Characterization Report prepared by TRC. **Appendix I** includes the Year 1 Avian Use Report conducted and prepared by TRC. **Appendix J** includes the Year 2 Avian Use Report conducted and prepared by Atwell.

1.1 SUMMARY OF FINDINGS

Based on this analysis and the results of on-site assessments, Atwell did not identify any significant impacts posed by development of a wind project in the Project area that would adversely affect threatened and endangered species, water resources and floodplains, protected farmlands and soils, or any other environmental, cultural, historic, aesthetic factors within the Project or its vicinity. By means of careful Project siting, design or implementation of specified mitigation measures, the Project will not have significant effects on these environmental components.

2 PROTECTED AQUATIC RESOURCES

In Michigan, inland lakes, streams, and wetlands are regulated by Michigan Department of Environment, Great Lakes, and Energy (EGLE) under Part 301, Inland Lakes and Streams, and Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act (NREPA) (Act 451 of 1995). Part 31, Water Resources Protection of the NREPA regulates activities within the 100-year floodplain and floodway of a river or stream with an upland drainage area of two square miles or larger. A Part 31 permit from EGLE is required for construction within a regulated floodplain or floodway. MCL 324.30102(1) of NREPA requires a permit for any construction, dredging, filling, or other activities that alter the natural flow, bed, or bank of inland lakes or streams. This regulation is part of NREPA and is designed to protect water resources by ensuring such activities are reviewed and authorized by the state. Note that water resources, such as floodplains, wetlands, and watercourses (streams) identified within the 1,000-foot buffer of the Project area were collected from public desktop data and have not been field verified. Water resources within the Project area are depicted utilizing both public desktop data as well as field verified data gathered during focused wetland delineations based on the locations of project infrastructure. Refer to **Appendix D** for the Wetland Delineation Report.

The Project area and 1,000-foot buffer lie within the St. Clair Watershed (Hydrologic Unit Code [HUC] 04090001) (USGS 2020). Based on review of the National Hydrography Dataset (NHD), six waterbodies were mapped within the Project area and one waterbody is mapped within the 1,000-foot buffer (USGS 2025). There are 165 watercourses mapped within the Project area and 73 watercourses are mapped within the 1,000-foot buffer. Refer to **Appendix C** for the locations of mapped NHD streams and waterbodies within and around the Project area.

2.1 WILD AND SCENIC RIVER

Pursuant to the Fisheries Order 200 and 210 (FO-200, FO-210), the Michigan Department of Natural Resources (MDNR) regulates waterbodies and watercourses designed as Trout and Salmon Inland Streams. The Project area and 1,000-foot buffer do not contain any designated trout streams. Project activities are unlikely to affect any Wild and Scenic Rivers.

2.2 STATE DESIGNATED RIVER

Pursuant to the Natural Rivers Program established under Part 305 of NREPA, MDNR regulates waterbodies and watercourses designed as Natural Rivers. The Project area and 1,000-foot buffer do not contain any Natural Rivers. Project activities are unlikely to affect any State Designated Rivers.

2.3 WETLANDS

Pursuant to MCL 324.30304 of Michigan's NREPA, section 30304 of Part 303, a permit is required for activities that may impact wetlands, such as dredging, filling, or construction. This regulation is in place to protect the ecological integrity of wetlands, ensuring that any potentially harmful activities are regulated to prevent damage to these sensitive environments. Under Part 303, certain activities may be exempt, including utility projects, if they meet certain criteria to minimize environmental impacts.

Based on a desktop review of the USFWS National Wetlands Inventory (NWI) dataset, 568 wetlands were mapped within the Project area and 180 were identified within the 1,000-foot buffer. Note that many of the NHD-mapped watercourses are also mapped by the NWI as riverine wetland communities (USFWS 2022). Refer to **Appendix C** for the locations of NWI mapped wetlands within and around the Project area.

On-site wetland delineations were performed for the Project in winter of 2021, spring of 2022, and summer of 2023. The purpose of the on-site wetland delineation was to confirm the presence of mapped features within defined areas and corridors associated with proposed project infrastructure. As a result of the wetland delineation, a total of 135 wetlands (106 designated as regulated by EGLE) were identified within the Project area. Refer to the Wetland Delineation Report included in **Appendix D.**

2.4 WATERBODIES

While six waterbodies are located in the Project area, and one within the 1,000-foot buffer, construction and operation of the Project are not likely to affect this resource. The Project does not anticipate any impacts to waterbodies. Project infrastructure was sited to avoid impacts to waterbodies to the extent practicable.

2.5 INLAND LAKES AND STREAMS

In accordance with MCL 324.30102(1), section 30102(1) of Part 301, Inland Lakes and Streams, of NREPA, a permit is required for any construction, dredging, filling, or other activities that alter the natural flow, bed, or bank of inland lakes or streams. A total of 273 watercourses (83 perennial, 165 intermittent, and 25 ephemeral) were identified within the Project area (Atwell 2023). The

purpose of the wetland delineation was to identify wetlands and waterways within the available land to inform the design layout and avoid and minimize impacts on identified wetlands, waterways, and waterbodies, including inland lakes and streams. Refer to **Appendix D** for the Wetland Delineation Report.

Additionally, inland lakes and streams can provide habitat for sensitive species and stopover habitat for migratory birds. Although it is unlikely that federally and state-listed species will occur within these resources located within the Project Area, the Project is designed to avoid and minimize potential impacts to water resources. Project infrastructure was sited to avoid impacts to inland lakes and streams to the extent practicable. EGLE Part 301 inland lakes and streams permits for stream crossings will be obtained as required. **Appendix C** provides an overview map of these features.

2.6 FLOODPLAINS

A review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) indicates that the Project area is located entirely in Zone X, an area of minimal flood hazard (FEMA 2025). The majority of the 1,000-foot buffer is designated as Zone X, however, it also contains approximately 20 acres of Zone A floodplain (an area inundated by 1% annual chance flooding, for which no base flood elevations have been determined) (FEMA 2025). Refer to **Appendix C** for the locations of mapped FEMA floodplain around the Project.

A preliminary desktop drainage review was completed for the Project area to determine if watercourses with an upstream drainage area of greater than two square miles were present, which would indicate the presence of a potential state regulated floodplain. A request was submitted to EGLE to provide base flood elevations for potential state regulated floodplains associated with these watercourses within the project area. If state-regulated floodplains are identified as a result of this analysis and are impacted by Project infrastructure, the Project will obtain a permit for Floodplain Fill and Construction Activities under Part 31 of NREPA prior to construction.

2.7 COASTAL ZONE

In accordance with applicable Michigan State Coastal Management Program (CMP) policies, effects on coastal zones, coastal management areas, Great Lakes, and critical dunes, were evaluated. EGLE has identified five coastal zone management areas within Sanilac County; none of which are located within the Project area or 1,000-foot buffer (EGLE 2020).

MCL 324.35304 requires a permit for activities in state-designated Critical Dune Areas, such as construction, excavation, or altering the landscape. Project activities are unlikely to affect any coastal zones or critical dunes.

2.8 COASTAL MANAGEMENT

In accordance with applicable Michigan State Coastal Management Program (CMP) policies, effects on coastal zones, coastal management areas, Great Lakes, and critical dunes, were evaluated. EGLE has identified five coastal zone management areas within Sanilac County; none of which are located within the Project area or 1,000-foot buffer (EGLE 2020). Project activities are unlikely to affect any coastal management areas.

2.9 GREAT LAKES

Pursuant to MCL 324.32512(1) under Part 325 of NREPA, a permit is required for any construction, dredging, filling, or other activities in the Great Lakes, Lake St. Clair, and connected canals. The Project area is located approximately 3.25 miles west of the Lake Huron shoreline; therefore, no impacts to the Great Lakes are anticipated to occur.

2.10 CRITICAL DUNES

In accordance with applicable Michigan State Coastal Management Program (CMP) policies, effects on coastal zones, coastal management areas, Great Lakes, and critical dunes, were evaluated. MDNR has identified a 265-mile long stretch of dunes along the coast of Lake Michigan and Lake Superior that has been designated as critical dunes. As the project is not located along the coast of these two Great Lakes, the Project will have no effect on critical dunes. Additionally, EGLE has identified five coastal zone management areas within Sanilac County; none of which are located within the Project area or 1,000-foot buffer (EGLE 2020).

MCL 324.35304 requires a permit for activities in state-designated Critical Dune Areas, such as construction, excavation, or altering the landscape. Project activities are unlikely to affect any critical dunes.

2.11 STORMWATER

A stormwater assessment and prepared Stormwater Mitigation Plan was completed for the Project to determine the extent of impacts to stormwater. The Project's excavation and stormwater management measures are designed to prevent increased surface drainage and minimize runoff to adjacent properties. Post-construction stormwater flows would not materially exceed pre-construction flows. As such, the Project is unlikely to affect groundwater and drainage.

Additionally, research into Sanilac County Drain Commission publications was conducted to review stormwater management requirements. Coordination with the Sanilac County Drain Commissioner was completed from December 2024-February 2025. The Sanilac County Drain Commission’s stormwater requirements for the Project will consist of best management practices

(BMPs) necessary to satisfy the county's Soil Erosion and Sedimentation Control (SESC) permit requirements during construction. The Project will obtain a SESC permit from the Sanilac County Drain Commissioner prior to construction, in compliance with Part 91 of the NREPA. Refer to Appendix R – Stormwater Mitigation Plan (Exhibit A-6.4) as part of Exhibit A-6 of this application.

2.12 SOIL EROSION AND SEDIMENTATION CONTROL

Pursuant to MCL 324.9112(1) of Part 91 under the Soil Erosion and Sedimentation Control (SESC) section of NREPA, a permit must be obtained from the appropriate county enforcing agency or municipal enforcing agency for any earth change activity that could result in soil erosion or sedimentation. Implementation of a SESC Plan and BMPs will minimize adverse effects on soil and water quality during construction. The Project will obtain a SESC permit from the Sanilac County Drain Commissioner prior to construction, in compliance with Part 91 of the NREPA.

3 PROTECTED SPECIES AND HABITATS

3.1 THREATENED AND ENDANGERED SPECIES

The Endangered Species Act (ESA) of 1973 protects designated threatened and endangered species (TES) from extinction. In addition, Part 365, Endangered Species Protection of the NREPA protects state-listed TES, as well as federally listed wildlife and plants. The Michigan Department of Natural Resources (MDNR) is responsible for implementing and enforcing Part 365 of the NREPA. For the purposes of this ECR, special status wildlife species include those listed under the ESA or as threatened or endangered by MDNR.

Atwell reviewed the USFWS IPaC System information regarding federally listed TES and other resources on a project location basis. The USFWS IPaC report for the Project and surrounding area, identified six federally listed TES as having the potential to occur in the vicinity of the Project (USFWS 2025a). Please note that candidate species and proposed listed species are not afforded protection under the ESA, and thus are not discussed in this ECR. Refer to **Appendix A** for project-specific IPaC results.

In addition, Atwell utilized the Michigan Natural Features Inventory (MNFI) electronic database to identify records of TES occurrences within the sections, township, and ranges in which the Project is located. The MNFI results for the Project indicated that there was one record of state-listed TES within the vicinity of the Project (MNFI 2025). These data were provided by the MNFI. These data are not based on a comprehensive inventory of the state. The lack of data for any geographic area shall not be construed to mean that no significant features are present. In addition, although MNFI maintains high standards of quality control, MNFI makes no warranty as to the fitness of the data for any purpose, nor that the data are necessarily accurate or complete. Please note that extinct species and species of concern are not afforded legal protection under the ESA or Part 365

of the NREPA and are subsequently not reviewed in this ECR. Refer to **Appendix B** for project-specific MNFI results. As stated previously, an on-site TES habitat assessment and desktop review were conducted in winter of 2021, spring of 2022, and summer of 2023. **Table 1**, below, provides a list of special status wildlife species with potential to occur in or near the Project based on database review results (MNFI 2025; USFWS 2025a) and a brief description of the results of on-site field assessments and desktop reviews. It should be noted that inclusion on the IPaC and MNFI lists does not indicate that the species is present within the Project.

Table 1. Threatened and Endangered Species Review

Common Name	Scientific Name	Status	Preferred Habitat	Potential for Occurrence
Indiana bat	*Myotis sodalis*	FE, SE	Hibernate during winter in caves and mines. Summer habitat ranges from dense to loose aggregates of trees with variable amounts of canopy closure, as well as linear features such as fencerows, riparian forests, and other wooded corridors.	Low; wooded areas within the Project may provide suitable roost habitat, however, according to MNFI, there have been no occurrences of this species within Sanilac
Eastern Massasauga rattlesnake	*Sistrurus catenatus*	FT, ST	Typically found in open, shallow wetlands, particularly favoring prairie fens. May also occur in bogs, shrub swamps, wet meadows, marshes, wet prairies, or floodplain forests. May also use adjoining uplands during the summer.	Low; the Project is not within EMR habitat. The closest Tier 1 habitat is mapped 18 miles southwest of the Project. The closest Tier 2 habitat is mapped 16.5 miles west of the Project. This species requires habitat of large wetland complexes may be present within the Project. However, the Project consists predominately of forested and agricultural land, and it is unlikely the species or its habitat will be impacted by project development.
King rail	*Rallus elegans*	SE	Permanent freshwater marshes are the most important habitat type, although the species can	Low; the majority of the Project consists of agricultural and forested land. Additionally, MNFI

Common Name	Scientific Name	Status	Preferred Habitat	Potential for Occurrence
			also utilize monotypic cattail stands and expansive stands of marshy herbaceous vegetation.	data indicates only one occurrence of this species within the Project area observed in 1950.
Northern riffleshell	*Epioblasma rangiana*	FE, SE	This species requires swiftly moving well oxygenated water. Preferred habits are riffle and run areas with fine to coarse gravel. Additionally, this species requires host fish to complete its larval development.	Moderate; rivers and streams identified within the Project may contain suitable habitat for this species. Additionally, MNFI data indicates nine occurrences of this species in Sanilac County, with the most recent in 2009.
Round hickorynut	*Obovaria subrotunda*	FT, SE	Typically found in medium to large rivers and along the shores of Lake Erie and Lake St. Clair near river mouths. This species generally is found in sand and gravel substrates in areas with moderate flow (MNFI 2024).	Moderate; rivers and streams identified within the Project may contain suitable habitat for this species. However, MNFI data indicates only one occurrence of this species in Sanilac County observed in 1934.
Bald Eagle	*Haliaeetus leucocephalus*	BGEPA, SC	Typically nests in large trees or snags near open bodies of water that can provide ample opportunity for fishing.	Low; the Project does not contain large bodies of water to support hunting or nesting habitat.

Common Name	Scientific Name	Status	Preferred Habitat	Potential for Occurrence
Rufa red knot	*Calidris canutus rufa*	FT	Sandy coastal habitats at or near tidal inlets or at the mouths of bays and estuaries, as well as other habitats such as brackish lagoons and tidal mudflats. In Michigan, this species can be expected to be present during migration along the Great Lakes shoreline, as well as inland occasionally on mudflats (e.g., at low reservoirs, flooded fields).	Low; the Project and surrounding area appear to lack coastal and estuarine habitat. Due to the distance of the project from Lake Michigan, and the lack of suitable habitat, it is unlikely for this species to occur within the Project or be impacted by project development.
Eastern prairie fringed orchid	*Platanthera leucophaea*	FT/SE	Species is commonly found in bogs, wet to wet-mesic prairies, and degraded prairie remnants. This species can colonize artificially disturbed habitats that provide a moist mineral surface, including ditches and fallow agricultural fields. Requires full sunlight in order to persist and is limited to herbaceous habitats with little shrub presence.	Low; the Project does not appear to contain bogs or wet-mesic prairies and rocky slopes with sunny open areas and limited competition from taller vegetation. It is unlikely for this species to occur within the Project or be impacted by project development.

Source: (MNFI 2025; USFWS 2025a).
Note: BGEPA = Bald and Golden Eagle Protection Act; FE = ESA-listed endangered; FT = ESA-listed threatened; SE = state-listed endangered; ST = state-listed threatened; SC = state concern.

The TES habitat assessment results were utilized to inform Project siting and design in order to reduce potential impacts to significant natural features. USFWS recommended BMPs will be used to minimize impacts to TES with potential to occur on-site and their habitat during the construction of the Project. The Project commits to implementing species specific BMPs recommended from the USFWS through continued consultation as the Project progresses. Refer to **Appendix E** for the Threatened and Endangered Species (TES) Memorandum and Conservation

Measures which includes additional information regarding the conservation measures that will be implemented by the Project. Please note, at the time **Appendix E** was prepared the northern-longed eared bat was included in the IPaC results and has since been removed.

In addition, according to the Bird Conservation Regions database, the Project area and 1,000-foot buffer are located within the Prairie Hardwood Transition area. Characterized by beech-maple forests and oak savannah, pothole-type wetlands and shallow lakes, rivers, and emergent marshes, this area is known to hold Cerulean Warblers, remnant Greater Prairie-Chicken populations, as well as breeding ducks, sparrows, and other birds. The Prairie Hardwood Transition area is not specifically protected under any statute (Bird Studies Canada and NABCI 2014). The Project is not expected to adversely impact any preferred habitat. The Project has been designed to avoid natural areas to the greatest extent possible while maintaining target capacity. Refer to **Appendix I** & **Appendix J** for the Year 1 and Year 2 Avian Use Reports, respectively.

3.2 EAGLES

The Bald and Golden Eagle Protection Act (BGEPA) was enacted in 1940 (16 U.S.C. 668–668d, 54 Stat. 250) (U.S. Congress 1940) to preserve eagle populations from wanton killing and population declines. This act makes it illegal to take Bald Eagles or Golden Eagles *(Aquila chrysaetos)* or to trade in eagle parts, eggs, or feathers. Take has been broadly interpreted to include altering or disturbing nesting habitat. Disturbance is defined by the act as "to agitate or bother a Bald or Golden Eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an Eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (50 Code of Federal Regulations Part 22). Rule changes made on December 14, 2016, finalized permit regulations to authorize limited take associated with otherwise lawful activities. These regulations establish permit provisions for intentional take of Eagle nests under limited circumstances (MNFI 2022). The Project and surrounding area contain suitable fishing or nesting habitat for the Bald Eagle. As recommended by USFWS, any Bald Eagle nest observed before construction will be buffered by at least 660 feet to avoid take. Refer to **Appendix G**, **Appendix I**, and **Appendix J** for specific reports relating to Bald and Golden Eagle use in the Project area.

3.3 MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) of 1918 (U.S. Congress 1918) protects a wide range of bird species in the United States, encompassing nearly all native migratory birds. The MBTA implements treaties with several other nations and was enacted in response to the decline of migratory bird populations from uncontrolled commercial uses. It is unlawful to pursue, hunt,

take, capture, kill, possess, or sell birds listed under the MBTA without appropriate permits. The statute does not discriminate between live or dead birds and grants full protection to any bird parts, including feathers, eggs, and nests, regardless of conservation status. IPaC results noted numerous birds of particular concern because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in the project location. After on-site assessment and desktop review, it is unlikely that any impact to the migratory birds will take place with proper siting of the Project and compliance with USFWS BMPs. Refer to **Appendix A** for a full list of the bird species and **Appendix I** & **Appendix J** for the Year 1 and Year 2 Avian Use Reports, respectively.

3.4 CRITICAL HABITAT

Atwell reviewed the USFWS IPaC System information regarding critical habitat on a project location basis (USFWS 2025a). No designated critical habitat was identified within the Project area (USFWS 2025b). Refer to **Appendix A** for project-specific IPaC results. The Project does not anticipate any impacts to critical habitat.

3.5 SENSITIVE HABITAT

Shorelines and areas that are within high-risk erosion area and unique environmental areas are protected under Part 323 of NREPA. Sensitive habitat in Michigan contributes to the health of sensitive fish and wildlife populations, and contain particularly important environmental areas, including upland ridges, waterways, exceptional woodlots, and rare wetlands. EGLE has identified townships throughout the state containing State Designated Environmental Areas. No State Designated Environmental Areas are located within Sanilac County. The Project does not anticipate any impacts to sensitive habitat.

4 CULTURAL RESOURCES

4.1 CULTURAL AND HISTORIC ARCHITECTURAL AND ARCHAEOLOGICAL RESOURCES

Section 106 of the National Historic Preservation Act (NHPA) of 1966 requires federal agencies to consider the effects of their undertakings on historic properties. At present, the Project is privately funded and located on private land, with no identified federal undertaking that would trigger Section 106 compliance. Cultural resource investigations have been conducted as good-faith due diligence to identify and assess potential impacts to historic properties.

A desktop cultural resources review was conducted by TRC in 2021 on behalf of Liberty Power. The review identified four previously recorded archaeological sites (20SL20, 20SL21, 20SL107, and 20SL108), two historic cemeteries (Fremont Township Cemetery and Immaculate Conception Catholic Cemetery), and one historic structure within the Project area. The historic structure, the

Fargo Road Bridge (P61744), has since been demolished and is no longer eligible for the National Register of Historic Places (NRHP). TRC stated in this review that 20SL21 is a prehistoric mound group, and along with the two cemeteries, is protected under Michigan Attorney General Opinion No. 6585 of 1989. TRC recommended avoiding these cultural resources, and if avoidance was not possible, a Phase I Archaeological Survey would be required for the archaeological sites, and consultation with the Michigan State Historic Preservation Office (SHPO) would be required for the protected resources.

In February 2023, Atwell conducted a Phase I Archaeological Survey to investigate the four previously identified archaeological sites within a 93.25-acre Survey Area. The survey consisted of pedestrian survey and shovel testing.

- **20SL20 and 20SL21:** No surface evidence or archaeological materials related to these two mound groups were identified during the survey of the cultivated fields. Historical records from 1891 and 1931 describe the locations of the mounds along Black Creek. Due to the potential for intact subsurface deposits and human remains associated with the historically documented mounds, Atwell recommended avoidance of these two site areas.
- **20SL107 (Hunt Site):** The survey identified three historic-period ceramic sherds, which are common finds in plowed agricultural fields near farmsteads. No prehistoric cultural material was found. The portion of the site within the Survey Area is recommended as not eligible for the NRHP.
- **20SL108 (Hirons Site):** A total of eight pieces of chert debitage and one piece of fire-cracked rock were found in the disturbed plow zone. The site's integrity has been diminished by long-term agricultural plowing and years of artifact collecting by residents. No diagnostic artifacts were recovered, and the portion of the site within the Survey Area is recommended as not eligible for the NRHP due to a lack of research potential.

Based on these findings, the areas of sites 20SL107 and 20SL108 that intersect the Project area are recommended not eligible for the National Register of Historic Places, due to lack of cultural material that is likely to yield information important in history or prehistory. Based on the proximity of proposed infrastructure to sites 20SL20 and 20SL21, an Unanticipated Discovery Plan (UDP) will be implemented and an archaeological monitor will be present during ground-disturbing activities in those areas, due to the potential for intact subsurface deposits and human remains associated with the historically documented mounds. The Project will avoid Fremont Township and Immaculate Conception Catholic Cemeteries. With these mitigation and avoidance measures in place, Atwell does not anticipate that the development of the Riverbend Wind Energy Facility will impact significant cultural resources.

5 PROTECTED LANDS

Review of the Project impacts included the entirety of the Project boundary. However, it should be noted that only 79 acres will be utilized for the Project and result in above-ground, permanent disturbance. The Project is located in southern Sanilac County, within Fremont, Speaker, and Elk townships. According to the National Land Cover Database (NLCD), the majority of land within the Project area is mapped as cultivated crops (approximately 72%). Secondary areas identified as woody wetlands (8%), deciduous forest (8%), developed open space (3%), hay/pasture (3%) low-intensity development (2%), and mixed forest (1%) are mapped within the Project area (MRLC 2023).

Review of aerial imagery and an on-site assessment is consistent with NLCD data and shows that the majority of the Project is primarily agricultural land, with secondary areas of woody wetlands, deciduous and mixed forest with some herbaceous and wetland areas. The surrounding area is also primarily rural agricultural land with low to medium-density rural residences and farmsteads, and similarly dispersed wooded natural areas.

The City of Yale is located approximately 1.7 miles south of the Project, and the City of Croswell is located approximately 1.6 miles northeast of the Project. The Village of Peck is located adjacent to the northern border of the Project, and the Village of Melvin is located in the southwest corner of the Project. According to the Protected Areas Database of the United States (PADUS), eleven protected areas are located within the Project area. These include the Willow Tree Golf Club, Trombley Lazy “T” Ranch, one conservation area managed by EGLE, and eight areas managed by the Farm Service Agency Interest of Michigan. The Project is designed to avoid all protected lands located within, or in the vicinity of, the Project boundary.

5.1 PARKS

According to the Protected Areas Database of the United States, (PADUS), no parks are located within the Project area. The Project does not anticipate any impacts to parks.

5.2 WILDLIFE CORRIDORS

According to the Protected Areas Database of the United States, (PADUS), no wildlife corridors are located within the Project area. The Project does not anticipate any impacts to wildlife corridors.

5.3 PUBLIC LANDS

According to the Protected Areas Database of the United States, (PADUS), no public areas are located within the Project Area. The Project does not anticipate any impacts to public lands.

5.4 FARMLAND

Part 361 of NREPA, the Farmland and Open Space Preservation Program, allows landowners to voluntarily enter into agreements with the state to keep agricultural land in farming use. The regulation ensures long-term protection of Michigan's farmland by restricting non-agricultural development and maintaining open space in rural areas. Wind turbines are considered an acceptable use of PA 116 farmland under MCL 324.36110(5). A search of the 2024 Equalization Reports for Fremont and Speaker Townships was used to identify parcels participating in Michigan's Farmland and Open Space Preservation Program (PA 116). Refer to Figure 5 – PA 116 Map (Exhibit A-1.2) as part of Exhibit A-1 of this application.

According to NLCD, approximately 76% of the land in Fremont Township is designated as cultivated crops. According to the NRCS Web Soil Survey, approximately 6% of the soils within Fremont Township are designated as "all areas are prime farmland", approximately 7% is designated as "farmland of local importance", approximately 83% is designated as "prime farmland if drained", approximately 2% is designated as "not prime farmland", and 2% is designated as "prime farmland if drained and either protected from flooding or not frequently flooded during the growing season."

According to NLCD, approximately 65% of the land in Speaker Township is designated as cultivated crops. According to the NRCS Web Soil Survey, approximately 19% of the soils within Speaker Township are designated as "all areas are prime farmland", approximately 7% is designated as "farmland of local importance", approximately 68% is designated as "prime farmland if drained", approximately 5% is designated as "not prime farmland", and less than 1% is designated as "prime farmland if drained and either protected from flooding or not frequently flooded during the growing season."

According to NLCD, approximately 82% of the land in Elk Township is designated as cultivated crops. According to the NRCS Web Soil Survey, approximately 3% of the soils within Elk Township are designated as "all areas are prime farmland", approximately 11% is designated as "farmland of local importance", approximately 80% is designated as "prime farmland if drained", approximately 5% is designated as "not prime farmland", and less than 1% is designated as "prime farmland if drained and either protected from flooding or not frequently flooded during the growing season."

According to the 2022 Census of Agriculture, approximately 57% of the land within Sanilac County is designated as farmland. Approximately 91% of the farmland in Sanilac County is utilized as crop land, 3% as woodland, and 1% as pastureland. In Sanilac County, the primary crops are soybeans for beans, covering approximately 31% of farmland, corn for grain at 20%, wheat for grain at 12%, forage (hay/haylage) at 8%, and dry edible beans at 7%. According to the NRCS Web Soil Survey,

approximately 13% of the soils Sanilac County are designated as “all areas are prime farmland”, approximately 7% is designated as “farmland of local importance”, approximately 75% is designated as “prime farmland if drained”, approximately 4% is designated as “not prime farmland”, and 2% is designated as “prime farmland if drained and either protected from flooding or not frequently flooded during the growing season.”

6 WASTE AND POLLUTION PREVENTION

All waste generated during the construction and operation of the facility will be managed and disposed of in accordance with applicable environmental regulations. Waste and hazardous materials will be securely stored in appropriate containers at the on-site operations and maintenance building prior to disposal. Non-recyclable waste will be transported to a permitted landfill, while recyclable materials such as metals, glass, plastics, and paper will be delivered to certified recycling facilities. Any hazardous materials associated with turbine maintenance or other site operations will be handled and disposed of in compliance with relevant environmental laws, using certified hazardous waste management contractors.

6.1 HAZARDOUS WASTE

In Michigan, hazardous waste is regulated by EGLE under Part 111 of NREPA. The Project will comply with all requirements for hazardous waste use, handling, and disposal and obtain any necessary permits for the project. Hazardous waste will be collected and stored in proper storage containers at the operation and maintenance building onsite prior to disposal.

6.2 SOLID WASTE

In Michigan, solid waste is regulated by EGLE under Part 115 of NREPA. The Project will comply with all requirements for solid waste use, handling, and disposal and obtain any necessary permits for the project. Solid waste will be collected and stored in proper storage containers at the operation and maintenance building onsite prior to disposal.

6.3 LIQUID INDUSTRIAL BYPRODUCT

In Michigan, liquid industrial byproduct is regulated by EGLE under Part 121 of NREPA. The Project will comply with all requirements for liquid industrial byproduct and obtain any necessary permits for the project. Liquid industrial byproduct disposed of properly as to not negatively affect the Project and surrounding area.

6.4 USED OIL

In Michigan, used oil is regulated by EGLE under Part 167 of NREPA. The Project will comply with all requirements for used oil handling and disposal and will obtain any necessary permits for the

project. Used oil will be collected and stored in proper storage containers at the operation and maintenance building onsite prior to disposal.

6.5 SPILL PREVENTION, CONTROL, AND COUNTERMEASURES

In Michigan, spill prevention, control, and countermeasures are required by EGLE under Part 5 of NREPA. Waste generated throughout the project life cycle, including construction and operation, will be handled and disposed of in a manner that complies with applicable environmental regulations. Spill prevention and control measures will be set in place prior to the commencement of construction in accordance with guidance of the Commission.

6.6 STORMWATER POLLUTION AND PREVENTION PLAN

In Michigan, stormwater discharge from construction activities are regulated under Rule 323.2190, often referred to as Permit by Rule, of Part 31. The Applicant has conducted a comprehensive stormwater assessment that outlines measures to minimize, mitigate, and repair any potential drainage impacts associated with the Project. This plan is designed to ensure effective management of stormwater runoff, incorporating best practices to protect the surrounding environment and natural resources. A stormwater assessment and prepared Stormwater Mitigation Plan was completed for the Project. Refer to Appendix R – Stormwater Mitigation Plan (Exhibit A-6.4) as part of Exhibit A-6 of this application.

6.7 AIR QUALITY

The Project will not adversely affect air quality within the Project area or surrounding vicinity. Operation of a wind energy facility does not generate harmful emissions, fumes, or smoke. Wind turbines are constructed from non-hazardous, durable materials such as steel and fiberglass, with the tower securely anchored to a concrete foundation and the blades mounted on a hub connected to a nacelle atop the tower, ensuring safe and stable operation and decommissioning.

6.8 MATERIALS MANAGEMENT

In compliance with Part 111, Part 115, Part 121, and Part 167 of NREPA, all materials generated throughout the life cycle of the Project will be handled and disposed of in a manner that complies with applicable environmental regulations. Materials will be collected and stored in proper storage containers at the operation and maintenance building onsite prior to disposal. Waste that cannot be recycled will be transported to an approved landfill facility. Recyclables, such as metals, glass, plastics and paper products will be taken to certified recycling facilities. Any materials deemed hazardous will be managed according to applicable environmental regulations, with the involvement of certified hazardous waste disposal companies.

7 CONCLUSIONS

The Project will not begin commercial operation until it complies with applicable state and federal environmental laws.

As sited, the Project optimizes efficient use of land to generate wind power, while avoiding significant impacts to natural resources and existing land uses. Additionally, the Project avoids impacts to wetlands, watercourses, and floodplains to the greatest extent practicable. The Project will obtain the necessary permits from EGLE for any impacts to wetlands, watercourses, and floodplains prior to construction.

Natural features and potential TES habitat have been avoided at the maximum extent practical to the development of the Project. Additionally, BMPs have been recommended for species with potential to occur on-site. The project will obtain any necessary approvals from USFWS prior to commencement of tree clearing.

Based on the desktop cultural resources review, Phase I Archaeological Survey, and recommended mitigation and avoidance measures, Atwell does not anticipate cultural resources will be impacted by development of a wind energy facility. An architectural history survey will also be performed prior to construction at the direction of the Michigan State Historic Preservation Office.

Based on this review of environmental factors within the Project area, Atwell did not identify any significant impacts posed by the development of the Project that would adversely affect the environment or its surroundings. All required permits or agreements will be coordinated and executed/obtained by the Project prior to construction.

8 REFERENCES

USGS [U.S. Geological Survey]. 2020. National map viewer. 2020. http://viewer.nationalmap.gov/viewer/

USGS [U.S. Geological Survey]. 2025. 3D Hydrography Program (3DHP). 2025. https://www.usgs.gov/3d-hydrography-program

EGLE [Department of Environment Great Lakes, and Energy]. 2020. Coastal zone boundary maps. 2020. https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Programs/WRD/Coastal-Management/coastal-zone-maps.pdf?rev=5f849175a60742c8ab9106fa415970a5

USFWS [U.S. Fish and Wildlife Service]. 2022. National wetlands inventory. U.S. Fish and Wildlife Service - NWI Wetland Mapper. 2022. http://www.fws.gov/wetlands/Data/Mapper.html

Atwell [Atwell LLC]. 2023. Wetland delineation report. Riverbend Wind Project. 2023.

FEMA [Federal Emergency Management Agency]. 2025. FEMA flood map service center. 2025. https://msc.fema.gov/portal/home

USFWS [U.S. Fish and Wildlife Service]. 2025a. IPaC - information for planning and consultation. Environmental Conservation Online System (ECOS). 2025. https://ipac.ecosphere.fws.gov/

USFWS [U.S. Fish and Wildlife Service]. 2025b. Critical habitat for threatened & endangered species. 2025. https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77

MNFI [Michigan Natural Features Inventory]. 2025. Michigan Natural Features Inventory web database search. 2025. https://mnfi.anr.msu.edu/

MNFI [Michigan Natural Features Inventory]. 2024. *Obovaria subrotunda* Round hickorynut. 2024. https://mnfi.anr.msu.edu/species/description/12379/Obovaria-subrotunda

Bird Studies Canada, NABCI. 2014. Bird Conservation Regions. North American Bird Conservation Initiative (published by Bird Studies Canada); 2014.

U.S. Congress. 1940. Bald and Golden Eagle Protection Act. 16 U.S. Code 668-668c. 1940.

MNFI [Michigan Natural Features Inventory]. 2022. Michigan mussels web app. 2022. https://mnfi.maps.arcgis.com/apps/webappviewer/index.html?id=3860be5d7f28471396d44e0b384abb12

U.S. Congress. 1918. Migratory Bird Treaty Act. 16 U.S. Code 703-712. 1918.

MRLC [Multi-Resolution Land Characteristics Consortium]. 2023. NLCD 2021 land cover (CONUS). 2023. https://www.mrlc.gov/data/nlcd-2021-land-cover-conus

APPENDIX A

INFORMATION FOR PLANNING AND CONSULTATION QUERY RESULTS

CONFIDENTIAL: DO NOT DISTRIBUTE

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Sanilac and St. Clair counties, Michigan

Local office

Michigan Ecological Services Field Office

(517) 351-2555
(517) 351-1443

2651 Coolidge Road Suite 101

East Lansing, MI 48823-6360

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

NOT FOR CONSULTATION

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Indiana Bat Myotis sodalis Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Tricolored Bat Perimyotis subflavus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Rufa Red Knot Calidris canutus rufa Wherever found This species only needs to be considered if the following condition applies: • Only actions that occur along coastal areas during the Red Knot migratory window of MAY 1 - SEPTEMBER 30. There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1864	Threatened

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) Sistrurus catenatus Wherever found This species only needs to be considered if the following condition applies: • For all Projects: Project is within EMR Range No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2202	Threatened

Clams

NAME	STATUS

NOT FOR CONSULTATION

Northern Riffleshell Epioblasma rangiana — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/527

Round Hickorynut Obovaria subrotunda — Threatened
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/9879

Salamander Mussel Simpsonaias ambigua — Proposed Endangered
Wherever found
There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/6208

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid Platanthera leucophaea Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/601	Threatened

NOT FOR CONSULTATION

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete

NOT FOR CONSULTATION

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

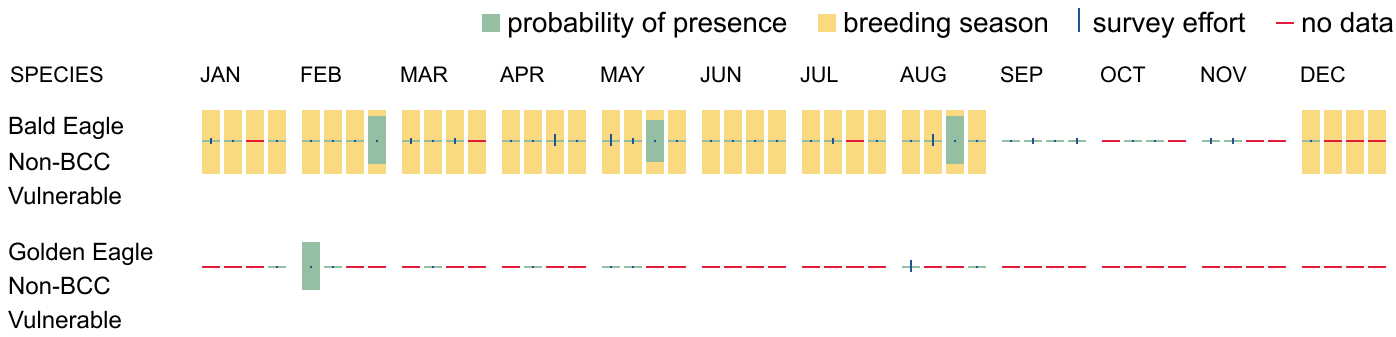
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



NOT FOR CONSULTATION

Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

NOT FOR CONSULTATION

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases birds of concern, including Birds of Conservation Concern (BCC), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the Nationwide avoidance and minimization measures for birds document, and any other project-specific avoidance and minimization measures suggested at the link Measures for avoiding and minimizing impacts to birds for the birds of concern on your list below.

NOT FOR CONSULTATION

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles document, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NOT FOR CONSULTATION

NAME	BREEDING SEASON
American Golden-plover Pluvialis dominica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black-billed Cuckoo Coccyzus erythropthalmus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink Dolichonyx oryzivorus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler Cardellina canadensis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Chimney Swift Chaetura pelagica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25

Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Golden-winged Warbler Vermivora chrysoptera This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Pectoral Sandpiper Calidris melanotos This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Semipalmated Sandpiper Calidris pusilla This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental

Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

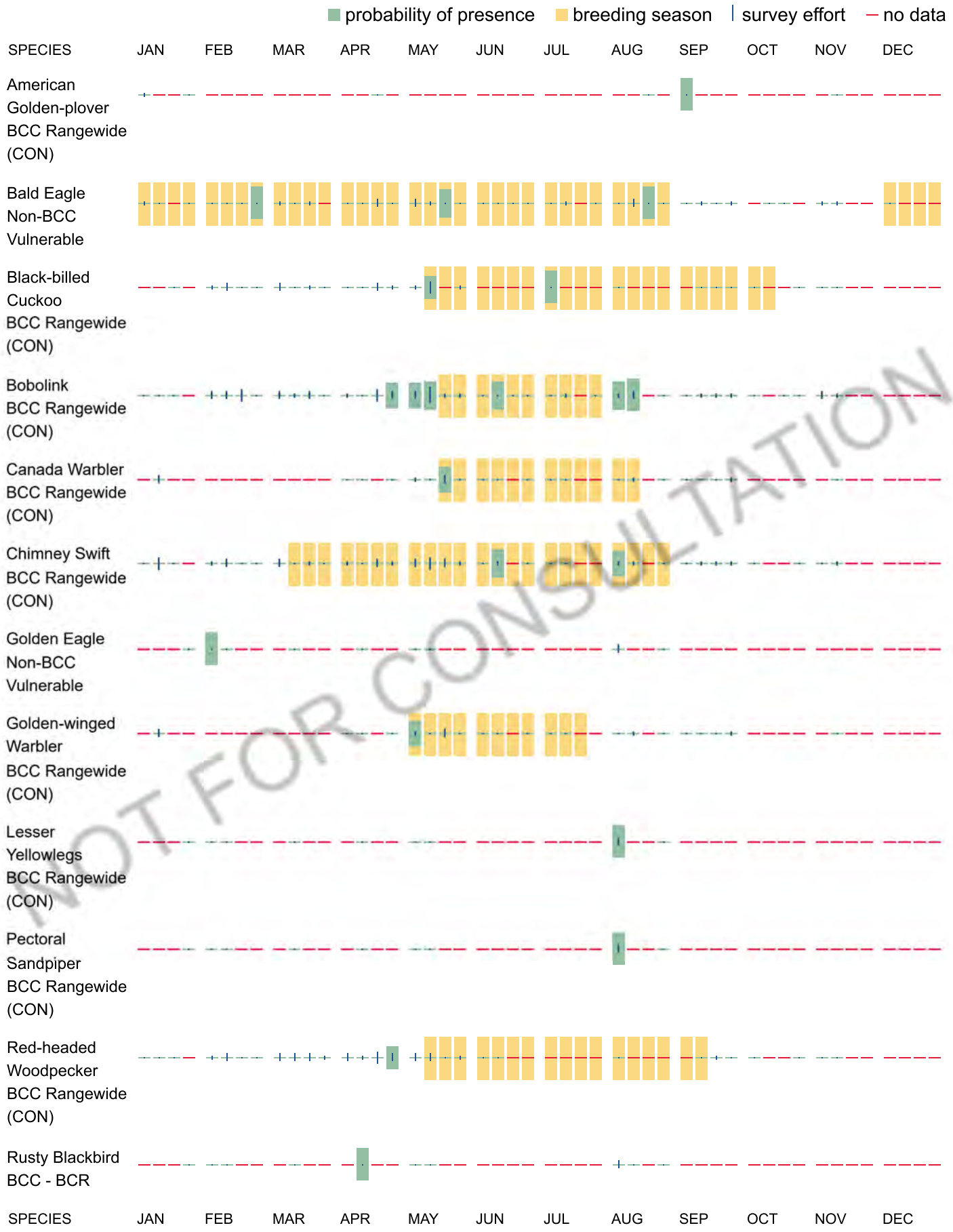
No Data (–)

A week is marked as having no data if there were no survey events for that week.

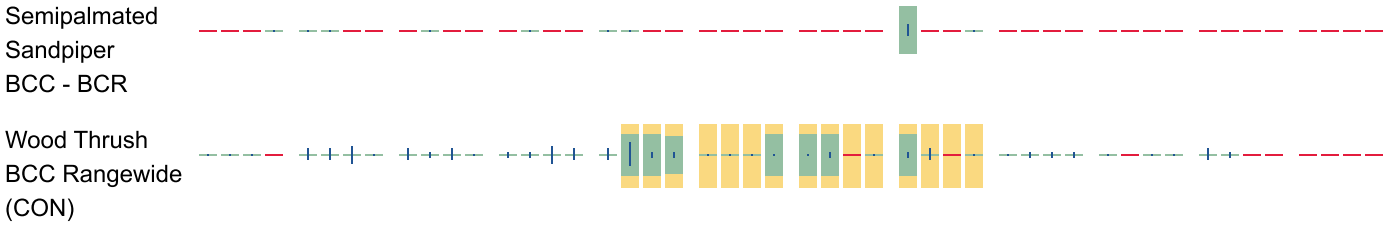
Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

NOT FOR CONSULTATION



NOT FOR CONSULTATION



Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

NOT FOR CONSULTATION

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Bald and Golden Eagle Protection Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

NOT FOR CONSULTATION

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially

occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs
Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

NOT FOR CONSULTATION

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

This location overlaps the following National Wildlife Refuge lands:

LAND	ACRES
FARM SERVICE AGENCY INTEREST OF MI	260.99 acres

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

PEM1C

FRESHWATER FORESTED/SHRUB WETLAND

PFO1C

PFO1/SS1C

NOT FOR CONSULTATION

PSS1C

FRESHWATER POND

PUBHx

RIVERINE

R5UBH

R5UBFx

R2UBFx

R2UBHx

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate

NOT FOR CONSULTATION

Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

APPENDIX B

MICHIGAN NATURAL FEATURES INVENTORY DATABASE RESULTS

CONFIDENTIAL: DO NOT DISTRIBUTE

Michigan Natural Features Inventory

Web Database Search

MICHIGAN STATE UNIVERSITY EXTENSION

Search Results for Town 09N, Range 14E, Section 1,2,5,7-11,14,15,18-20,23,24-29,31-33,35,36

Query Results Generated on Jun 06, 2025

No Records Found

Database Updated on Jun 01, 2025

New Search | Refine Search | Previous 25 Records | Next 25 Records

No records were found in the database matching your criteria

Michigan Natural Features Inventory

Web Database Search

MICHIGAN STATE UNIVERSITY EXTENSION

Search Results for Town 09N, Range 15E, Section 1,2,6-31,35,36

Query Results Generated on Jun 06, 2025

Displaying Record 1 to 2 of 2 Records Found

Database Updated on Jun 01, 2025

New Search | Refine Search | Previous 25 Records | Next 25 Records

Common Name	Scientific Name	State Status	Federal Status	Last Observed Date	Element Category	Element Occurrence Rank	Site of Observation	Best Documentation of EO	Town	Range	Section	County
Big water crayfish	Cambarus robustus	SC		2015-06-04		E - Verified extant (viability not assessed)						
								----------DATA REDACTED----------				
King rail	Rallus elegans	E		1950-07-18	Animal	H - Historical						

New Search | Refine Search | Previous 25 Records | Next 25 Records

Michigan Natural Features Inventory

Web Database Search

MICHIGAN STATE UNIVERSITY EXTENSION

Search Results for Town 10N, Range 14E, Section 35,36

Query Results Generated on Jun 06, 2025

No Records Found

Database Updated on Jun 01, 2025

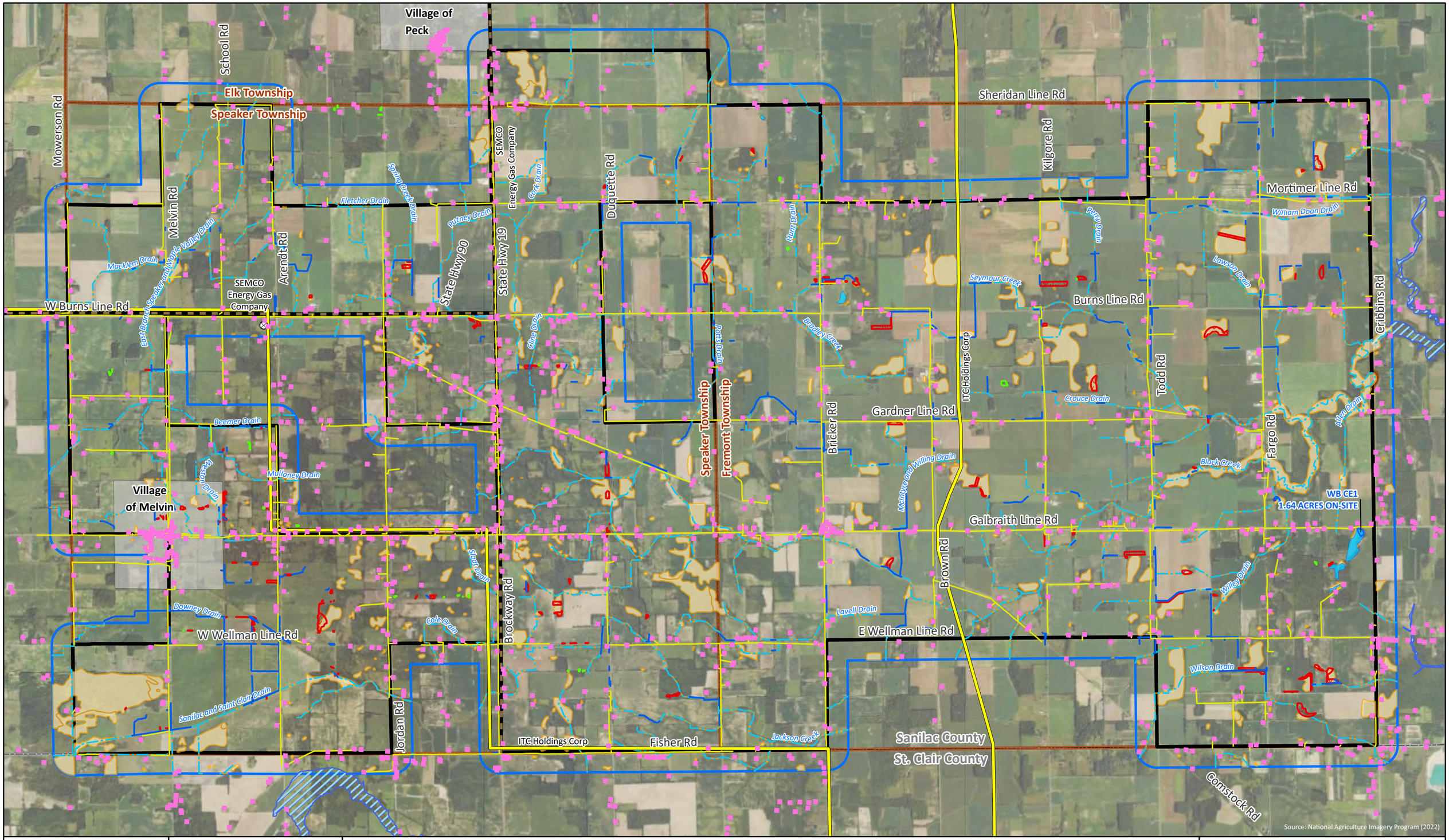
New Search | Refine Search | Previous 25 Records | Next 25 Records

No records were found in the database matching your criteria

APPENDIX C

PRELIMINARY CONSTRAINTS MAP

CONFIDENTIAL: DO NOT DISTRIBUTE



ATWELL

MI Energy Developments, LLC
Riverbend Wind Energy Facility
24006759
June 18, 2025
Preliminary

0 4,000 Feet

- Project Area (~34,860 acres)
- 1,000-foot Buffer
- Town/Village
- Township
- County
- Occupied Dwelling
- Cellular Tower (HIFLD)
- Transmission (Velocity Suite)
- Overhead Utility
- Natural Gas Pipeline (Rextag)
- Watercourse (Field Identified)
- Waterbody (Field Identified)
- Non-Regulated Wetland (Field Identified)
- EGLE Regulated Wetland (Field Identified)
- Watercourse (NHD)
- Waterbody (NHD)
- Wetland (NWI)
- FEMA Flood Hazard (Zone A)

Constraints Map
Elk, Speaker, and Fremont Townships
Sanilac County, Michigan

G:\Jobs2400\T24006759_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T24006759_Riverbend.aprx 6/18/2025

APPENDIX D

WETLAND DELINEATION REPORT

CONFIDENTIAL: DO NOT DISTRIBUTE

WETLAND DELINEATION REPORT

RIVERBEND WIND PROJECT

Prepared for

Algonquin Power, LLC
Ms. Gabriella Kovacs
345 Davis Road
Oakville, ON L6J 2X1

Atwell Project No. 21003645

Submitted by Atwell, LLC

August 23, 2023

EXECUTIVE SUMMARY

Atwell, LLC (Atwell) was contracted by Algonquin Power (Algonquin), LLC to complete a wetland delineation and drainage review for the proposed Riverbend Wind Project (hereafter referred to as the "Environmental Study Area"). Algonquin is proposing a wind energy facility within Sanilac County, located within the Lower Peninsula of Michigan. The Environmental Study Area spans approximately 40,299 acres, while the survey corridor used for field studies (hereafter referred to as the "Project Survey Corridor") is approximately 5,523 acres in size.

Atwell conducted a desktop review of aerial photographs, topographic maps, wetland inventory maps, floodplain maps, and county soil surveys for the Environmental Study Area. The desktop review was followed by on-site wetland delineations conducted on the following dates: December 6-9 and 13-17, 2021, January 3-7, April 4-8, 11-14, 2022, and June 5-9, July 10-11, and 17, 2023. Atwell conducted on-site and desktop assessments within the areas targeted for development within the Environmental Study Area. The following summarizes Atwell's findings for the Environmental Study Area, which are intended to be taken in context with the complete report and should not be used as a separate document.

Existing land use within the Environmental Study Area consists primarily of cultivated agricultural fields, farmsteads, pasture, fallow field, and rural residences within a network of agricultural drains and roadside ditches that are prevalent throughout the landscape. Forested areas, wetlands, and watercourses are also prevalent.

Atwell biologists delineated 135 wetlands and 273 watercourses within the Environmental Study Area. A wetland is considered regulated by Michigan Department of Environment, Great Lakes, and Energy (EGLE) if it is five acres in size or larger, and/or if it is connected to or located within 500 feet of a lake, pond, river, or stream. It is Atwell's professional opinion that 106 of the identified wetlands meet the requirements of Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 (NREPA), and should fall under the jurisdiction of EGLE. A Part 303 permit is required for temporary or permanent work within a regulated wetland (e.g., filling, dredging, construction, timber matting, etc.).

The 273 watercourses observed possess a defined bed, banks, and evidence of continued flow or continued occurrence of water. Therefore, these features are anticipated to be regulated by EGLE under Part 301, Inland Lakes and Streams, of the NREPA. A Part 301 permit is required for temporary or permanent work within a regulated watercourse (e.g., filling, dredging, construction, bridges, culverts, etc.).

Part 31, Water Resources Protection, of the NREPA regulates activities within the 100-year floodplain and floodway of a river, stream, or drain, and within the floodplain of any watercourse

with an upstream drainage area of two square miles or larger. A Part 31 permit is required for construction within a regulated floodplain or floodway, including, but not limited to, installation of bridges and culverts. Atwell's review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) for Sanilac County indicates there are no FEMA mapped 100-year floodplains within the Environmental Study Area. Based upon Atwell's desktop drainage review, state regulated floodplains may be associated with 10 watercourses.

The USFWS IPaC List and MNFI results indicate that the Environmental Study Area is within the range of the following eight federally and/or state threatened or endangered species (TES):

- Indiana bat (*Myotis sodalis*) – federally and state endangered
- Northern long-eared bat (*Myotis septentrionalis*) – federally endangered and state threatened
- Piping plover (*Charadrius melodus*) –federally and state endangered
- Rufa red knot (*Calidris canutus rufa*) – federally threatened
- King rail (*Rallus elegans*) – state endangered
- Eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*) – federally and state threatened
- Northern riffleshell (*Epioblasma rangiana*) – federally and state endangered
- Round hickorynut (*Obovaria subrotunda*) – federally threatened and state endangered

The cursory, on-site habitat assessment was not intended to confirm the presence or absence of federally or state listed species. Rather, the assessment of habitat types provides substantive information about the potential for TES based upon habitat conditions. Given the habitat types encountered within the Environmental Study Area during the on-site habitat assessment, potential habitat was observed within or adjacent to the Environmental Study Area for the Indiana bat, northern long-eared bat, and northern riffleshell. Adherence to best management practices for each species would aid in reducing potential impacts to these species or their habitat.

TABLE OF CONTENTS

1 INTRODUCTION 1
2 SITE DESCRIPTION 1
3 METHODS 2
3.1 AERIAL PHOTOGRAPH REVIEW 2
3.2 USGS TOPOGRAPHIC REVIEW 2
3.3 WETLAND INVENTORY MAP REVIEW 2
3.5 FLOODPLAIN MAP REVIEW 3
3.6 ON-SITE LANDSCAPE ASSESSMENT 3
3.7 ON-SITE WETLAND ASSESSMENT 3
3.8 ON-SITE WATERCOURSE ASSESSMENT 3
4 REGULATORY OVERVIEW 4
4.1 FEDERAL 4
4.1.1 Endangered Species Act 4
4.1.2 Migratory Bird Treaty Act 4
4.1.3 Bald and Golden Eagle Protection Act 5
4.2 STATE 5
4.2.1 Natural Resources and Environmental Protection Act – Part 365 5
5 RESULTS, FINDINGS, AND DISCUSSION 5
5.1 OVERALL LANDSCAPE AND TOPOGRAPHY 6
5.2 AGRICULTURAL FIELDS/RURAL RESIDENCES 6
5.3 OTHER UPLANDS 7
5.4 WETLANDS, WATERCOURSES, WATERBODIES, AND FLOODPLAINS 7
5.4.1 EMERGENT WETLANDS 7
5.4.2 SCRUB-SHRUB WETLANDS 8
5.4.3 FORESTED WETLANDS 8
5.4.4 OPEN WATER WETLANDS 9
5.4.5 WATERCOURSES, LAKES, AND PONDS 9
5.4.6 FLOODPLAINS 10
5.4.7 WETLAND AND WATERCOURSE CONFIRMATION 11
6 THREATENED AND ENDANGERED SPECIES 12
6.1.1 Indiana bat (*Myotis sodalis*) 13
6.1.2 Northern long-eared bat (*Myotis septentrionalis*) 15
6.1.3 Piping plover (*Charadrius melodus*) 16
6.1.4 Rufa red knot (*Calidris canutus rufa*) 16

6.1.6 Eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*) 18
6.1.7 Northern Riffleshell (*Epioblasma Rangiana*)..... 19
6.1.8 Round hickorynut (*Obovaria Subrotunda*)..... 19
7 CONCLUSIONS..... 21
8 REFERENCES..... 23

FIGURES

1 Site Location Map
2 Water Resources Map
3 County Soil Survey Map
4 FEMA Floodplain Map
5 Drainage Review Map
6 Wetland Location Map Overview
7 Wetland Location Map

TABLES

1 Wetland and Watercourse Summary Table

APPENDICES

A Photographic Log
B Wetland Determination Forms
C IPaC and MNFI Results

ACRONYMS AND ABBREVIATIONS

Atwell	Atwell, LLC
EGLE	Michigan Department of Environment, Great Lakes, and Energy
FAC	facultative
FACU	facultative-upland
FACW	facultative-wetland
FEMA	Federal Emergency Management Agency
FIRMs	Flood Insurance Rate Maps
NRCS	Natural Resources Conservation Service
NREPA	Natural Resources and Environmental Protection Act, 1994 PA 451
NWI	National Wetland Inventory
OBL	obligate
OW	open water
PEM	palustrine emergent wetland
PSS	palustrine scrub-shrub wetland
PFO	palustrine forested wetland
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U. S. Geological Service

1 INTRODUCTION

Atwell, LLC (Atwell) was contracted by Algonquin Power (MI Energy Developments) LLC (Algonquin) to complete a wetland delineation and desktop-level review for approximately 44,523 acres of the proposed Riverbend Wind Energy Center Project (hereafter referred to as the "Environmental Study Area"). Algonquin is proposing a wind energy facility within Sanilac County, located within the Lower Peninsula of Michigan. Refer to **Figure 1 – Site Location Map**.

Algonquin proposes to build a wind energy facility that will involve the construction of various wind turbine locations and associated infrastructure including, but not limited to, temporary and permanent access roads, operations and maintenance building, an underground electric collection line system, substation, temporary laydown yard, temporary batch plant, a temporary haul route, and a crane walk, electrical connection to permanent switching station owned by ITC.

Atwell's evaluation of the Environmental Study Area focused on targeted areas for development to identify environmental features such as potentially regulated wetlands, watercourses, bodies of water, and floodplains.

In general, wetlands in Michigan fall under the jurisdiction of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) by Part 303, Wetlands Protection, of the *Natural Resources and Environmental Protection Act, 1994 PA 451 (NREPA)* as amended, and/or the U.S. Army Corps of Engineers (USACE). Watercourses that meet the requirements of Part 301, Inland Lakes and Streams, of the NREPA, and floodplains that meet the requirements of Part 31, Water Resources Protection, of the NREPA, fall under the jurisdiction of the EGLE. USACE wetland participating authority is often associated with the Great Lakes and their connecting navigable waterways (e.g., Section 10 waters) and is authorized by Section 404 of the *Federal Water Pollution Control Act of 1972 (*i.e., Clean Water Act*)*. Although the EGLE administers Section 404 of the Clean Water Act, the U.S. Environmental Protection Agency (USEPA) maintains oversight of projects that surpass established criteria. When a project requires federal oversight, the EGLE forwards the permit application to federal agencies such as the USEPA, USACE, and the U.S. Fish and Wildlife Service (USFWS). EGLE does not typically issue permits for projects objected by the USEPA unless specific concerns are resolved.

Rare plant and animal species are protected by state laws based on Part 365, Endangered Species Protection, of the NREPA, and/or federal laws based on the Endangered Species Act of 1973 (ESA). Activities that may impact regulated or protected wetlands, watercourses, floodplains, or threatened and endangered species (TES) must be permitted or approved by authorizing agencies prior to initiation of project activities that impact these natural features.

This report summarizes the natural features found within the Environmental Study Area targeted for development of the proposed facility and associated permits or clearance that may be required prior to the commencement of project activities.

2 SITE DESCRIPTION

The Environmental Study Area spans approximately 44,523 acres in Sanilac County, and is approximately 1.5 miles north of Yale, in the Lower Peninsula of Michigan. The land use within the Environmental Study Area consists primarily of agricultural field and farmland, along with some fallow fields, gravel and paved roads, roadside ditches, overhead distribution lines, and railroad tracks. The Environmental Study Area also contains scattered woodlots, wooded hedgerows, wetlands, and watercourses. Existing development within the Environmental Study Area is largely rural. The topography of the region and the Environmental Study Area is relatively flat to gently rolling, with elevations ranging between approximately 723 feet and 910 feet above sea level. Refer to **Figures 1 and 2**.

Specifically, the Environmental Study Area is located in:

SANILAC COUNTY

Speaker Township:

Township 09 North, 14 East

Sections 1, 2, 4, 5, 7-10, 12-15, 18, 19, 23-26

Fremont Township:

Township 09 North, 15 East

Sections 1, 2, 6, 7, 9-31, 33-36

Elk Township:

Township 10 North, 14 East

Sections 35, 36

3 METHODS

Atwell completed a preliminary desktop review of existing background information for the Environmental Study Area. An extensive review of current and historical background documentation included aerial photographs, U. S. Geological Service (USGS) topographic maps, National Wetland Inventory (NWI) maps, county soil surveys, and Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs). This approach is effective for evaluating broader-scale wetland and watercourse systems and identifying potential natural resource constraints prior to on-site assessments to help with project design and reducing and eliminating impacts. The results of this desktop review were used to focus field efforts on regulated or protected natural resources that are likely to occur within the Environmental Study Area. Refer to **Figures 1-7**.

On-site surveys, including wetland delineations and watercourse documentations were then conducted to locate, verify, or ascertain the probability that protected natural resources were located within the Environmental Study Area. Atwell's knowledge of landscape characteristics, plant identification skills, and desktop review allowed for valid and effective wetland delineations. Additionally, if any wetland delineations were completed outside of the growing season (generally after October 15 and prior to April 15), Atwell revisited these areas during June 2023 to verify wetland boundaries and update, if needed.

3.1 AERIAL PHOTOGRAPH REVIEW

Atwell utilized available Google Earth aerial imagery dated 1985 through 2020 to guide field efforts and outline land cover characteristics within the Environmental Study Area.

3.2 USGS TOPOGRAPHIC REVIEW

The USGS 7.5-minute series Topographic Quadrangles for Speaker and Fremont Townships were reviewed for overall topography, natural features, and additional characteristics of the Environmental Study Area. Refer to **Figure 1 - Site Location Map**.

3.3 WETLAND INVENTORY MAP REVIEW

A review of the NWI maps for Sanilac County was conducted to determine the likely presence, location, size, and type of wetlands that may be located within the Environmental Study Area. The USFWS produces NWI maps through aerial photographic interpretation. Refer to **Figure 2 – Water Resources Map.**

3.4 COUNTY SOIL SURVEY MAP

The U. S. Department of Agriculture Natural Resources Conservation Service (NRCS) soil data for Sanilac County was reviewed to obtain an overall sense of the soil types likely to be observed within the Environmental Study Area. Refer to **Figure 3 - County Soil Survey Maps**.

3.5 FLOODPLAIN MAP REVIEW

FEMA FIRMs are maps that show floodplain areas along rivers and their tributaries. The maps record the following data: 100-year floodplains (1% chance of annual flooding) and 500-year floodplains (0.2% annual chance of flooding), the base flood elevation, and the risk to premium areas developed across a floodplain. A review of the FEMA FIRMs for Sanilac County was conducted to determine the existence, location, and zone of any 100-year floodplain that may be located within the Environmental Study Area. Atwell also performed a preliminary desktop drainage review to determine if state regulated floodplains are present within the Environmental Survey Area. Refer to **Figure 4 – FEMA Floodplain Map** and **Figure 5 – Drainage Review Map**.

3.6 ON-SITE LANDSCAPE ASSESSMENT

An on-site assessment of the Environmental Study Area was conducted to ascertain and verify landscape and land use characteristics. Atwell staff inspected the Environmental Study Area, noting primary and overall land use types, topography, and land cover types. These were compared with topographic map and aerial photographic reviews. Potential environmental challenges or regulatory requirements were noted, if encountered.

3.7 ON-SITE WETLAND ASSESSMENT

Wetlands were identified and delineated utilizing methods prescribed by the USACE 1987 Wetland Delineation Manual and the Regional Supplement to the USACE Wetland Delineation Manual: Northcentral and Northeast Region (USACE 1987; USACE 2012). The delineation of any wetland depends on three basic, interrelated parameters. These parameters are: (1) the presence of hydrophytic vegetation (plants adapted to living in saturated soils), (2) hydric soils (distinctive soil types that develop under saturated conditions), and (3) wetland hydrology (the presence of water at or near the surface for a specific period of time). Wetland boundaries were recorded with a sub-meter GPS unit, which provides a spatial error of less than one meter.

3.8 ON-SITE WATERCOURSE ASSESSMENT

EGLE regulated watercourses were identified and recorded based upon stream morphological characteristics, including (1) the presence of a defined bed, (2) the presence of defined banks, and (3) evidence of continued flow or continued occurrence of water.

4 REGULATORY OVERVIEW

The following sections describe the regulatory context for this analysis, organized by jurisdiction. These regulations may be considerations for development of the project, as appropriate to resource locations.

4.1 FEDERAL

4.1.1 Endangered Species Act

The Endangered Species Act (ESA) of 1973 (16 U.S. Code [U.S.C.] Section 1531 et seq.) protects designated Threatened or Endangered species (TES) from extinction. The ESA makes it unlawful to harm a species listed as threatened or endangered by organizing, funding, or performing actions that may affect the species itself, or its Designated Critical Habitat. Doing so would be considered "take" (i.e., harming, harassing, or wanton killing) of a listed species without a permit. Provisions under the ESA allow for the authorized "incidental" take of listed species while conducting otherwise lawful activities under certain terms and conditions.

4.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703–712) provides protection for many bird species in the United States, as it applies to nearly all migratory species. The MBTA implements treaties with several other nations and was enacted in response to the decline of migratory bird populations from uncontrolled commercial uses. It is unlawful to pursue, hunt, take, capture, kill, possess, or sell birds listed under the MBTA without appropriate permits. Exotic species, including the European starling (Sturnus vulgaris), house sparrow (Passer domesticus), and rock pigeon (Columba livia), are not covered under the MBTA. Game species, such as the wild turkey (Meleagris gallopavo), are also not covered under the MBTA. The statute does not discriminate between live or dead birds and grants full protection to any bird parts, including feathers, eggs, and nests, regardless of conservation status.

Over the last four years, the Department of Interior Solicitor's Office has issued conflicting legal opinions (M-37041 and M-37050) addressing the issue of whether "incidental take" (accidental death or destruction of nests, eggs, or young) is covered under the MBTA. Federal courts have been split on the scope of MBTA's take prohibition as well. On October 4, 2021, however, the USFWS published a final rule to return to implementing the MBTA as "prohibiting incidental take and applying enforcement discretion, consistent with judicial precedent and long-standing agency practice prior to 2017." The final rule went into effect on December 3, 2021. The USFWS has recently solicited public comments and information as they consider developing proposed regulations to codify the interpretation of the MBTA that prohibits incidental take, and a

proposed system of regulations to authorize the incidental take of migratory birds under certain conditions.

4.1.3 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) was enacted in 1940 (16 U.S.C. 668–668d, 54 Stat. 250) to preserve eagle populations from wanton killing and population declines. This act makes it illegal to take bald eagles (Haliaeetus leucocephalus) or golden eagles (Aquila chrysaetos) or to trade in eagle parts, eggs, or feathers. Take has been broadly interpreted to include altering or disturbing nesting habitat. Disturbance is defined by the act as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (50 Code of Federal Regulations Part 22). Rule changes made on December 14, 2016, finalized permit regulations to authorize limited take associated with otherwise lawful activities. These regulations establish permit provisions for intentional take of eagle nests under, limited circumstances. (MNFI 2022).

4.2 STATE

4.2.1 Natural Resources and Environmental Protection Act – Part 365

Under the Natural Resources and Environmental Protection Act (NREPA) as amended, Part 365, Endangered Species Protection, prohibits the take of state listed TES, as well as federally listed wildlife and plants. The NREPA defines take to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct." The Michigan Department of Natural Resources (MDNR) is the agency responsible for implementing and enforcing Part 365 of the NREPA. The Michigan list of TES, last updated in 2009, currently includes 138 endangered species and 258 threatened species. The MDNR is responsible for the conservation, protection, management, use and enjoyment of Michigan's natural and cultural resources for current and future generations. The revised Michigan Wildlife Action Plan (Derosier et al. 2015) identifies key species and habitats across Michigan, along with a comprehensive strategy for coordination of conservation activities for each species. The plan's success will be evaluated in 2025, after a ten-year implementation period.

5 RESULTS, FINDINGS, AND DISCUSSION

Atwell conducted on-site assessments of the Project Survey Corridor on the following dates: December 6-9 and 13-17, 2021, January 3-7, April 4-8, 11-14, 2022, and June 5-9, July 10-11, and July 17, 2023. Representative photographs depicting conditions at the time of the site visits are provided in the Photographic Log in **Appendix A**.

5.1 OVERALL LANDSCAPE AND TOPOGRAPHY

The USGS 7.5-minute series Topographic Quadrangles for Fremont and Speaker Townships, Michigan indicate that elevations within the Environmental Study Area range between approximately 723 feet and 910 feet above mean sea level. The topography of the Environmental Study Area is relatively flat to gently rolling. Land use within the Environmental Study Area consists primarily of agricultural fields and farmland, and a network of associated agricultural drains and roadside ditches. Existing development within the Environmental Study Area is largely rural residential. There are isolated patches of woodlots in the Environmental Study Area, along with a network of linear wetlands and watercourses. The Environmental Study Area includes numerous gravel and paved roadways that are spread relatively evenly across the entire Environmental Study Area, which allows for easy vehicle access. Railroad tracks are present in the Environmental Study Area as well as existing overhead transmission distribution lines. Nearby towns located outside of the Environmental Study Area include Yale to the south, Croswell to the northeast, Brown City to the west, and Peck to the north. Refer to **Figure 1 - Site Location Map**.

The NRCS soil data for Sanilac County indicate that a number of different major soil series are present within the Environmental Study Area. The soils documented as hydric by the NRCS are depicted on the soil survey maps for Sanilac County. Hydric soils are conducive to the growth of hydrophytic (i.e., wetland) vegetation as a result of their tendency to be wet for extended periods of time (NRCS 2014). The presence of poorly drained and hydric soils suggest wetlands may be present within the Environmental Study Area. The composition of soils within the Environmental Study Area indicates that, historically, wetlands may have been abundant in the region. As a result of agricultural development, natural wetlands have become less prevalent over time. Refer to **Figure 3 - County Soil Survey Map**.

The on-site assessment revealed that the overall topography within the Environmental Study Area is largely an agricultural landscape with woodlots, wooded hedgerows, scrub/shrub areas, fallow herbaceous areas, wetlands, watercourses. Descriptions of each general land cover type within and adjacent to the Environmental Study Area are described below.

5.2 AGRICULTURAL FIELDS/RURAL RESIDENCES

The Environmental Study Area consists primarily of agricultural land. During the on-site assessments agricultural lands consisted of planted and recently harvested fields including, but not limited to, corn (*Zea mays*), soybeans (*Glycine max*), wheat (*Triticum aestivum*), sugar beets (*Beta vulgaris*), and fescue (*Festuca spp*.). Agricultural drains, upland ditches, and hedgerows commonly border and separate individual fields. In addition, rural residences, farmsteads, and associated lawn areas are spread throughout the Environmental Study Area and are often located near roads on agricultural properties or on smaller lots adjacent to agricultural lands.

5.3 OTHER UPLANDS

The upland areas within the Environmental Study Area are a mix of agricultural, fallow, and forested land. Upland areas also include actively maintained utility corridors, hedgerows, ditches, swales, and stream and field margins. Some of the more common herbaceous species in the upland areas include Kentucky blue grass (*Poa pratensis*), yellow foxtail (*Setaria pumila*), pennycress (*Thlaspi arvense*), garlic mustard (*Alliaria petiolata*), hairy bittercress (*Cardamine hirsuta*), spring draba (*Draba verna*), and black mustard (*Brassica nigra*). Common upland shrubs and brambles include autumn olive (*Elaeagnus umbellata*), common buckthorn (*Rhamnus cathartica*), gray dogwood *(Cornus racemosa),* and honeysuckle (*Lonicera spp.*). Common upland trees observed include white oak (*Quercus alba*), shagbark hickory (*Carya ovata*), black cherry (*Prunus serotina*), scotch pine (*Pinus sylvestris*), white pine (*Pinus strobus*), red maple (*Acer rubrum*), red pine (*Pinus resinosa*), and bur oak (*Quercus macrocarpa*).

5.4 WETLANDS, WATERCOURSES, WATERBODIES, AND FLOODPLAINS

A total of 135 wetlands, 273 watercourses, and one waterbody were documented within the Project Survey Corridor. Of the 135 wetlands, 46 are considered entirely emergent, 15 are considered emergent with scrub-shrub components, 7 are considered emergent with forested components, 12 are considered entirely scrub-shrub, 4 are considered scrub-shrub with forested components, 38 are considered entirely forested, 5 are considered emergent with scrub-shrub and forested components, and 8 are considered open water. Of the documented wetlands, 106 features appear to meet the requirements of Part 303, Wetlands Protection, of the NREPA, 1994 PA 451, as amended, and are therefore anticipated to fall under the jurisdiction of EGLE. A wetland is considered regulated by EGLE under Part 303, Wetlands Protection, of the NREPA, as amended, if it is five acres in size or larger, and/or if it is connected to, or located within, 500 ft of a lake, pond, river, or stream. The State definition of a lake, pond, river, and stream is found in Parts 301 and 303 of PA 631 of Public Acts of 2018, amending NREPA, 1994 PA 451.

All 273 watercourses identified possess a defined bed, bank, and evidence of continued flow and/or continued occurrence of water and therefore meet the requirements of Part 301, Inland Lakes and Streams, of the NREPA, as amended. Refer to **Table 1 – Wetland, Watercourse, and Waterbody Summary Table**, **Figure 7 - Wetland Location Map,** and the Wetland Determination Forms in **Appendix B**.

5.4.1 EMERGENT WETLANDS

Palustrine emergent (PEM) wetlands were a common wetland type within the Project Survey Corridor due to the agricultural landscape, network of roads and ditches, and maintained conditions of the existing transmission corridor. Of the 135 wetlands, 46 were classified as entirely emergent (Wetlands A6, AB1, AC2, AC3, AC5, AD1, AD3, AE1, AE2, AF2, AH5, AJ1, AJ2,

AJ4, AK1, BA1, BA2, BB5, BC2, BC4, BC5, BE1, C3, CB1, CB2, CD1, CE1, CJ1, DB2, DB3, DD1, DD2, DD4, DD5, DD9, EE2, F3, F4, II3, T1-T3, T5, T8, and W1-W3) and an additional 26 wetlands contain emergent components (Wetlands AB1, AD2, AD4, AF3, AH1, AH2, BA3, BB2, BB4, BF1-BF4, CG1, DC1, CF1, F1, F2, F5, H1, L1, M1, P1, P3, and T4). PEM wetlands were observed in various places such as roadside ditches, active farm fields, pasture, fallow areas, and riparian areas. Common vegetation observed within the wetlands includes reed canary grass (*Phalaris arundinacea*; FACW), Indian hemp (*Apocynum cannabnum*; FAC), crested sedge (*Carex cristatella*; FACW), giant goldenrod (*Solidago gigantea*; FACW), dark green bulrush (*Scirpus atrovirens*; OBL), willowherb (*Epilobium ciliatum*; FACW), lakebank sedge (*Carex lacustris*; OBL), Canada bluejoint grass (*Calamagrostis canadensis*; OBL), and sensitive fern (*Onoclea sensibilis*; FACW). Common wetland hydrologic indicators observed within the emergent wetlands include surface water, surface saturation, high water table, sparsely vegetated concave surface, drainage patterns, algal mat, saturation visible on aerial imagery, stunted plants, geomorphic position, and FAC-Neutral test. Common hydric soil indicators observed include depleted below dark surface, depleted matrix, and redox dark surface.

For wetland specific vegetation and indicators, refer to the Wetland Determination Forms in **Appendix B**.

5.4.2 SCRUB-SHRUB WETLANDS

Of the 135 wetlands delineated, 12 wetlands were classified as entirely Palustrine scrub-shrub (PSS) (Wetlands AH3, AH4, CD2, CG2, DD3, DD6, DD7, EE1, HH2, HH4, P2, and T7), and an additional 19 wetlands contain scrub-shrub components (Wetlands AB1, AD2, AD4, B2, BB2, BB3, BF1-BF4, BG1, CG1, DA1, F5, II2, M1, P1, T4, and T6). Scrub-shrub wetlands tend to have species compositions very similar to emergent wetlands, except with a higher density of shrubs and woody vegetation. Common vegetation observed within the wetlands includes sandbar willow (*Salix interior*; FACW), grey dogwood (FAC), buttonbush (*Cephalanthus occidentalis*; OBL), common buckthorn (FAC), and green ash saplings (*Fraxinus pennsylvanica*; FACW). Common wetland hydrologic indicators observed within the wetlands include surface water, surface saturation, water-stained leaves, geomorphic position, FAC-Neutral test, high water table, and crayfish burrows. Common hydric soil indicators observed include depleted matrix, redox dark surface, and loamy mucky mineral.

For wetland specific vegetation and indicators, refer to the Wetland Determination Forms in **Appendix B**.

5.4.3 FORESTED WETLANDS

Of the 135 wetlands delineated, 38 wetlands were classified as entirely Palustrine forested (PFO) (Wetlands A1, A2, AC4, AF1, AI1, AJ3, B1, BC3, BD1, BF5, C1, C2, C4, CA1, CC1, DA2, DB1, DB4,

DC2, DE1, DF2, DH1, FF1, FF2, GG1, HH1, HH3, II4, J1-J3, K1, M2, N1, R2, S1, U1, and Y1), and an additional 12 wetlands contain forested components (Wetlands AF3, AH1, AH2, BA3, BB4, DC1, DF2, F1, F2, H1, L1, and P3). Palustrine forested wetlands tended to have species compositions very similar to the delineated PEM and PSS wetlands, except with a higher density of trees. The most frequently encountered woody species in PFO wetlands included green ash, cottonwood (*Populus deltoides;* FAC), box elder maple (*Acer negundo*; FAC), red maple (*Acer rubrum*; FAC), silver maple (*Acer saccharinum*; FACW), quaking aspen (*Populus tremuloides*; FACU), swamp white oak (*Quercus bicolor*; FACW), and pin oak (*Quercus palustris*; FACW). Common wetland hydrologic indicators observed within the wetlands include surface saturation, drainage patterns, water-stained leaves, geomorphic position, and FAC-Neutral test. Common hydric soil indicators observed include depleted matrix, redox dark surface, and redox depressions.

For wetland specific vegetation and indicators, refer to the Wetland Determination Forms in **Appendix B**.

5.4.4 OPEN WATER WETLANDS

Of the 135 delineated wetlands, eight were classified as open water (OW) (Wetlands AE3, BB1, BC1, DA2, DC3, DD8, FF3, and II1). OW wetlands observed within the Project Survey Corridor had minimal vegetation and surface water totaling less than one acre. These wetlands often also had PEM and PSS fringe. Emergent vegetation that was observed included sensitive fern, broadleaf cattail (*Typha latifolia*; OBL), and reed canary grass. Scrub-shrub vegetation that was observed included sandbar willow, grey dogwood, musclewood (*Carpinus caroliniana*; FAC). Common wetland hydrologic indicators observed within the wetlands include surface water, surface saturation, high water table, geomorphic position, inundation visible on aerial imagery, FAC-Neutral test, water-stained leaves, moss trim lines, stunted or stressed plants, and sparsely vegetated concave surface. Common hydric soil indicators observed include depleted matrix, sandy mucky mineral, loamy mucky mineral, histosol, and 2 cm muck.

5.4.5 WATERCOURSES, LAKES, AND PONDS

Watercourses were identified based upon stream morphological characteristics such as presence of a defined bed, banks, and evidence of continued flow or continued occurrence of water. The Project Survey Corridor contains 273 watercourses including crossings of the following named watercourses: Turner Drain, McIntyre & Willing Drain, William Doan Drain, Sheridan Drain, Lawson Drain, Downey Drain, Seymore Creek, Conroy & Ferriby Drain, Willey Drain, Lavell Drain, Black Creek Drain, Rector Drain, Sloat Drain, Potts Drain, Lord Drain, Cline and Kerr Drain, Cork Drain, Solan Drain, Macklem Drain, East Branch Speaker & Maple Drain, Rattray Drain, Wilson Drain, Spring Creek, Hunt Drain, Jackson Creek, Putney Drain, Sanilac and St. Clair Drain, Cole Drain, and various unnamed watercourses. The majority of these watercourses are roadside

ditches and/or drains created or altered to expedite drainage for agriculture, and generally separate and border agricultural fields. Most of the features were intermittent in nature, 83 were considered perennial with constantly flowing water, and 25 were considered ephemeral. All 273 watercourses are likely regulated under Part 301, Inland Lakes and Streams, of the NREPA, as amended because they display a definitive bed and bank with a regular occurrence of flow.

One waterbody was identified within the Project Survey Corridor (Waterbody CE1). Waterbody CE1 had water approximately five feet deep, with substrate made of stones, boulders, and silt.

Refer to the **Table 1 -Wetland and Watercourse Summary Table** and **Figure 7 - Wetland Location Map** for approximate watercourse and waterbody locations.

5.4.6 FLOODPLAINS

FEMA FIRMs for Sanilac County were reviewed to determine if portions of the Project Survey Corridor lie within mapped floodplains, floodways, or other flood prone areas. According to FEMA FIRM Panels #26151C0567B, #26151C0557B, #26151C0575B, #26151C0559B, #26151C0560B, #26151C0525B, #26151C0550B, #26151C0425B, and #26151C0570B, FEMA mapped 100-year floodplains were not mapped within the Project Survey Corridor.

A preliminary desktop drainage review was conducted to determine if watercourses with an upstream drainage area of greater than two square miles were present within the Environmental Study area; indicating the presence of a potentially state regulated floodplain. Based on Atwell's preliminary desktop drainage review, there are 10 watercourses with upstream drainage areas larger than two square miles within the Project Survey Corridor: Macklem Drain, East Branch Speaker and Maple Valley Drain, Downey Drain, Sanilac and Saint Clair Drain, Potts Drain, Bradley Creek, Seymore Drain, Perry Drain, Willey Drain, and Black Creek.

Part 31, Water Resources Protection, of NREPA regulates activities within the 100-year floodplain and floodway of rivers, streams, drains, and watercourses that have upstream drainage areas of two square miles or larger. Temporary crossings of regulated floodplains are generally exempt from permitting if the floodplain will be restored to existing elevations; however, temporary watercourse crossings within a 100-year floodplain or floodway may require a permit from EGLE. Based upon the desktop and on-site assessments, Atwell anticipates that potential 100-year floodplains meeting the requirements of Part 31 of NREPA appear to be present within the Project Survey Corridor. Refer to **Figure 4 – FEMA Floodplain Map** and **Figure 5 – Drainage Review Map** for the locations of these features.

5.4.7 WETLAND AND WATERCOURSE CONFIRMATION

In June of 2023, additional on-site verifications were conducted to confirm the presence and characteristics of wetlands delineated outside of the growing season. Wetlands which required confirmation were identified via desktop assessment and previous delineation notes and photos. Each wetland was revisited, and all changes to vegetation, hydrology, soils, and boundaries were documented with an updated wetland delineation dataform and corresponding data point. During the site visit, two wetlands were removed, one watercourse was combined with a wetland, 11 wetlands decreased in size, and two wetlands increased in size. These changes were documented with photographs and GPS data, and have been reflected in the current delineation maps, dataforms, and photolog. See **Table 1 -Wetland and Watercourse Summary Table, Figure 7 - Wetland Location Map,** Photographic Log in **Appendix A**, and the Wetland Determination Forms in **Appendix B**.

6 THREATENED AND ENDANGERED SPECIES

This document provides information that aids in compliance with Part 365 of the NREPA and Section 7 of the ESA of 1973. The potential presence of TES or suitable TES habitat within the Project Survey Area was assessed by obtaining agency lists and by cursory on-site evaluations of habitat characteristics.

Atwell reviewed the USFWS IPaC System information regarding federally threatened and endangered species and other resources such as critical habitat on a project location basis. IPaC results indicated that the Project Survey Area is within the range of the eight federally-listed species identified below (USFWS 2023a). Refer to the USFWS IPaC Resource List in **Appendix C**.

- Indiana bat (*Myotis sodalis*) – federally and state endangered
- Northern long-eared bat (*Myotis septentrionalis*) – federally endangered and state threatened
- Piping plover (*Charadrius melodus*) –federally and state endangered
- Rufa red knot (*Calidris canutus rufa*) – federally threatened
- King rail (*Rallus elegans*) – state endangered
- Eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*) – federally and state threatened
- Northern riffleshell (*Epioblasma rangiana*) – federally and state endangered
- Round hickorynut (*Obovaria subrotunda*) – federally threatened and state endangered

MNFI's electronic database was searched for the sections of each township and range associated with the Project Survey Area. The MNFI review of township, range, and section species location information, for the Environmental Study Area location, resulted in one documented record of state threatened or endangered species (MNFI 2023). Refer to the MNFI Web Database Search Results in **Appendix C**.

It should be noted that the bald eagle (*Haliaeetus leucocephalus*), a species that has been delisted under ESA but is still federally protected under the BGEPA, was not documented by the MNFI search for sections overlapping the Project Survey Area but was documented nearby. This species has been included in this report because of the federal protection under BGEPA.

During the wetland site visits conducted on December 6-9 and 13-17, 2021, January 3-7, April 4-8, 11-14, 2022, and June 5-9, July 10-11, and 17, 2023. Atwell staff did not observe any of the above listed TES within or adjacent to the Project Survey Area. Inclusion on the IPaC and MNFI lists does

not indicate that the species is present within the Project Survey Area. Discussions of the TES listed in the databases and their preferred habitat types are provided below.

6.1.1 Indiana bat (*Myotis sodalis*)

The federally and state endangered Indiana bat is a small migratory mammal found inhabiting sites across the eastern United States, with Michigan constituting part of the northern edge of this species' range (Kurta 2008). During summer months, after winter hibernation, Indiana bats relocate to feeding and tree roosting areas to rear young and store energy for the coming winter. This species' summer habitat consists of a wide variety of forested habitats where they roost, forage, and travel, which range from dense to loose aggregates of trees with variable amounts of canopy closure, as well as linear features such as fencerows, riparian forests, and other wooded corridors. Typically, preferred summer roosting habitat consists of small to medium sized river and stream corridors with well-developed riparian woods, woodlots within three miles of small to medium rivers and streams, and upland forests (USFWS 2016a). For foraging, Indiana bats typically select semi-open forested areas with open understories, forest edges, and riparian areas (USFWS 2007); however, research indicates that some adjacent and interspersed non-forested habitats such as emergent wetlands, edges of agricultural fields, old fields, wooded fencerows, and open pastures with isolated trees may also provide foraging habitat (Menzel et al. 2001). The Indiana bat prefers not to cross large, open expanses (USFWS 2007), but research suggests that foraging over open fields or bodies of water does occur, although less commonly than in forested sites or along forest edges (Menzel et al. 2001). In Michigan, savanna habitats adjacent to riparian corridors may have been historically important for roost sites, because Indiana bats are thought to favor sun-exposed trees for warmth at the northern limit of their range (MNFI 2020).

Indiana bat roosts are nearly always found under the loose, peeling bark of dead or dying trees, including snags (i.e., missing the top) that are 10 feet in height or greater, or under the exfoliating bark of live trees, such as shagbark hickory (*Carya ovata*) and white oak (*Quercus alba*), and occasionally in cracks, crevices, or hollows (USFWS 2007; USFWS 2016a). The suitability of any tree as a roost site is determined by its condition (dead or alive), quantity of exfoliating bark or crevices, solar exposure (for thermal regulation), location in relation to other potential roost sites, and distance from water sources and foraging areas (USFWS 2007). The suitability of a roost tree is also determined by its size; Indiana bats prefer live trees or snags that are five inches in diameter at breast height (dbh) or greater and have exfoliating bark, cracks, crevices, and/or hollows (USFWS 2017), with a minimum of nine inches dbh preferred by maternity colonies (Kurta 2008). Additionally, the number of roost trees in close proximity to one another largely influences roost selection, as female Indiana bats roost together and prefer clusters of roost trees, often comprised of different tree species which can be arranged up to 330 feet apart (Kurta 2008).

During winter months, the Indiana bat hibernates colonially in caves or abandoned mines in the east-central United States, primarily in Indiana, Kentucky, Missouri, and New York (Kurta 2008). There are three known instances where this species has expanded its current winter range beyond its historic limits due to occupying man-made structures. These include: the Black Ball Mine in northern Illinois, Lewisburg Limestone Mine in west central Ohio, and the Tippy Dam near the eastern border of Lake Michigan (USFWS 2007). The site of the Tippy Dam in Manistee County is the only documented location in Michigan where the Indiana bat hibernates during winter months; however, the state of Michigan is not listed by the USFWS to contain designated critical habitat for this species (USFWS 2017).

6.1.1.1 Initial Habitat Assessment

According to MNFI, there are no documented occurrences within Sanilac County (MNFI 2023). The MNFI database returned no Indiana bat records for sections traversed by the Project Survey Corridor. The nearest Indiana bat hibernaculum is located at Tippy Dam; approximately 169 miles northwest of the Project Survey Corridor. According to the USFWS draft recovery plan (USFWS 2007), Livingston County is the closest county at 49 miles southwest of the Project Survey Corridor that contains a locally extant maternity colony for Indiana bat however, the specific location is not publicly available.

According to desktop and on-site reviews, the Project Survey Corridor is dominated by cultivated crops with forest stands greater than five acres interspersed throughout. Additionally, various forested areas associated with riparian corridors, shelterbelts, and hedgerows were also identified within the Project Survey Corridor. Trees identified within the larger woodlots include shagbark hickory, white oak, American basswood (*Tilia americana*), American elm (*Ulmus americana*), silver maple *(Acer saccharinum*), black cherry (*Prunus serotina*), boxelder maple, and various aspens (*Populus spp.*). According to the USFWS bat suitability model, multiple locations within the Project Survey Corridor contain USFWS designated suitable habitat for special concern bats (USFWS 2023b). The areas dedicated by USFWS include several woodlots and surrounding areas throughout the entire Project Survey Corridor. It is possible that additional, undiscovered INBA roosts or maternity colonies may occur within the area. Due to the presence of wooded riparian corridors within and adjacent to the to the Project Survey Corridor, the presence of forested stands on-site, and interspersed shelterbelts and hedgerows, there is potential for suitable habitat for INBA to be present within the Project Survey Corridor.

The USFWS advises that if the proposed project includes tree clearing activities within suitable Indiana bat habitat and no more than 10% of the existing forested/wooded habitat will be cut within a half-mile buffer around the Project Survey Corridor, then tree clearing activities should be avoided between April 1st and September 30th in order to avoid a likelihood of impacts to this species (USFWS 2008).

6.1.2 Northern long-eared bat (*Myotis septentrionalis*)

The northern long-eared bat is a federally endangered and threatened species. During the summer, this small migratory bat characteristically roosts in forested habitats (Owen et al. 2003). Northern long-eared bats roost in trees as small as 3 inches dbh cavities and crevices, and occasionally in bat-houses or buildings (Kurta 2008; USFWS 2014a). Northern long-eared bat maternity roosts are often located beneath exfoliating bark (Foster and Kurta 1999). Data on potential foraging distance from roost territory is limited; however, research indicates that the northern long-eared bat's home range at two sites varied from approximately 160 to 215 acres in West Virginia and New Hampshire, respectively (Owen et al. 2003; Yates et al. 2014). The northern long-eared bat utilizes a wide variety of forested/wooded summer habitats, where they roost, forage, and travel; this may also include some adjacent and interspersed unforested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields, and pastures. The wooded areas may have dense or loose aggregates of trees with variable amounts of canopy closure (USFWS 2014a). However, this species generally avoids open fields, and is more likely to utilize wooded edges and tree lines when moving locally between roosting and foraging areas (Henderson and Broders 2008).

Northern long-eared bat colonies swarm and mate during the months of September and October, before beginning hibernation within caves and mines in mid-to-late October (Kurta 2008). The northern long-eared bat is more common in northern Michigan, where abundant forests and potential hibernation sites are relatively close to each other, in comparison to southern Michigan where the forest habitat is more fragmented and this species is less frequent (Kurta 2008).

6.1.2.1 Initial Habitat Assessment

According to MNFI, there are no documented occurrences within Sanilac County (MNFI 2023). The MNFI database returned no northern-long eared bat records for sections traversed by the Project Survey Corridor.

According to desktop and on-site reviews, the Project Survey Corridor is dominated by cultivated crops with forest stands greater than five acres interspersed throughout. Additionally, various forested areas associated with riparian corridors, shelterbelts, and hedgerows were also identified within the Project Survey Corridor. Trees identified within the larger woodlots include shagbark hickory, white oak, American basswood, American elm, silver maple, black cherry, boxelder maple, and various aspens. According to the USFWS bat suitability model, multiple locations within the Project Survey Corridor contain USFWS designated suitable habitat for special concern bats (USFWS 2023b). The areas designated by USFWS include several woodlots and surrounding areas throughout the entire Project Survey Corridor. It is possible that additional, undiscovered NLEB roosts or maternity colonies may occur within the area. Due to the presence of wooded riparian corridors within and adjacent to the to the Project Survey Corridor, the presence of forested stands

on-site, and interspersed shelterbelts and hedgerows, there is potential for suitable habitat for NLEB to be present within the Project Survey Corridor.

The USFWS advises that if the proposed project includes tree clearing activities within suitable Indiana bat habitat and no more than 10% of the existing forested/wooded habitat will be cut within a half-mile buffer around the Project Survey Corridor, then tree clearing activities should be avoided between April 1st and September 30th in order to avoid a likelihood of impacts to this species (USFWS 2008).

6.1.3 Piping plover (*Charadrius melodus*)

The piping plover is a federally and state endangered bird species. This robin-sized bird has a sandy-brown back, yellow legs, and a white rump. In Michigan, piping plovers breed exclusively along Great Lake shorelines, where they prefer wide, sandy, open beaches (Hyde 1999). After returning to Michigan from over-wintering sites, the piping plovers nest from April through July (MNFI 2009). Nesting may occur on the open beach near the edge of the foredune or in the cobble pan behind the foredune. Territories can include adjacent rivers, lagoons, channels, or interdunal wetlands that provide additional food sources. During the breeding season, a piping plover's home range is generally confined to the vicinity of its nest. From July through September, piping plovers depart for wintering grounds further south. Predators of piping plovers include gulls, owls, hawks, skunks, etc., but the cause of this species' decline is believed to be beach habitat alteration and beach recreational use by humans (MNFI 2009).

6.1.3.1 Initial Habitat Assessment

The MNFI lists no occurrences of the piping plover in Sanilac County (MNFI 2023). There are no documented occurrences of this species within sections intersected by the Project Survey Corridor (MNFI 2023). In Michigan this species is restricted to primary Great Lake shorelines. This species is found on wide, sandy beaches and adjacent areas such as interdunal wetlands, inlets, and lagoons. Piping plovers are typically not found inland in forested wetlands, farm fields, emergent/scrub-shrub wetlands, or similar habitat types (MNFI 2021). The Project Survey Coordinator is located approximately 7 miles west of Lake Huron. Due to the lack of primary beachfront or foredune habitat, it is unlikely the proposed activities will impact the piping plover or its habitat.

6.1.4 Rufa red knot (*Calidris canutus rufa*)

The 'rufa' subspecies of the red knot is a federally threatened shorebird species that migrates through the Great Lakes region during spring (May and early June) and fall (July through October). Along the shores of the Great Lakes in Michigan, it is considered a low-density spring migrant and more frequently recorded in fall along Lakes Erie and Lake Michigan (USFWS 2014b). During

migration, this species uses sandy coastal habitats at or near tidal inlets or at the mouths of bays and estuaries, as well as other habitats such as brackish lagoons, tidal mudflats, etc. (Baker et al. 2013). In Michigan, this species can be expected to be present during migration along the Great Lakes shoreline, as well as inland occasionally on mudflats (e.g., at low reservoirs, flooded fields) (USFWS 2014b).

6.1.4.1 Initial Habitat Assessment

According to the USFWS IPaC results for the Project Survey Corridor, "this species only needs to be considered if the following condition applies: only actions that occur along coastal areas during the red knot migratory window of May 1 - September 30." Refer to the USFWS IPaC Resource List in Appendix C.

The southern terminus of the Project Survey Corridor is approximately 7 miles west of the Lake Huron shoreline, which may be within migratory stopover reach of individual red knots that are migrating along the shore. However, migratory stopover habitat is unlikely because Lake Huron's shores are separated from the Project Survey Corridor by forested areas, agricultural land, and development, which likely form a habitat break between truly coastal beach and river mouth habitats and inland field or wetlands. In addition, the Environmental Study Area lacks open beaches, shorelines, mudflats and large barren fields, which are the type of features that seemingly attract rufa red knots. There are no documented occurrences of this species within sections intersected by the Project Survey Corridor in Sanilac County (USFWS 2014b). Based on the lack of appropriate stopover habitat within the Project Survey Corridor, it is Atwell's professional opinion that the proposed activities are unlikely to impact the rufa red knot.

6.1.5 King rail (*Rallus elegans*)

The king rail is a state endangered species within Michigan. King rails are brown to rust-colored birds with relatively long legs, toes, and bill, which are suited for walking and feeding in marshy habitats. King rails range from New England to Cuba and Mexico (Rabe 2001). Michigan is at the northern edge of their breeding range, and all of Michigan's king rail pairs and young migrate south for the winter. Sporadic occurrences of this species have been documented throughout mainly southern Michigan, but there are not many recent records of king rails breeding in Michigan (MNFI 2007). Ideal habitats for this species are coastal wetland edges and wetlands ranging from wet prairies to inundated marshes. Typical or important vegetation components of king rail habitat include cattails, sedges, grasses, and sometimes willow and dogwood shrubs (Rabe 2001; MNFI 2007). Within Michigan king rails are active from about mid-April to late September, although stragglers may remain longer in the fall. If flushed, king rails generally make a short, low flight with legs dangling above wetland vegetation. The rarity of these birds in Michigan can be attributed to loss of wetlands and a resulting paucity of suitable habitat.

6.1.5.1 Initial Habitat Assessment

According to MNFI, there is one documented occurrence within Sanilac County in 1950 (MNFI 2023). During field surveys conducted by Atwell, no wet prairies were observed. However, some of the wetlands did contain plant species associated with the nesting habits of king rail. However, these species are common within wetlands throughout the state of Michigan and are not rare. No individuals of this species were observed during the time of the wetland field surveys. Due to the types and quality of the wetlands observed and the rare and historic nature of the sighting, it is unlikely for the king rail to occur within the Project Survey Corridor.

6.1.6 Eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*)

The eastern massasauga rattlesnake (EMR) is federally threatened and a state special concern species. Eastern massasauga rattlesnakes occur throughout Michigan's Lower Peninsula. Michigan appears to be the last stronghold for this species in the U.S., based on the number of extant populations in the state compared to other states within its range. This snake species is found in a variety of wetland habitats, but southern Michigan populations are typically found in open, shallow wetlands, particularly prairie fens. Other wetland habitat types include bogs, shrub swamps, wet meadows, marshes, moist grasslands, wet prairies, and floodplain forests (Lee and Legge 2000). In many areas, massasaugas also use adjacent uplands during the summer (USFWS 2016b), including grasslands, old fields, and forest openings (Lee and Legge 2000). The snake hibernates in wetlands and poorly drained areas including hummocks of sphagnum and shrubs, burrows, and/or tree roots close to the groundwater level and emerges in the spring as water level rises. Suitable sites appear to be characterized by mixed sunny and shaded areas for thermoregulation, a water table near the surface for hibernation, and variable elevations between adjoining lowland and upland habitats (Lee and Legge 2000). Home ranges of this species have been found to range between 3 to 41 acres for individual snakes (Lee and Legge 2000). Massasauga's usually are active from mid-March or April to October or early November (MNFI 2020).

6.1.6.1 Initial Habitat Assessment

No suitable habitat for the EMR was documented within the Project Survey Corridor during the field surveys conducted by Atwell. Additionally, the closest Tier I and Tier II habitat are approximately 17 and 16 miles southwest, respectively. Due to the distance between both Tier I and Tier II habitat and the habitats found within the Project Survey Corridor, it is unlikely for the EMR to occur within the Project Survey Corridor.

6.1.7 Northern Riffleshell (*Epioblasma Rangiana*)

The northern riffleshell is a federally and state endangered mussel species. It has an ovate to rectangular shell that is green-yellow with dark, closely-spaced rays on its surface. In Michigan, this species has been historically found in southeastern rivers in the state, particularly within Bay, Lenawee, Monroe, Oakland, Sanilac, and Wayne counties as recent as 2009 (MNFI 2021). The preferred habitat of the northern riffleshell usually consists of fine to coarse gravel, mixed with sandy substrates, in large to small streams with a swift current. Individuals are often found buried deep in the sediment with the feeding siphons exposed. This species is known to be sensitive to agricultural and industrial runoff, dams and reservoirs, erosion, and zebra mussels (USFWS 2014c). The northern riffleshell requires a stable, undisturbed habitat and a sufficient population of host fish for reproduction. Within a habitat that meets these specific requirements, the northern riffleshell may live up to 50 years.

6.1.7.1 Initial Habitat Assessment

There are six documented occurrences of the northern riffleshell in Sanilac County (MNFI 2023) as recently as 2009, but the species has not been documented within sections traversed by the Project Survey Corridor (MNFI 2023). Various watercourses containing potentially suitable habitat were identified during the wetland field surveys; however, these watercourses have already been heavily impacted by channelization from agricultural practices, and they all likely have been impacted by agricultural runoff. In addition, according to the Michigan Mussels Web Application from MNFI, there are no mapped 'grouped' streams within the Project Survey Corridor (MNFI 2022). Streams included in Groups 1, 2, and 3 within the Michigan Mussels Web Application are more likely to contain the species like the northern riffleshell. BMP's will be implemented to avoid sediment runoff in compliance with state permit requirement.

6.1.8 Round hickorynut (*Obovaria Subrotunda*)

The round hickorynut is a state endangered mussel species. Similar to the northern riffleshell mussel, its range in Michigan is restricted to the easternmost counties in the southern Lower Peninsula. Historically, this species occurred in Sanilac, St. Clair, Macomb, Wayne, Monroe and Lenawee Counties. More recently, live and recently dead mussels have only been found in the Pine and Belle Rivers in St. Clair County, Lake St. Clair in Macomb County, and the Detroit River in Wayne County (Carman 2001). This species occurs in medium sized streams in areas with moderate flow and a sand or gravel substrate (Cummings and Mayer 1992). It can also be found in larger rivers and along the shores of Lake Erie and Lake St. Clair, near river mouths (Carman 2001).

6.1.8.1 Initial Habitat Assessment

There is one documented occurrence of the round hickorynut in Sanilac County (MNFI 2023) in 1934. The species has not been documented within sections traversed by the Project Survey Corridor (MNFI 2023), and the historical nature of the last documented occurrence of this species, likely precludes it from being located within the project area.

7 CONCLUSIONS

The Environmental Study Area is situated in an agricultural landscape dominated by cultivated fields, farmsteads, and an associated network of agricultural drains and roadside ditches. Woodlots, hedgerows, pasture, wetlands, and fallow areas are also interspersed throughout the Environmental Study Area. Riverbend has carefully selected the proposed locations of turbines, associated access roads, and additional project infrastructure to avoid natural features to the greatest extent practicable. Atwell biologists delineated 135 wetlands and 273 watercourses within the Project Survey Corridor. It is Atwell's professional opinion that 106 of the field-identified wetlands meet the requirements of Part 303, Wetlands Protection, of the NREPA, and should fall under the jurisdiction of EGLE. A Part 303 permit is required for temporary or permanent work within a regulated wetland (e.g., filling, dredging, construction, timber matting, etc.).

The 273 watercourses observed all possess a defined bed, banks, and evidence of continued flow or continued occurrence of water. Therefore, these features are anticipated to be regulated by EGLE under Part 301, Inland Lakes and Streams, of the NREPA. A Part 301 permit is required for temporary or permanent work within a regulated watercourse (e.g., filling, dredging, construction, bridges, culverts, etc.).

Part 31, Water Resources Protection, of the NREPA regulates activities within the 100-year floodplain and floodway of a river, stream, or drain, and within the floodplain of any watercourse with an upstream drainage area of two square miles or larger. A Part 31 permit from EGLE is required for construction within a regulated floodplain or floodway, including, but not limited to, installation of bridges and culverts. Atwell's review of the FEMA FIRMs for Sanilac County indicates there are no FEMA mapped 100-year floodplains within the Environmental Study Area. However, based upon Atwell's desktop drainage review, state regulated floodplains are likely present within the Environmental Study Area.

The USFWS IPaC List and MNFI results indicate that the Environmental Study Area is within the range of the following eight species:

- Indiana bat (*Myotis sodalis*) – federally and state endangered
- Northern long-eared bat (*Myotis septentrionalis*) – federally endangered and state threatened
- Piping plover (*Charadrius melodus*) –federally and state endangered
- Rufa red knot (*Calidris canutus rufa*) – federally threatened
- King rail (*Rallus elegans*) – state endangered

- Eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*) – federally and state threatened
- Northern riffleshell (*Epioblasma rangiana*) – federally and state endangered
- Round hickorynut (*Obovaria subrotunda*) – federally threatened and state endangered

The cursory, on-site habitat assessment was not intended to confirm the presence or absence of federally or state listed species. Rather, the assessment of habitat types provides substantive information about the potential for TES based upon habitat conditions. Given the habitat types encountered within the Environmental Study Area during the on-site habitat assessment, potential habitat was observed within or adjacent to the Environmental Study Area for the Indiana bat, northern long-eared bat, and northern riffleshell. Adherence to best management practices for each species would aid in reducing potential impacts to these species or their habitat.

8 REFERENCES

Baker A, Gonzalez P, Morrison RI, Harrington BA. 2013. Red Knot (Calidris canutus), version 2.0. In: Poole A, editor. The Birds of North America. Ithaca, New York: Cornell Lab of Ornithology. [accessed 2014 Dec 9]. http://bna.birds.cornell.edu/bna/species/563.

Carman SM. 2001. Special Animal Abstract for Obovaria subrotunda (Round Hickorynut). Lansing, MI: MNFI. [accessed 2017 Jul 11]. https://mnfi.anr.msu.edu/abstracts/zoology/Obovaria_subrotunda.pdf.

Cummings KS, Mayer CA. 1992. Field Guide to Freshwater Mussels of the Midwest. Champaign, IL: Illinois Natural History Survey.

Derosier AL, Hanshue SK, Wehrly KE, Farkas JK, Nichols MJ. 2015. Michigan's Wildlife Action Plan: 2015-2025. http://www.michigan.gov/dnr/0,4570,7-153-10370_30909---,00.html.

Foster RW, Kurta A. 1999. Roosting ecology of the northern bat (*Myotis septentrionalis*) and comparisons with the endangered Indiana bat (*Myotis sodalis*). Journal of Mammalogy.:659–672.

Henderson LE, Broders HG. 2008. Movements and resource selection of the northern long-eared myotis (Myotis septentrionalis) in a forest-agriculture landscape. Journal of Mammalogy. 89(4):952–963.

Hyde. 1999. Special Animal Abstract for Charadrius melodus (piping plover). Lansing, MI: Michigan Natural Features Inventory.

Kurta A. 2008. Bats of Michigan. Indiana State University Center for North American Bat Research and Conservation (Publication No. 2).

Lee Y, Legge JT. 2000. Special animal abstract for Sistrurus catenatus catenatus (eastern massasauga) [Updated 2013]. http://mnfi.anr.msu.edu/abstracts/zoology/Sistrurus_catenatus.pdf.

Menzel MA, Menzel JM, Carter TC, Ford WM, Edwards J. 2001. Review of the Forest Habitat Relationships of the Indiana Bat (Myotis sodalis). USDA Forest Service Report No.: NE-284.

MNFI [Michigan Natural Features Inventory]. 2007. Rare Species Explorer (Web Application). [accessed 2014 Aug 21]. http://mnfi.anr.msu.edu/explorer.

MNFI [Michigan Natural Features Inventory]. 2009. Michigan's Rare Animals. https://mnfi.anr.msu.edu/species/animals.

MNFI [Michigan Natural Features Inventory]. 2020. Michigan Natural Features Inventory web database search. https://mnfi.anr.msu.edu/search/login.cfm.

MNFI [Michigan Natural Features Inventory]. 2021. Michigan Natural Features Inventory web database search. https://mnfi.anr.msu.edu/search/login.cfm.

MNFI [Michigan Natural Features Inventory]. 2022. Michigan mussels web app. https://mnfi.maps.arcgis.com/apps/webappviewer/index.html?id=3860be5d7f28471396d44e0b384abb12.

MNFI [Michigan Natural Features Inventory]. 2023. Michigan Natural Features Inventory web database search. https://mnfi.anr.msu.edu/search/login.cfm.

NRCS [Natural Resources Conservation Service]. 2014. National Hydric Soils List. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/use/hydric/?cid=nrcs142p2_053959.

Owen SF, Menzel MA, Ford WM, Chapman BR, Miller KV, Edwards JW, Wood PB. 2003. Home-range Size and Habitat Used by the Northern Myotis (Myotis septentrionalis). The American Midland Naturalist. 150(2):352–359. doi:10.1674/0003-0031(2003)150[0352:HSAHUB]2.0.CO;2.

Rabe ML. 2001. Special animal abstract for Rallus elegans (king rail). http://mnfi.anr.msu.edu/abstracts/zoology/Rallus_elegans.pdf.

USACE [U.S. Army Corps of Engineers]. 1987. Corps of Engineers Wetlands Delineation Manual. USACE, Environmental Laboratory Report No.: Technical Report Y-87-1 (online edition). http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf.

USACE [U.S. Army Corps of Engineers]. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0). Vicksburg (MS): U.S. Army Engineer Research and Development Center Report No.: ERDC/ EL TR-12-1. https://usace.contentdm.oclc.org/utils/getfile/collection/p266001coll1/id/7640.

USFWS [U.S. Fish and Wildlife Service]. 2007. Indiana bat (*Myotis sodalis*) draft recovery plan: first revision. Fort Snelling (MN): U.S. Fish and Wildlife Service - Great Lakes-Big Rivers Region - Region 3. http://www.fws.gov/midwest/endangered/mammals/inba/pdf/inba_fnldrftrecpln_apr07.pdf.

USFWS [U.S. Fish and Wildlife Service]. 2008. Summary of Indiana Bat Ecology. https://www.fws.gov/midwest/endangered/section7/s7process/mammals/inba/INBAEcologySummary.html.

USFWS [U.S. Fish and Wildlife Service]. 2014a. Northern long-eared bat interim conference and planning guidance. https://www.fws.gov/northeast/virginiafield/pdf/NLEBinterimGuidance6Jan2014.pdf.

USFWS [U.S. Fish and Wildlife Service]. 2014b. Rufa Red Knot Background Information and Threats Assessment - Supplement to Endangered and Threatened Wildlife and Plants; Final Threatened Status for the Rufa Red Knot (Calidris canutus rufa) [Docket No. FWS–R5–ES–2013–0097; RIN AY17]. Pleasantville, New Jersey: USFWS, Northeast Region.

USFWS [U.S. Fish and Wildlife Service]. 2014c. Endangered Species: Northern Riffleshell (Epioblasma torulosa rangiana). http://www.fws.gov/midwest/endangered/clams/n-riffleshell.html.

USFWS [U.S. Fish and Wildlife Service]. 2016a. Northern Long-Eared Bat 4(d) Rule and Private Landowners in Michigan. U.S. Fish and Wildlife Service - Midwest Region. https://www.fws.gov/midwest/EastLansing/te/nleb/pdf/MINLEBFactSheet22July2016.pdf.

USFWS [U.S. Fish and Wildlife Service]. 2016b. Endangered and Threatened Wildlife and Plants; Threatened Species Status for the Eastern Massasauga Rattlesnake. https://www.federalregister.gov/documents/2016/09/30/2016-23538/endangered-and-threatened-wildlife-and-plants-threatened-species-status-for-the-eastern-massasauga?utm_campaign=subscription%20mailing%20list&utm_source=federalregister.gov&utm_medium=email.

USFWS [U.S. Fish and Wildlife Service]. 2017. Species Profile for Indiana Bat. Environmental Conservation Online System (ECOS). https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=5949.

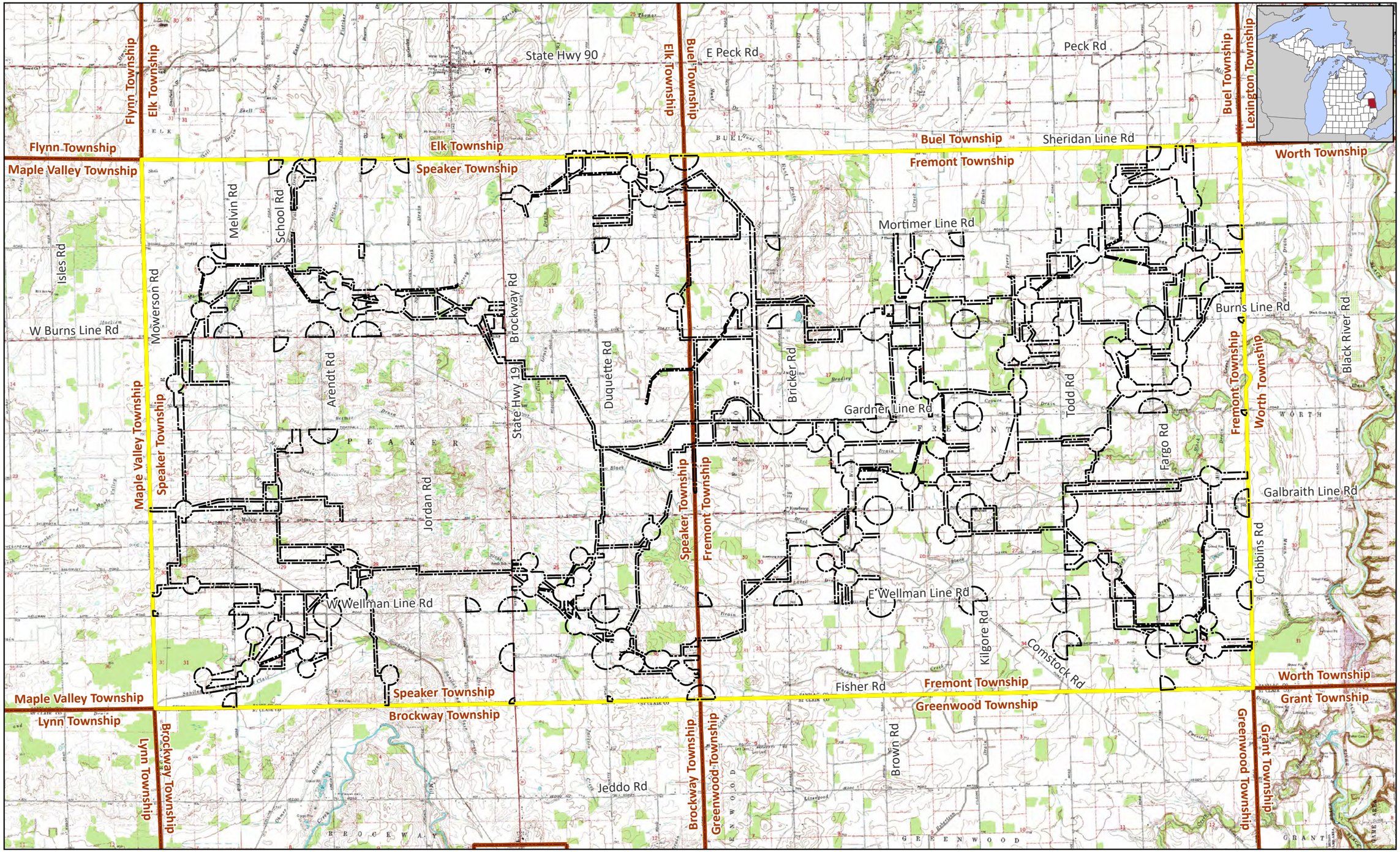
USFWS [U.S. Fish and Wildlife Service]. 2020. Migratory Bird Treaty Act protected species (10.13). MBTA as of March 2020. https://www.fws.gov/birds/management/managed-species/migratory-bird-treaty-act-protected-species.php.

USFWS [U.S. Fish and Wildlife Service]. 2023a. IPaC - information for planning and consultation. Environmental Conservation Online System (ECOS). https://ecos.fws.gov/ipac/.

USFWS [U.S. Fish and Wildlife Service]. 2023b. Indiana Bat habitat suitability model - Michigan D-key. https://www.fws.gov/media/indiana-bat-habitat-suitability-model-michigan-d-key.

Yates D, Ingalls M, Eaton L, Pau N. 2014. Home range analysis and roost tree selection of Northern long-eared (Myotis septentrionalis) and Eastern small-footed bats (Myotis leibii) at Great Bay NWR, NH. http://nebwg.org/AnnualMeetings/2014/OnlinePosters/Yates_MYLEMYSE.pdf.

FIGURES



Source: USGS TOPOGRAPHIC QUADRANGLES
BROWN CITY, YALE, ROSEBURG (1961)

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- TOWNSHIP BOUNDARY

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 1
SITE LOCATION MAP

DATE: 8/15/2023

REVISIONS

SCALE: 0 1,250 2,500 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

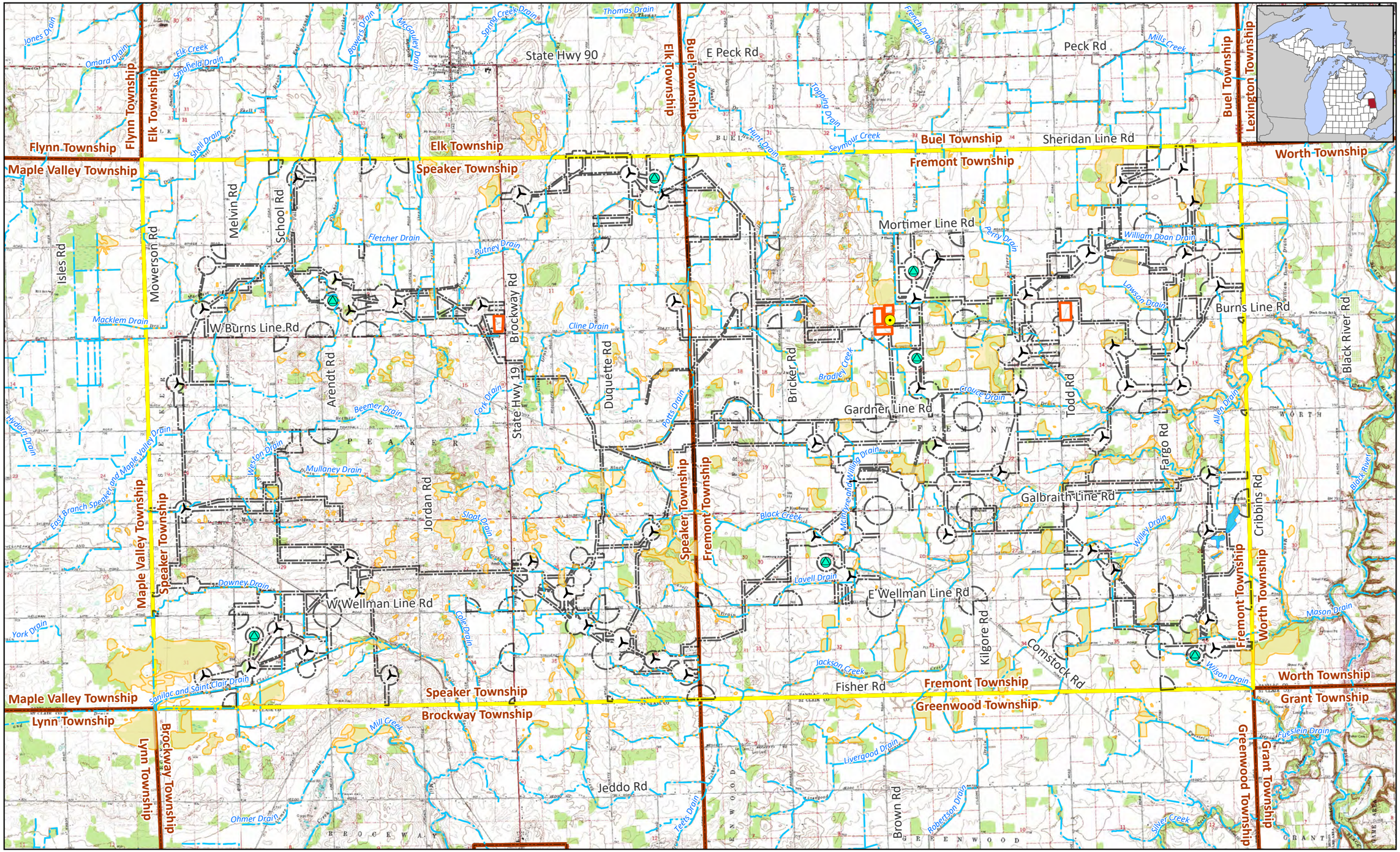
GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 1

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx



Source: USGS TOPOGRAPHIC QUADRANGLES
BROWN CITY, YALE, ROSEBURG (1961)

LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED SUBSTATION
- PROPOSED MET TOWER
- PROPOSED FACILITIES
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- TOWNSHIP BOUNDARY
- WATERCOURSE (NHD)
- WATERBODY (NHD)
- WETLAND (NWI)

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36).
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 2
DESKTOP WATER RESOURCES MAP

DATE: 8/15/2023

REVISIONS

SCALE: 0 1,250 2,500 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 1

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

Sanilac County Soil Survey (NRCS)

Symbol	Soil Name	Acres	Percent
*AbA0	Alluvial land, poorly drained loams, 0 to 2 percent slopes	35.18	0.63%
*CcA0	Carlisle muck, 0 to 2 percent slopes	2.63	0.05%
*CdA0	Carlisle and Linwood mucks, 0 to 2 percent slopes	1.13	0.02%
CgA1	Covert loamy sand, 0 to 2 percent slopes, slightly eroded	1.01	0.02%
CvrabA	Conover loam, 0 to 3 percent slopes	1,834.89	32.72%
CvracB	Conover-Williamstown loams, 0 to 6 percent slopes	28.61	0.51%
Gc	Gravel pit	1.40	0.03%
IbA0	Iosco and Winegars sandy loams, 0 to 2 percent slopes	30.47	0.54%
IcA0	Iosco sandy loam and Covert loamy sand, 0 to 2 percent slopes	44.92	0.80%
IcB1	Iosco sandy loam and Covert loamy sand, 2 to 7 percent slopes, slightly eroded	1.25	0.02%
*JaA0	Jeddo silty clay loam, 0 to 2 percent slopes	121.28	2.16%
*Jd	Jeddo silt loam	1.16	0.02%
*LdA0	Linwood muck, 0 to 2 percent slopes	18.97	0.34%
*LeA0	Linwood and Timakwa mucks, 0 to 2 percent slopes	17.55	0.31%
MaB1	McBride fine sandy loam, 2 to 6 percent slopes, slightly eroded	1.95	0.03%
MbA1	McBride sandy loam and Montcalm loamy sand, 0 to 3 percent slopes, slightly eroded	23.81	0.42%
MbB1	McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, slightly eroded	28.25	0.50%
MbB3	McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, severely eroded	0.94	0.02%
MbC1	McBride sandy loam and Montcalm loamy sand, 8 to 15 percent slopes, slightly eroded	12.91	0.23%
MbD1	McBride sandy loam and Montcalm loamy sand, 15 to 25 percent slopes, slightly eroded	1.22	0.02%
MbE3	McBride sandy loam and Montcalm loamy sand, 15+ percent slopes, moderately or severely e	0.00	0.00%
MeA1	Mancelona loamy sand, 0 to 3 percent slopes, slightly eroded	33.32	0.59%
MeB1	Mancelona loamy sand, 3 to 8 percent slopes, slightly eroded	0.11	0.00%
MeB2	Mancelona loamy sand, 3 to 8 percent slopes, moderately eroded	4.97	0.09%
MeC1	Mancelona loamy sand, 8 to 15 percent slopes, slightly eroded	0.18	0.00%
MfA1	Marlette loam, 0 to 2 percent slopes, slightly eroded	90.23	1.61%
MfB1	Marlette loam, 2 to 6 percent slopes, slightly eroded	62.22	1.11%
MfB3	Marlette loam, 2 to 6 percent slopes, severely eroded	5.27	0.09%
MfC1	Marlette loam, 6 to 12 percent slopes, slightly eroded	12.29	0.22%
MfC2	Marlette loam, 6 to 12 percent slopes, moderately eroded	5.78	0.10%
MfC3	Marlette loam, 6 to 12 percent slopes, severely eroded	4.16	0.07%
MgA1	Marlette silt loam and loam, 0 to 2 percent slopes, slightly eroded	226.05	4.03%
MgB1	Marlette silt loam and loam, 2 to 6 percent slopes, slightly eroded	50.88	0.91%
MgB2	Marlette silt loam and loam, 2 to 6 percent slopes, moderately eroded	4.05	0.07%
MgC1	Marlette silt loam and loam, 6 to 12 percent slopes, slightly eroded	2.98	0.05%
MhA1	Melita and Arenac loamy sands, 0 to 2 percent slopes, slightly eroded	11.07	0.20%
MnB1	Montcalm loamy sand, 2 to 6 percent slopes, slightly eroded	1.46	0.03%
*PcA0	Parkhill loam, 0 to 1 percent slopes	1,511.39	26.95%
*PdA0	Parkhill loam and clay loam, 0 to 2 percent slopes	961.34	17.14%
*PeA0	Parkhill loam and mucky loam, 0 to 2 percent slopes	179.23	3.20%
RdA0	Roscommon mucky loamy sand, 0 to 2 percent slopes	11.79	0.21%
ReA1	Grattan sand, 0 to 2 percent slopes, slightly eroded	1.78	0.03%
ReB1	Grattan sand, 2 to 7 percent slopes, slightly eroded	7.55	0.13%
SbA0	Saverine and Iosco fine sandy loams, 0 to 2 percent slopes	52.09	0.93%
SbB1	Saverine and Iosco fine sandy loams, 2 to 7 percent slopes, slightly eroded	2.93	0.05%
SbB2	Saverine and Iosco fine sandy loams, 2 to 7 percent slopes, moderately eroded	4.05	0.07%
*TbA0	Tappan mucky loam, 0 to 2 percent slopes	96.31	1.72%
*TgA0	Tonkey and Bach fine sandy loams, 0 to 2 percent slopes	35.71	0.64%
W	Water	0.00	0.00%
*WaA0	Wallkill loam, 0 to 2 percent slopes	10.92	0.19%
*WcA0	Washtenaw loam and silt loam, 0 to 2 percent slopes	8.51	0.15%
*WdA0	Washtenaw sandy loam and loam, 0 to 2 percent slopes	0.41	0.01%
Totals for Area of Interest		**5,609**	**100%**

* Indicates hydric or partially hydric soils

Source: USGS TOPOGRAPHIC QUADRANGLES
BROWN CITY, YALE, ROSEBURG (1961)

LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED SUBSTATION
- PROPOSED MET TOWER
- PROPOSED FACILITIES
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- TOWNSHIP BOUNDARY

N

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 3
COUNTY SOIL SURVEY MAP

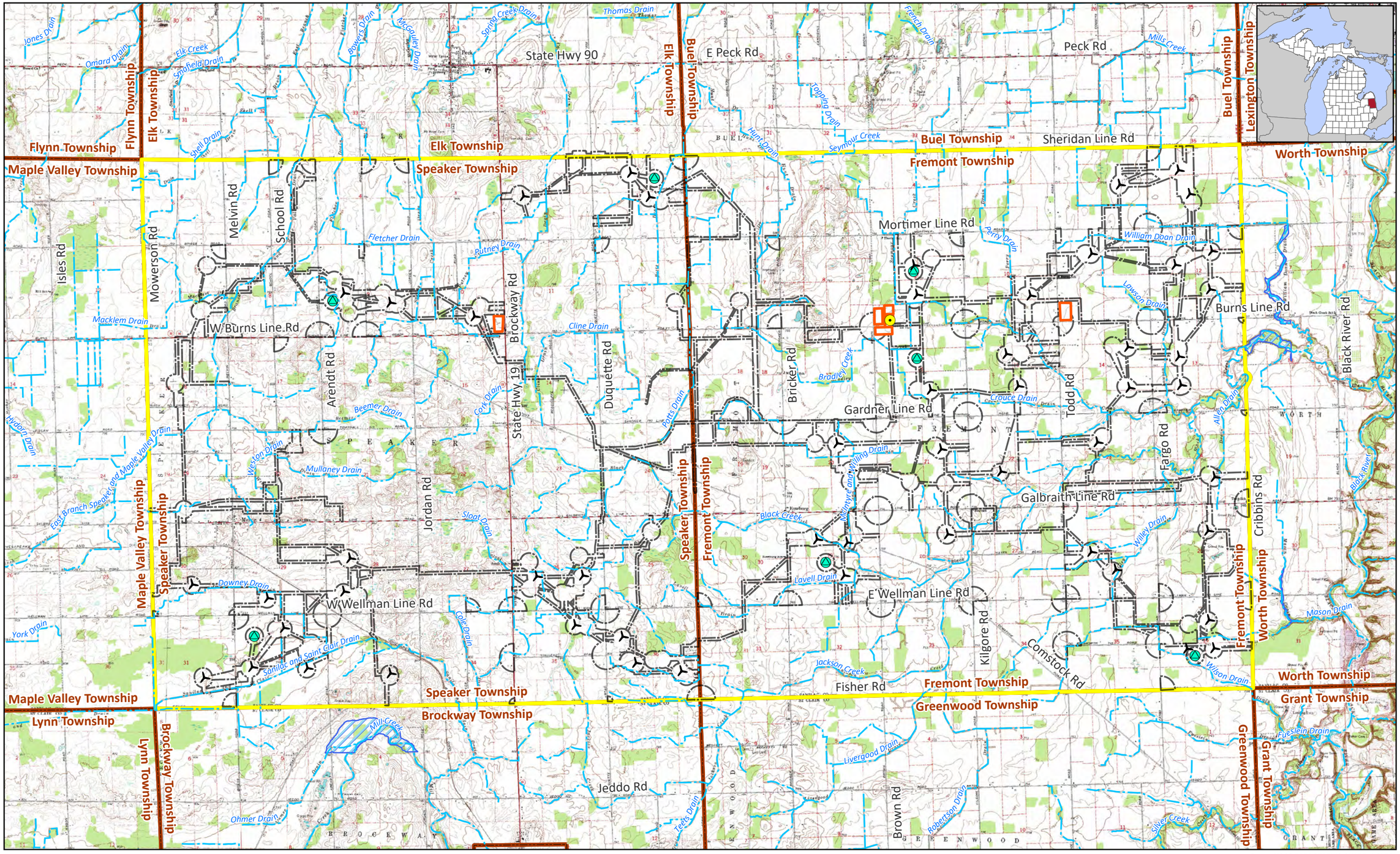
DATE: 8/15/2023

REVISIONS

SCALE: 0 1,250 2,500 Feet

DR.	C.J.
CH.	D.N.
P.M.	JEFF WILLIAMS
BOOK:	--
GIS FILE:	--
JOB:	21003645
FILE CODE:	--
SHEET NO:	1

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx



Source: USGS TOPOGRAPHIC QUADRANGLES
BROWN CITY, YALE, ROSEBURG (1961)
FEMA FIRM: 26151C0567B, 26151C0557B, 26151C0575B, 26151C0559B, 26151C0560B, 26151C0525B, 26151C0550B, 26151C0425B, 26151C0570B

LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED SUBSTATION
- PROPOSED MET TOWER
- PROPOSED FACILITIES
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- TOWNSHIP BOUNDARY
- WATERCOURSE (NHD)
- Zone A: subject to inundation by the one-percent-annual chance flood event

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWNRANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36).
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

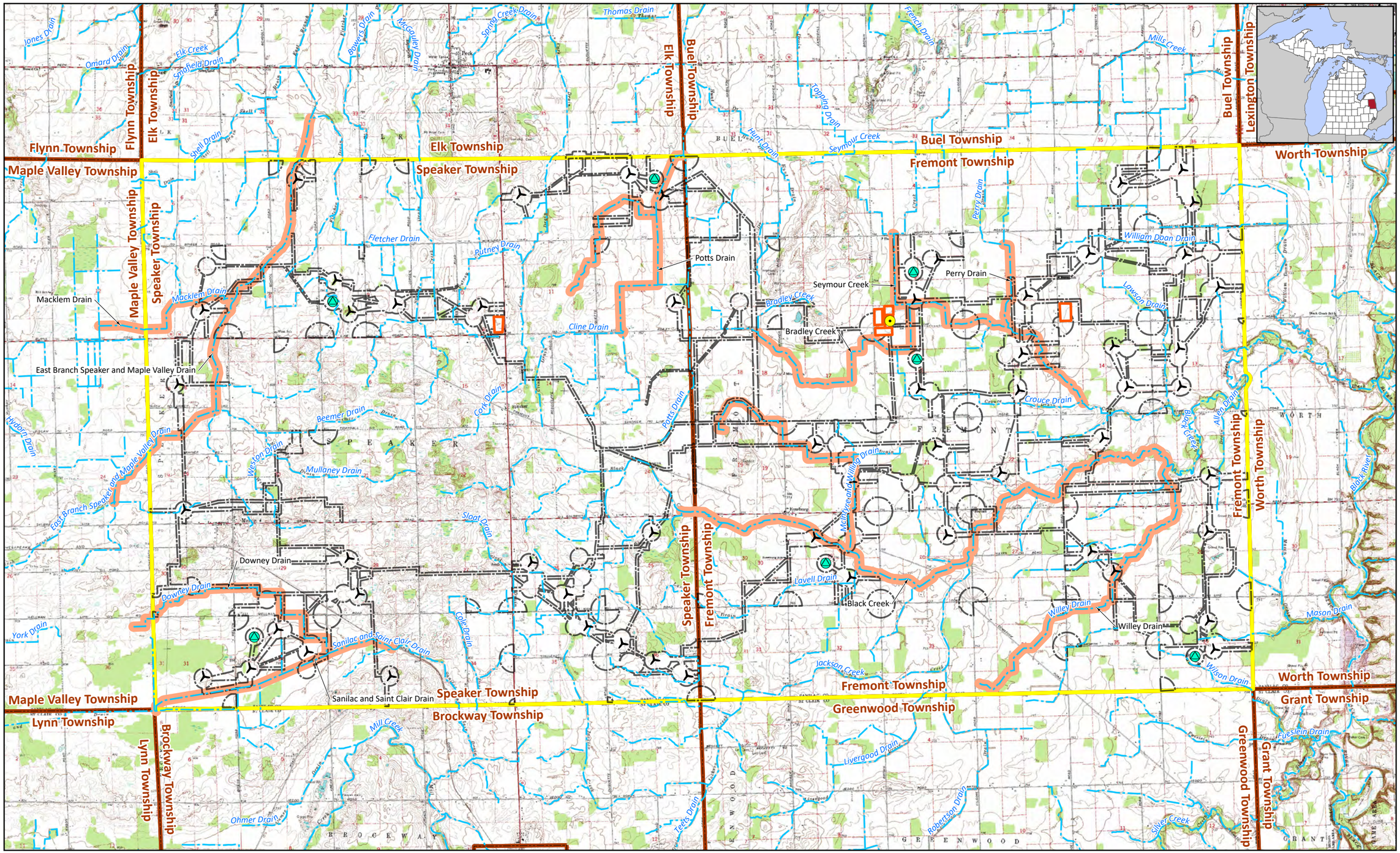
FIGURE 4
FEMA FLOOD ZONE MAP

DATE: 8/15/2023

REVISIONS

SCALE: 0 1,250 2,500 Feet

DR.	C.J.
CH.	D.N.
P.M.	JEFF WILLIAMS
BOOK:	--
GIS FILE:	--
JOB:	21003645
FILE CODE:	--
SHEET NO:	1



Source: USGS TOPOGRAPHIC QUADRANGLES
BROWN CITY, YALE, ROSEBURG (1961)

LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED MET TOWER
- PROPOSED SUBSTATION
- PROPOSED FACILITIES
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- TOWNSHIP BOUNDARY
- WATERCOURSE (NHD)
- WATERSHED WITH UPSTREAM DRAINAGE AREA GREATER THAN 2 SQUARE MILES

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 5
DRAINAGE REVIEW MAP

DATE: 8/15/2023

REVISIONS

SCALE: 0 1,250 2,500 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

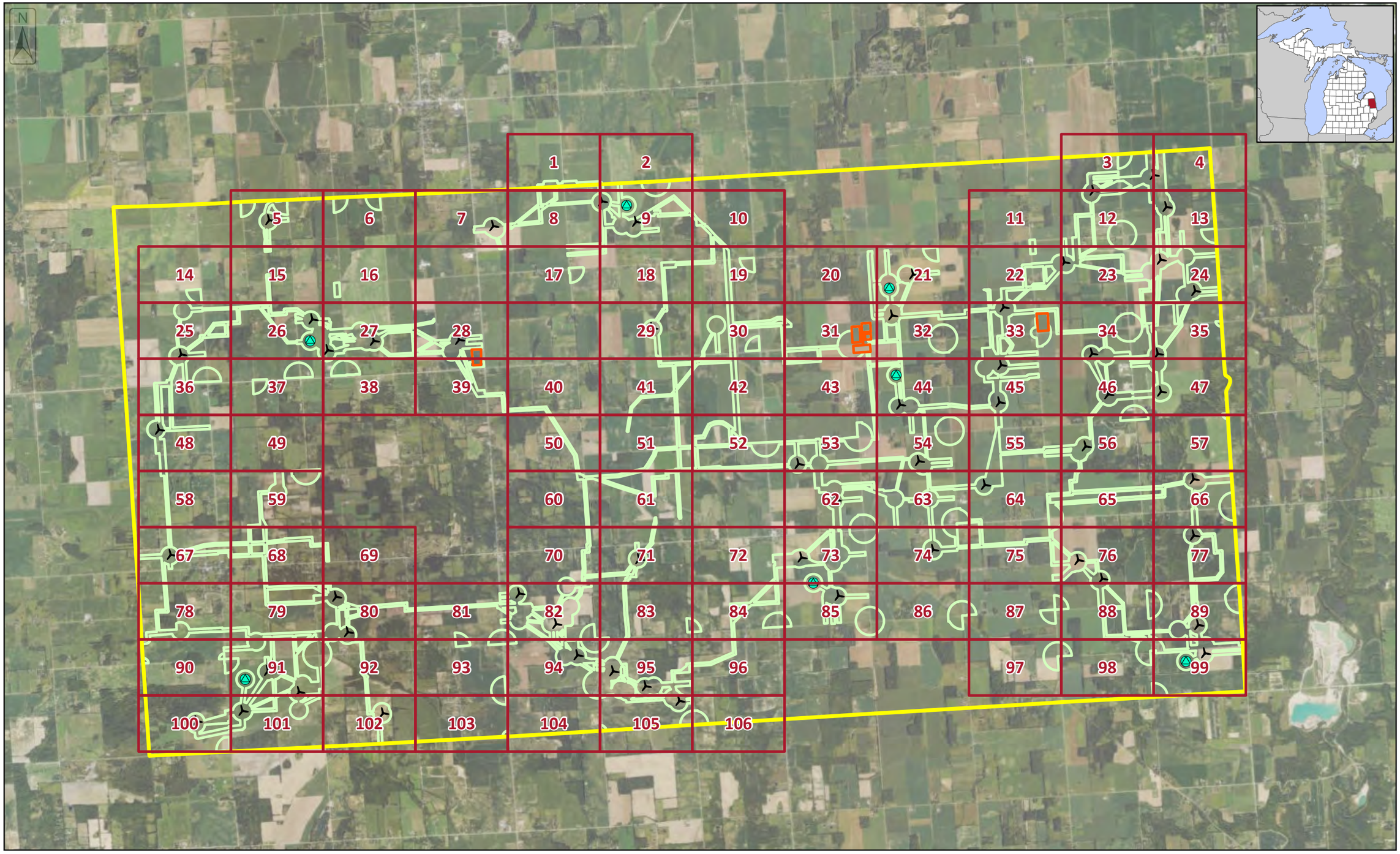
GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 1

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED MET TOWER
- PROPOSED FACILITIES
- MAP INDEX
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND DELINEATION MAP INDEX

DATE: 8/15/2023

REVISIONS

SCALE: 0 1,250 2,500 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

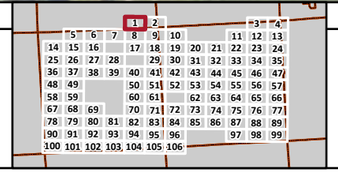
SHEET NO: INDEX MAP

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 1 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

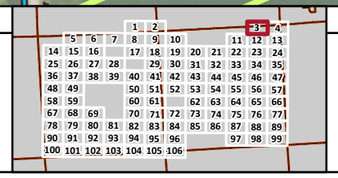
SHEET NO: 2 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 3 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 4 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 5 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

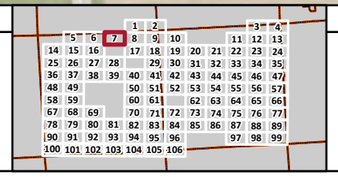
SHEET NO: 6 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 7 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

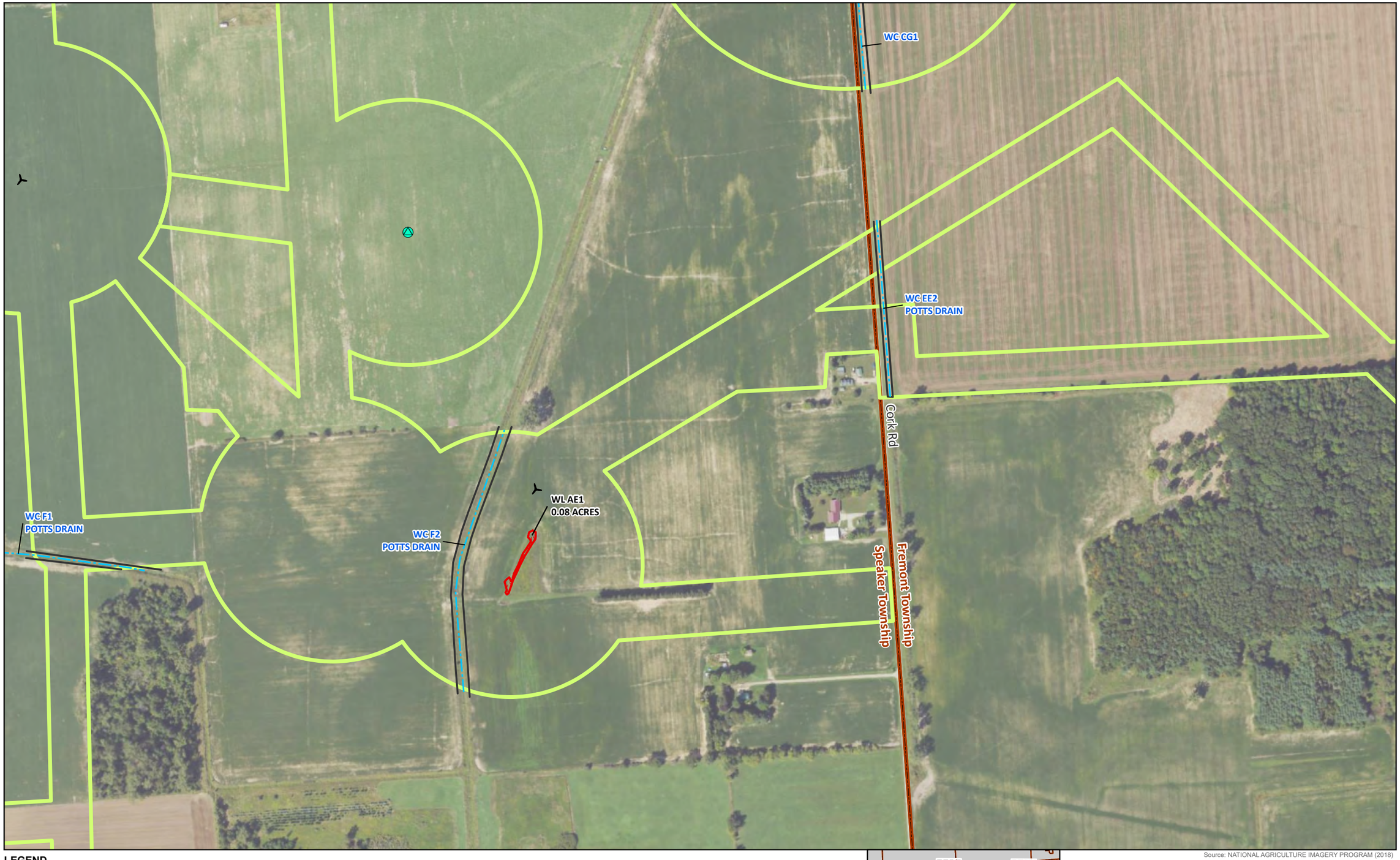
GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 8 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx



LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED MET TOWER
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 9 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 10 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 11 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 12 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.
P.M. JEFF WILLIAMS
BOOK: --
GIS FILE: --
JOB: 21003645
FILE CODE: --
SHEET NO: 13 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 14 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 15 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR.	C.J.	CH.	D.N.
P.M.	JEFF WILLIAMS		
BOOK:	--		
GIS FILE:	--		
JOB:	21003645		
FILE CODE:	--		
SHEET NO:	16 OF 106		

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 17 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 18 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 19 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 20 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED MET TOWER
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

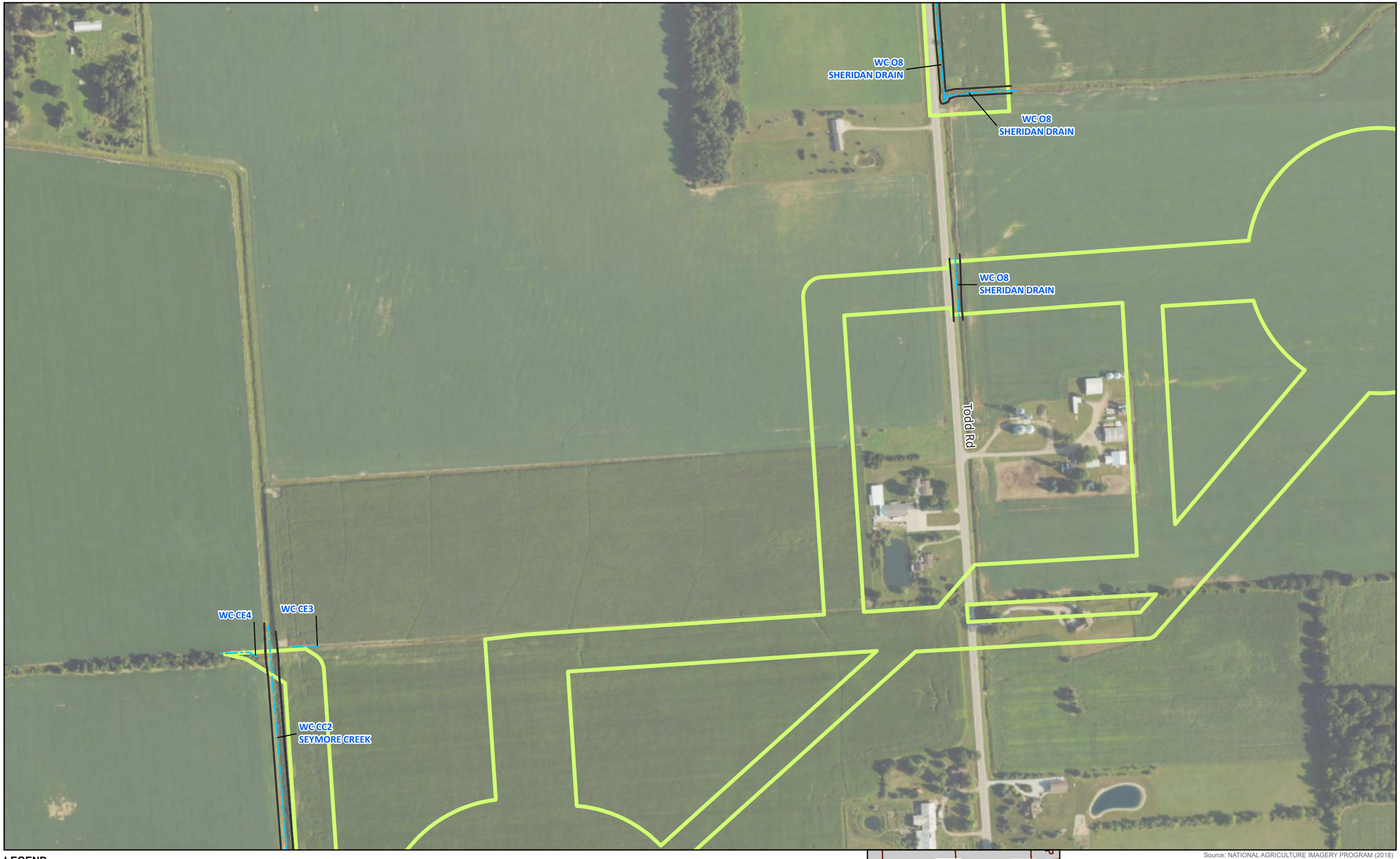
DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.
P.M. JEFF WILLIAMS
BOOK: --
GIS FILE: --
JOB: 21003645
FILE CODE: --
SHEET NO: 21 OF 106

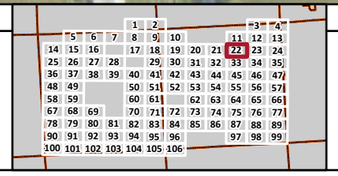
G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx



LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

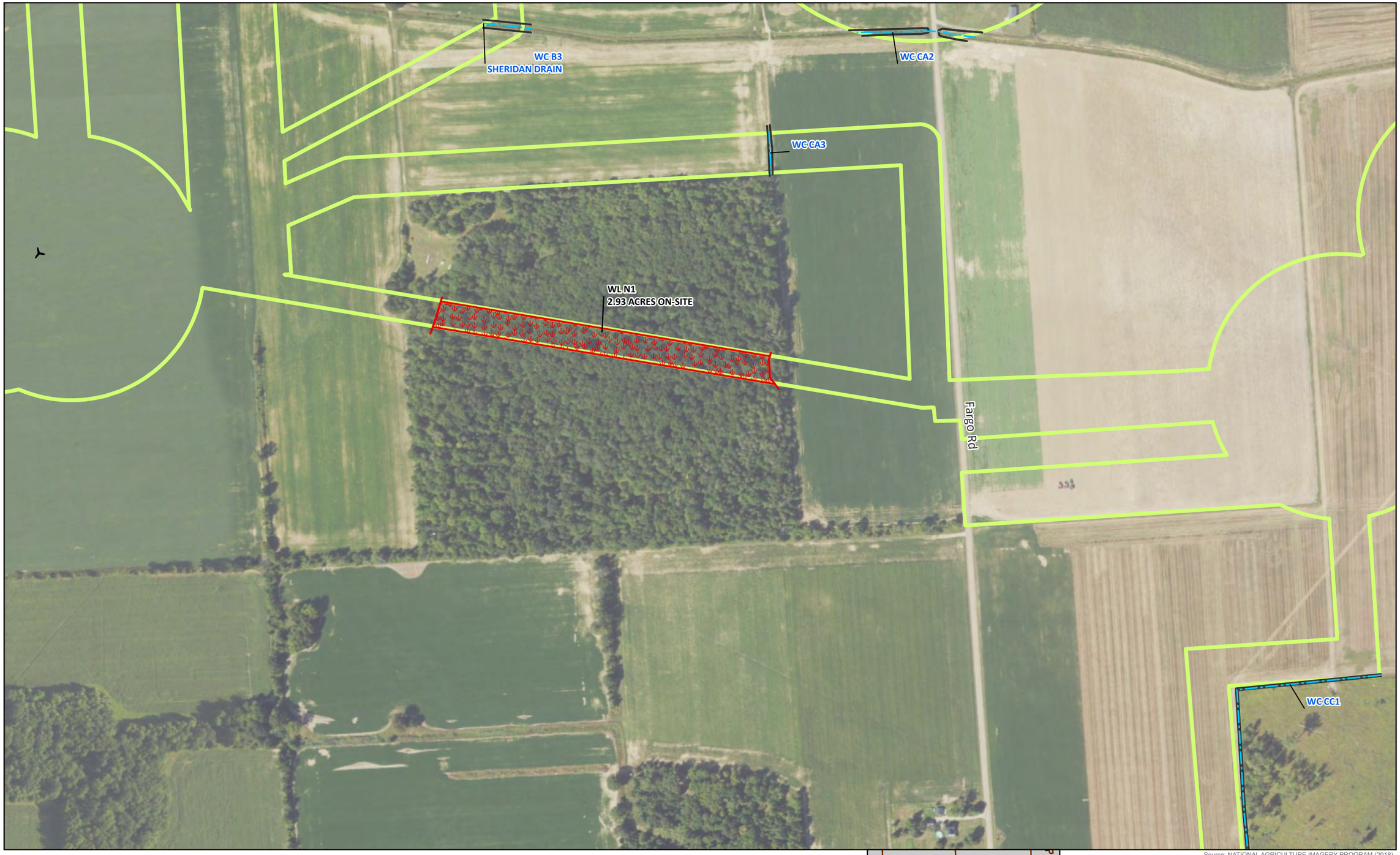
GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 22 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx



LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 23 OF 106

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 24 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 25 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED MET TOWER
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS): 9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36), 9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 26 OF 106

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 27 OF 106

LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED FACILITIES
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 28 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 29 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 30 OF 106

LEGEND

- PROPOSED SUBSTATION
- PROPOSED FACILITIES
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 31 OF 106

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 32 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED FACILITIES
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 33 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 34 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 35 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR.	C.J.	CH.	D.N.
P.M.	JEFF WILLIAMS		
BOOK:	--		
GIS FILE:	--		
JOB:	21003645		
FILE CODE:	--		
SHEET NO:	36 OF 106		

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 37 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

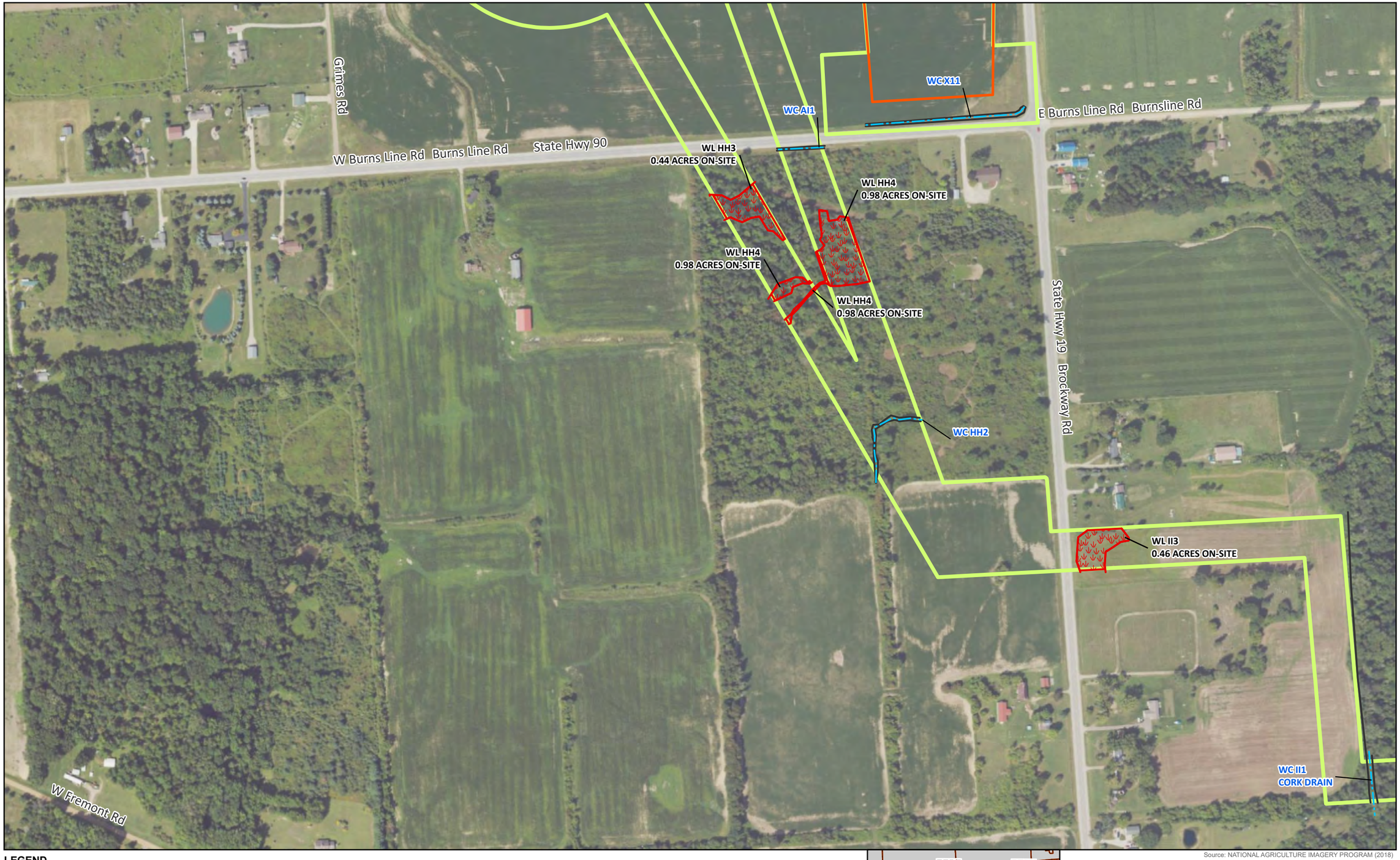
GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 38 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx



LEGEND

- PROPOSED FACILITIES
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 39 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.
P.M. JEFF WILLIAMS
BOOK: --
GIS FILE: --
JOB: 21003645
FILE CODE: --
SHEET NO: 40 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 41 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 42 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 43 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED MET TOWER
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 44 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 45 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 46 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 47 OF 106

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

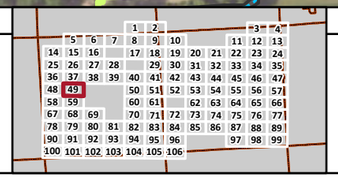
SHEET NO: 48 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 49 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 50 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 51 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 52 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 53 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

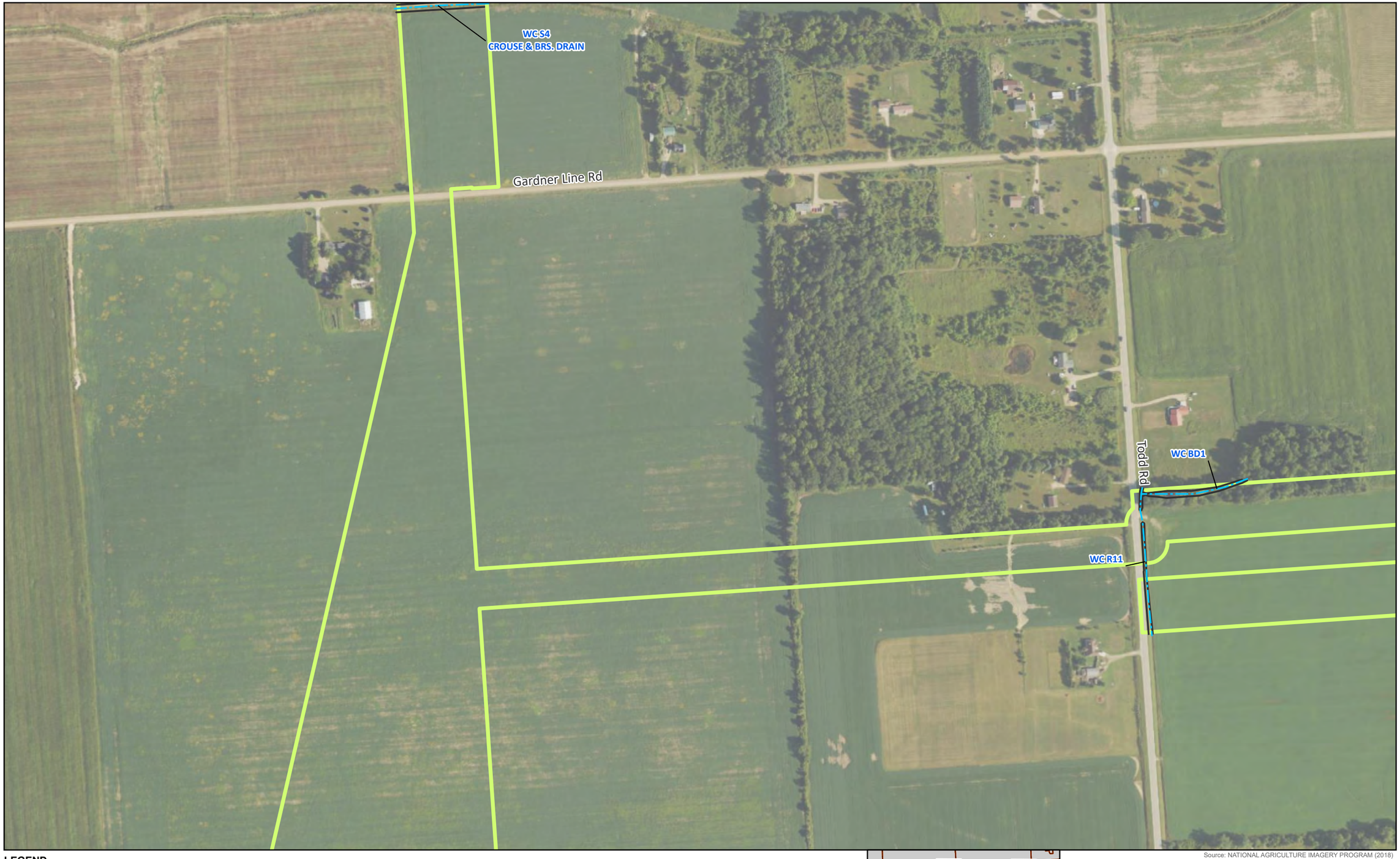
GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 54 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx



LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 55 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 56 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 57 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 58 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

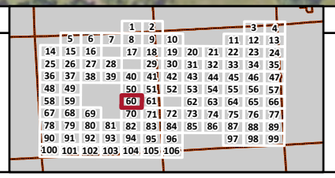
FILE CODE: --

SHEET NO: 59 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 60 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 61 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 62 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 63 OF 106

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 64 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 65 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 66 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 67 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 68 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J.	CH. D.N.
P.M.	JEFF WILLIAMS
BOOK:	--
GIS FILE:	--
JOB:	21003645
FILE CODE:	--
SHEET NO:	69 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 70 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 71 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 72 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED MET TOWER
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

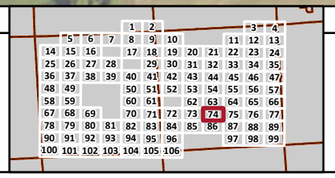
SHEET NO: 73 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR.	C.J.	CH.	D.N.
P.M.	JEFF WILLIAMS		
BOOK:	--		
GIS FILE:	--		
JOB:	21003645		
FILE CODE:	--		
SHEET NO:	74 OF 106		

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 75 OF 106

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 76 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR.	C.J.	CH.	D.N.
P.M.	JEFF WILLIAMS		
BOOK:	--		
GIS FILE:	--		
JOB:	21003645		
FILE CODE:	--		
SHEET NO:	77 OF 106		

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 78 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

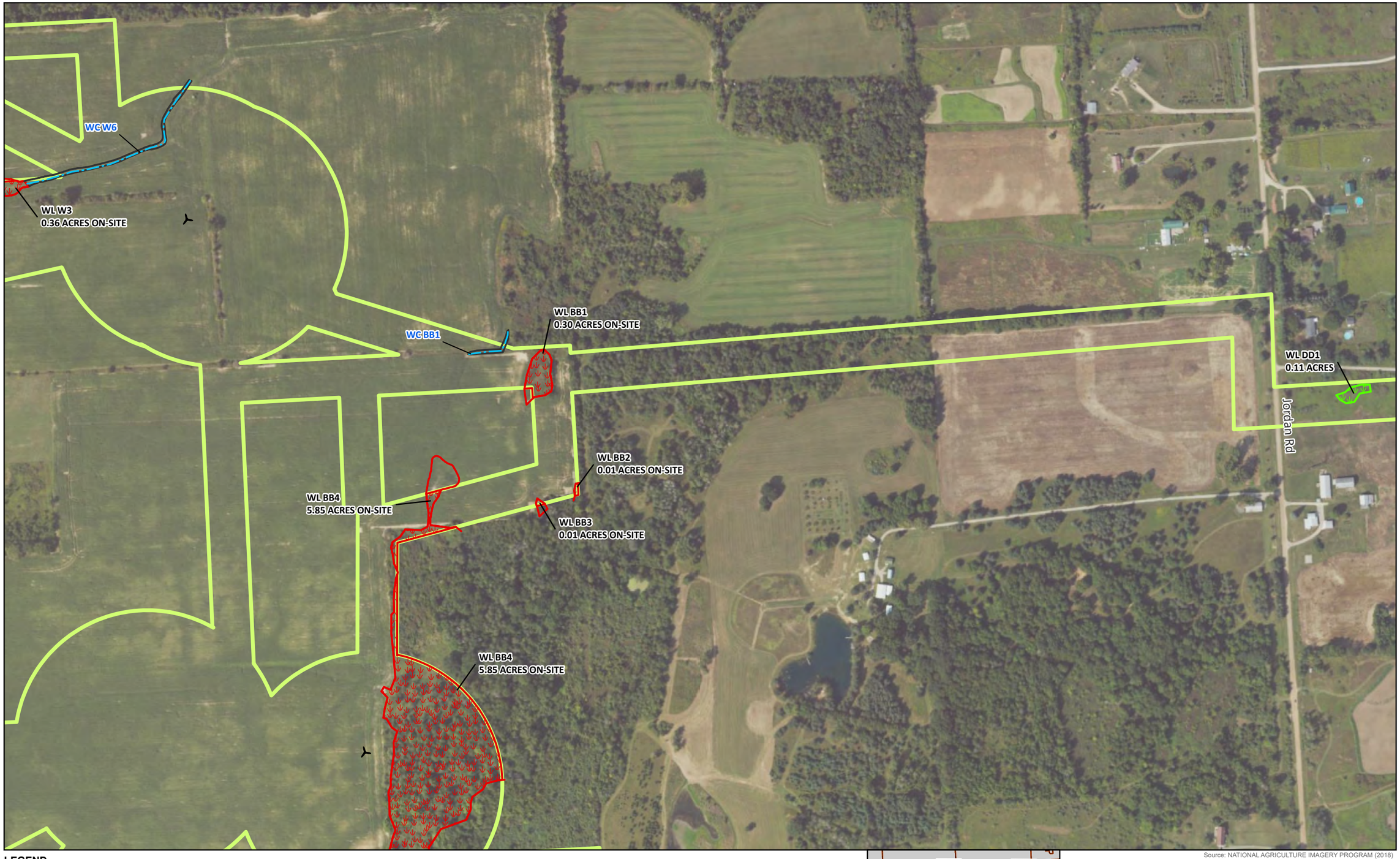
GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 79 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx



LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 80 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 81 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J.	CH. D.N.
P.M.	JEFF WILLIAMS
BOOK:	--
GIS FILE:	--
JOB:	21003645
FILE CODE:	--
SHEET NO:	82 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

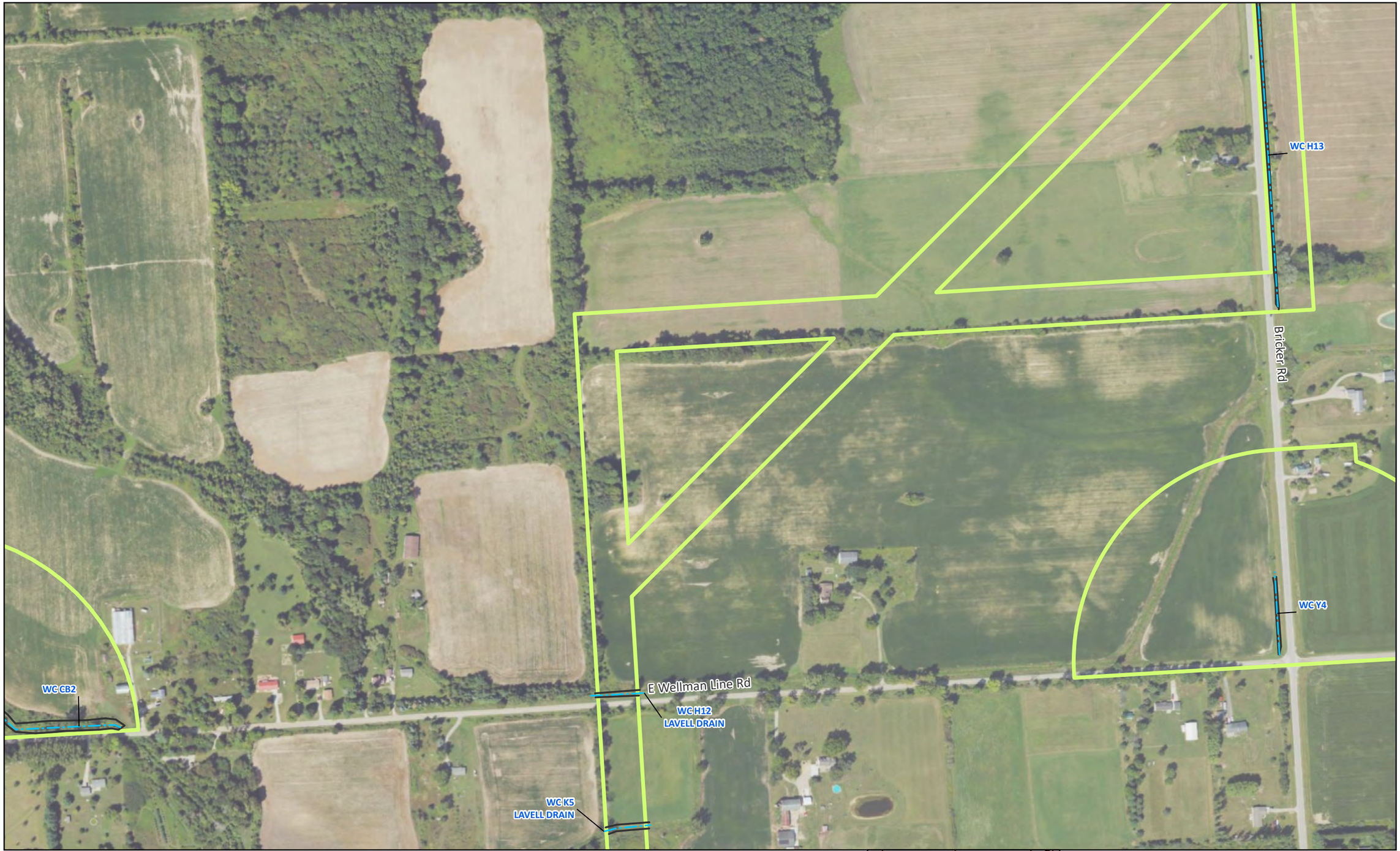
GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 83 OF 106

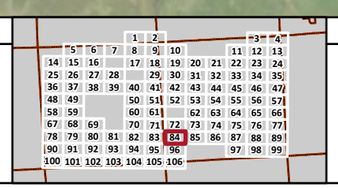
G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx



LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR.	C.J.	CH.	D.N.
P.M.	JEFF WILLIAMS		
BOOK:	--		
GIS FILE:	--		
JOB:	21003645		
FILE CODE:	--		
SHEET NO:	84 OF 106		

LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED MET TOWER
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

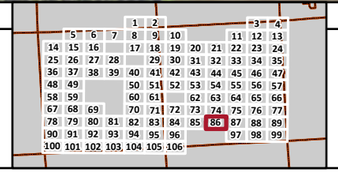
SHEET NO: 85 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

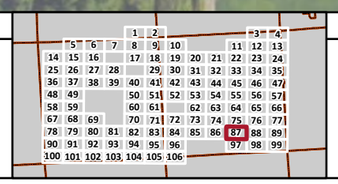
SHEET NO: 86 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 87 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 88 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 89 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 90 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED MET TOWER
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 91 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

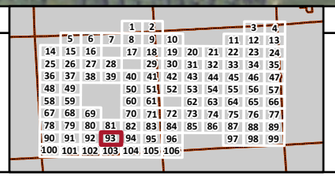
SHEET NO: 92 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

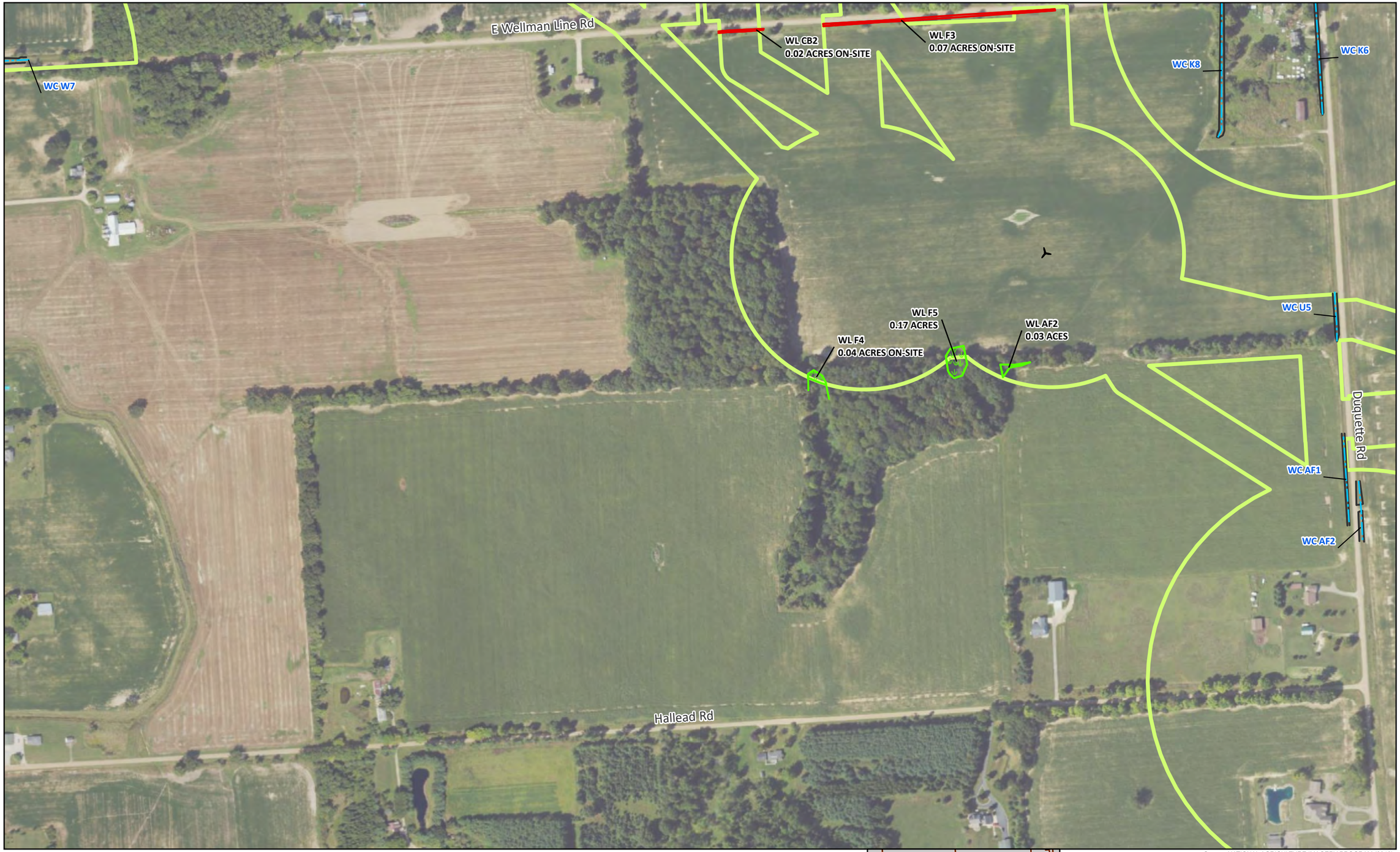
GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 93 OF 106

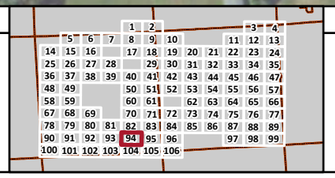
G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx



LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 94 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 95 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

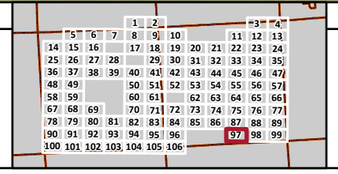
SHEET NO: 96 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 97 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT:
ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 98 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROPOSED MET TOWER
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

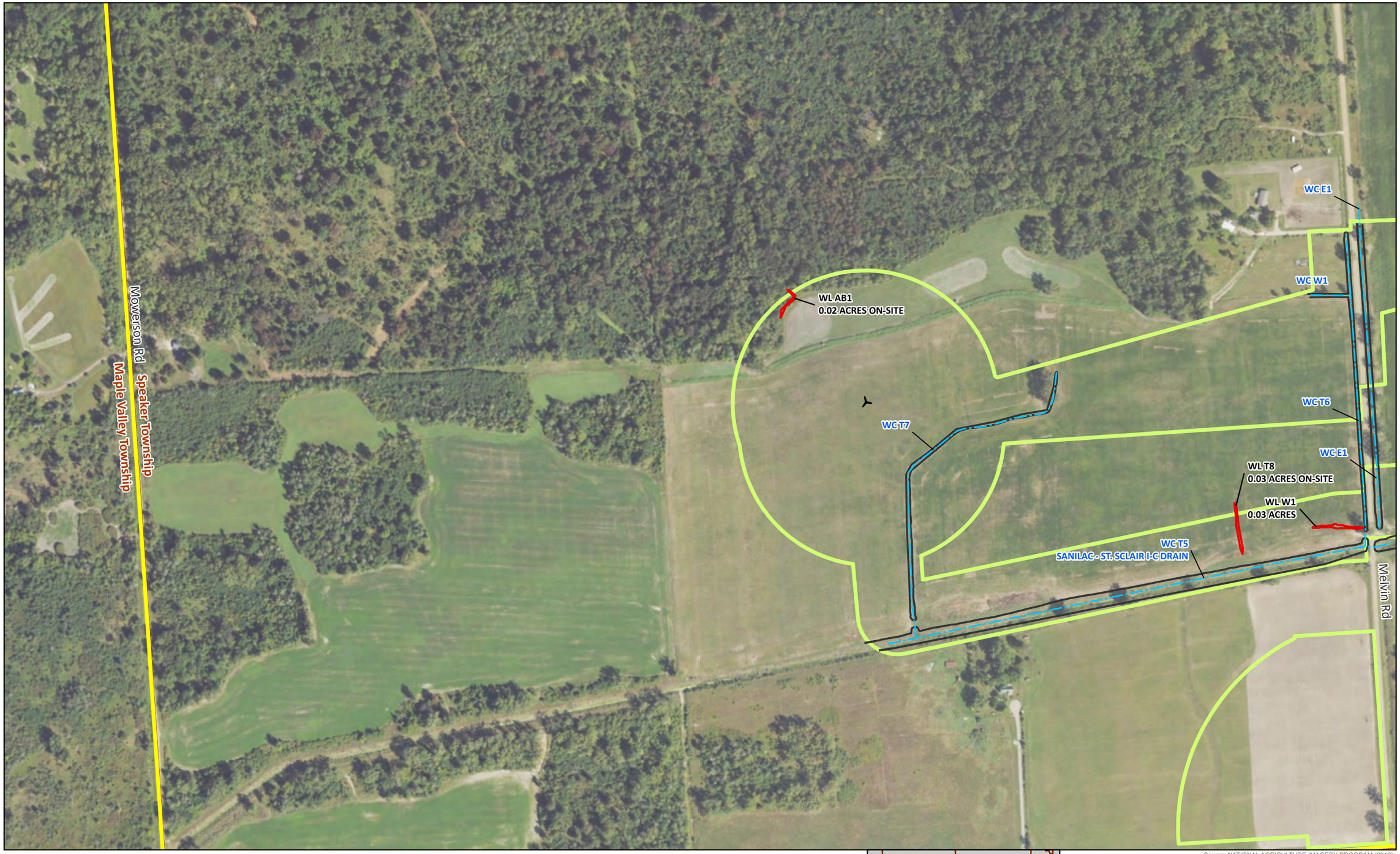
DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR.	C.J.	CH.	D.N.
P.M.	JEFF WILLIAMS		
BOOK:	--		
GIS FILE:	--		
JOB:	21003645		
FILE CODE:	--		
SHEET NO:	99 OF 106		

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx



LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

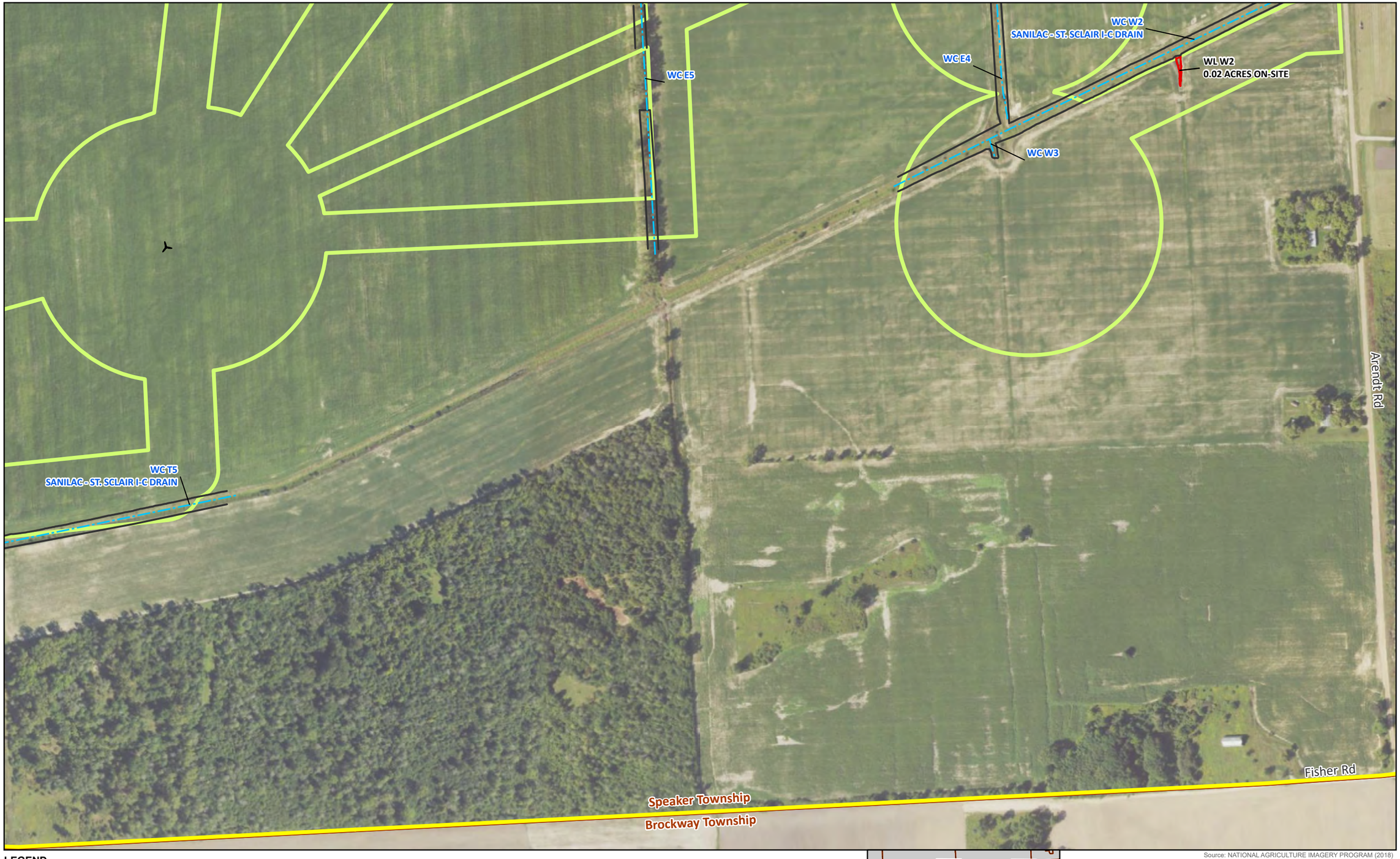
GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 100 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx



LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 101 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 102 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

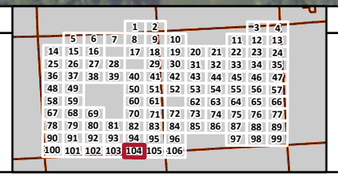
SHEET NO: 103 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 104 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

LEGEND

- PROPOSED TURBINE LAYOUT
- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N

Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

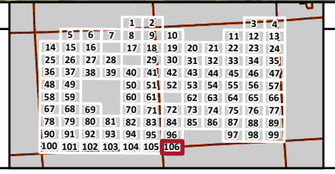
FILE CODE: --

SHEET NO: 105 OF 106

LEGEND

- PROJECT SURVEY CORRIDOR (~5,609 ACRES)
- ENVIRONMENTAL STUDY AREA (~44,523 ACRES)
- Township
- WATERCOURSE (FIELD IDENTIFIED)
- APPROXIMATE TOP OF BANK (FIELD IDENTIFIED)
- WATERBODY (FIELD IDENTIFIED)
- EGLE REGULATED WETLAND (FIELD IDENTIFIED)
- NON-REGULATED WETLAND (FIELD IDENTIFIED)

N



Source: NATIONAL AGRICULTURE IMAGERY PROGRAM (2018)

Note: This illustration is an approximate depiction of the wetlands and watercourses that appear to be located on the subject property as delineated by Atwell on December 6-9 and 13-17, 2021; January 3-7, April 4-8 and 11-14, 2022; and June 5-9, July 10-11, and 17, 2023. The EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the state of Michigan.

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

ATWELL

TOWN/RANGE (SECTIONS):
9N14E (1-2, 4-5, 7-10, 12-15, 17-21, 23-36),
9N15E (1-2, 5-36), 10N14E (35-36)

ELK, FREMONT, AND SPEAKER TOWNSHIP

SANILAC COUNTY, MICHIGAN

CLIENT: ALGONQUIN POWER (RIVERBEND WIND), LLC

FIGURE 6
WETLAND LOCATION MAP

DATE: 8/16/2023

REVISIONS

SCALE: 0 200 Feet

DR. C.J. CH. D.N.

P.M. JEFF WILLIAMS

BOOK: --

GIS FILE: --

JOB: 21003645

FILE CODE: --

SHEET NO: 106 OF 106

G:\Jobs2100\T21003645_Riverbend_SanilacCo_MI\Projects\ProjectTemplate\T21003645_Riverbend_Wetlands.aprx

TABLES

Liberty Power Riverbend Wind Project			
Wetland and Watercourse Summary Table			
Atwell Project No. 21003645			
Feature ID	**Regulatory Status**	**Acres (On-Site)**	**Type**
Wetland A1	EGLE REGULATED	4.30	Forested
Wetland A2	EGLE REGULATED	2.00	Forested
Wetland A6	EGLE REGULATED	0.13	Emergent
Wetland AB1	EGLE REGULATED	4.96	Emergent/Scrub-Shrub
Wetland AC2	EGLE REGULATED	0.07	Emergent
Wetland AC3	NON-REGULATED	0.03	Emergent
Wetland AC4	NON-REGULATED	2.02	Forested
Wetland AC5	EGLE REGULATED	0.01	Emergent
Wetland AD1	EGLE REGULATED	0.01	Emergent
Wetland AD2	EGLE REGULATED	1.45	Emergent/Scrub-Shrub
Wetland AD3	EGLE REGULATED	0.07	Emergent
Wetland AD4	EGLE REGULATED	0.65	Emergent/Scrub-Shrub
Wetland AE1	EGLE REGULATED	0.08	Emergent
Wetland AE2	EGLE REGULATED	0.03	Emergent
Wetland AE3	EGLE REGULATED	0.31	Open Water
Wetland AF1	EGLE REGULATED	0.96	Forested
Wetland AF2	NON-REGULATED	0.03	Emergent
Wetland AF3	EGLE REGULATED	0.23	Emergent/Forested
Wetland AH1	EGLE REGULATED	0.75	Emergent/Scrub-Shrub/Forested
Wetland AH2	EGLE REGULATED	0.04	Emergent/Forested
Wetland AH3	EGLE REGULATED	0.11	Scrub-Shrub
Wetland AH4	EGLE REGULATED	0.16	Scrub-Shrub
Wetland AH5	EGLE REGULATED	0.06	Emergent
Wetland AI1	EGLE REGULATED	3.51	Forested
Wetland AJ1	EGLE REGULATED	0.30	Emergent
Wetland AJ2	NON-REGULATED	0.15	Emergent
Wetland AJ3	EGLE REGULATED	0.63	Forested
Wetland AJ4	EGLE REGULATED	0.58	Emergent
Wetland AK1	EGLE REGULATED	0.03	Emergent
Wetland B1	EGLE REGULATED	5.86	Forested
Wetland B2	NON-REGULATED	1.27	Scrub-Shrub/Forested
Wetland BA1	EGLE REGULATED	0.08	Emergent
Wetland BA2	NON-REGULATED	0.01	Emergent
Wetland BA3	EGLE REGULATED	0.37	Emergent/Scrub-Shrub/Forested
Wetland BB1	EGLE REGULATED	0.30	Open Water/Emergent/Scrub-Shrub
Wetland BB2	EGLE REGULATED	0.01	Emergent/Scrub-Shrub
Wetland BB3	EGLE REGULATED	0.01	Emergent/Scrub-Shrub

Liberty Power Riverbend Wind Project			
Wetland and Watercourse Summary Table			
Atwell Project No. 21003645			
Feature ID	**Regulatory Status**	**Acres (On-Site)**	**Type**
Wetland BB4	EGLE REGULATED	5.85	Emergent/Scrub-Shrub/Forested
Wetland BB5	EGLE REGULATED	0.04	Emergent
Wetland BC1	EGLE REGULATED	0.73	Open Water
Wetland BC2	NON-REGULATED	0.01	Emergent
Wetland BC3	NON-REGULATED	0.14	Forested
Wetland BC4	EGLE REGULATED	0.33	Emergent
Wetland BC5	EGLE REGULATED	0.01	Emergent
Wetland BD1	EGLE REGULATED	0.20	Forested
Wetland BE1	EGLE REGULATED	0.07	Emergent
Wetland BF1	EGLE REGULATED	0.05	Emergent/Scrub-Shrub
Wetland BF2	EGLE REGULATED	0.04	Emergent/Scrub-Shrub
Wetland BF3	EGLE REGULATED	0.07	Emergent/Scrub-Shrub
Wetland BF4	EGLE REGULATED	0.01	Emergent/Scrub-Shrub
Wetland BF5	EGLE REGULATED	1.11	Forested
Wetland BG1	EGLE REGULATED	2.01	Scrub-Shrub/Forested
Wetland C1	EGLE REGULATED	1.64	Forested
Wetland C2	EGLE REGULATED	1.44	Forested
Wetland C3	EGLE REGULATED	0.02	Emergent
Wetland C4	EGLE REGULATED	0.18	Forested
Wetland CA1	EGLE REGULATED	0.28	Forested
Wetland CB1	NON-REGULATED	0.14	Emergent
Wetland CB2	EGLE REGULATED	0.02	Emergent
Wetland CC1	EGLE REGULATED	0.47	Forested
Wetland CD1	NON-REGULATED	0.10	Emergent
Wetland CD2	NON-REGULATED	0.08	Scrub-Shrub
Wetland CE1	NON-REGULATED	0.02	Emergent
Wetland CG1	NON-REGULATED	0.04	Emergent/Scrub-Shrub
Wetland CG2	NON-REGULATED	0.20	Scrub-Shrub
Wetland CJ1	NON-REGULATED	0.02	Emergent
Wetland DA1	EGLE REGULATED	1.34	Scrub-Shrub/Forested
Wetland DA2	EGLE REGULATED	0.08	Open Water
Wetland DA3	EGLE REGULATED	3.62	Forested
Wetland DB1	EGLE REGULATED	0.05	Forested
Wetland DB2	NON-REGULATED	0.24	Emergent
Wetland DB3	EGLE REGULATED	0.04	Emergent
Wetland DB4	EGLE REGULATED	1.04	Forested
Wetland DC1	EGLE REGULATED	0.34	Emergent/Forested
Wetland DC2	NON-REGULATED	0.09	Forested

Liberty Power Riverbend Wind Project			
Wetland and Watercourse Summary Table			
Atwell Project No. 21003645			
Feature ID	**Regulatory Status**	**Acres (On-Site)**	**Type**
Wetland DC3	EGLE REGULATED	0.19	Open Water
Wetland DD1	NON-REGULATED	0.11	Emergent
Wetland DD2	EGLE REGULATED	0.07	Emergent
Wetland DD3	EGLE REGULATED	0.51	Scrub-Shrub
Wetland DD4	NON-REGULATED	0.02	Emergent
Wetland DD5	NON-REGULATED	0.09	Emergent
Wetland DD6	NON-REGULATED	0.01	Scrub-Shrub
Wetland DD7	NON-REGULATED	0.18	Scrub-Shrub
Wetland DD8	NON-REGULATED	0.16	Open Water
Wetland DD9	NON-REGULATED	0.19	Emergent
Wetland DE1	EGLE REGULATED	0.12	Forested
Wetland DF1	EGLE REGULATED	1.05	Emergent/Scrub-Shrub/Forested
Wetland DF2	EGLE REGULATED	0.45	Forested
Wetland DH1	EGLE REGULATED	0.46	Forested
Wetland EE1	EGLE REGULATED	0.32	Scrub-Shrub
Wetland EE2	EGLE REGULATED	0.22	Emergent
Wetland F1	EGLE REGULATED	0.30	Emergent/Scrub-Shrub/Forested
Wetland F2	EGLE REGULATED	1.05	Emergent/Forested
Wetland F3	EGLE REGULATED	0.07	Emergent
Wetland F4	NON-REGULATED	0.04	Emergent
Wetland F5	NON-REGULATED	0.17	Emergent/Scrub-Shrub
Wetland FF1	EGLE REGULATED	1.71	Forested
Wetland FF2	EGLE REGULATED	0.05	Forested
Wetland FF3	EGLE REGULATED	0.20	Open Water
Wetland GG1	EGLE REGULATED	1.21	Forested
Wetland H1	EGLE REGULATED	1.80	Emergent/Forested
Wetland HH1	EGLE REGULATED	0.05	Forested
Wetland HH2	EGLE REGULATED	0.02	Scrub-Shrub
Wetland HH3	EGLE REGULATED	0.44	Forested
Wetland HH4	EGLE REGULATED	0.98	Scrub-Shrub
Wetland II1	NON-REGULATED	0.01	Open Water
Wetland II2	EGLE REGULATED	1.19	Scrub-Shrub/Forested
Wetland II3	EGLE REGULATED	0.46	Emergent
Wetland II4	EGLE REGULATED	5.88	Forested
Wetland J1	NON-REGULATED	0.06	Forested
Wetland J2	EGLE REGULATED	3.66	Forested
Wetland J3	EGLE REGULATED	2.15	Forested
Wetland K1	EGLE REGULATED	1.59	Forested

Liberty Power Riverbend Wind Project			
Wetland and Watercourse Summary Table			
Atwell Project No. 21003645			
Feature ID	**Regulatory Status**	**Acres (On-Site)**	**Type**
Wetland L1	EGLE REGULATED	1.83	Emergent/Forested
Wetland M1	EGLE REGULATED	2.00	Emergent/Scrub-Shrub
Wetland M2	EGLE REGULATED	1.63	Forested
Wetland N1	EGLE REGULATED	2.93	Forested
Wetland P1	EGLE REGULATED	0.18	Emergent/Scrub-Shrub
Wetland P2	EGLE REGULATED	0.16	Scrub-Shrub
Wetland P3	EGLE REGULATED	1.18	Forested/Emergent
Wetland R2	EGLE REGULATED	0.16	Forested
Wetland S1	EGLE REGULATED	3.52	Forested
Wetland T1	EGLE REGULATED	0.02	Emergent
Wetland T2	EGLE REGULATED	0.20	Emergent
Wetland T3	EGLE REGULATED	0.09	Emergent
Wetland T4	EGLE REGULATED	0.29	Emergent/Scrub-Shrub
Wetland T5	EGLE REGULATED	0.21	Emergent
Wetland T6	EGLE REGULATED	0.11	Scrub-Shrub/Emergent
Wetland T7	NON-REGULATED	0.01	Scrub-Shrub
Wetland T8	EGLE REGULATED	0.03	Emergent
Wetland U1	EGLE REGULATED	1.35	Forested
Wetland W1	EGLE REGULATED	0.03	Emergent
Wetland W2	EGLE REGULATED	0.02	Emergent
Wetland W3	EGLE REGULATED	0.36	Emergent
Wetland Y1	EGLE REGULATED	3.63	Forested
Watercourse A1 (Turner Drain)	EGLE REGULATED	--	Intermittent
Watercourse A2	EGLE REGULATED	--	Perennial
Watercourse A3	EGLE REGULATED	--	Intermittent
Watercourse A4	EGLE REGULATED	--	Intermittent
Watercourse A5	EGLE REGULATED	--	Intermittent
Watercourse AA1	EGLE REGULATED	--	Intermittent
Watercourse AA2	EGLE REGULATED	--	Perennial
Watercourse AA3	EGLE REGULATED	--	Perennial
Watercourse AA4	EGLE REGULATED	--	Intermittent
Watercourse AB1	EGLE REGULATED	--	Intermittent
Watercourse AC1 (East Branch Speaker and Maple Valley Drain)	EGLE REGULATED	--	Perennial
Watercourse AD1	EGLE REGULATED	--	Intermittent
Watercourse AD2	EGLE REGULATED	--	Intermittent
Watercourse AD3	EGLE REGULATED	--	Intermittent
Watercourse AD4	EGLE REGULATED	--	Ephemeral
Watercourse AD5	EGLE REGULATED	--	Intermittent

Liberty Power Riverbend Wind Project			
Wetland and Watercourse Summary Table			
Atwell Project No. 21003645			
Feature ID	**Regulatory Status**	**Acres (On-Site)**	**Type**
Watercourse AD6	EGLE REGULATED	--	Intermittent
Watercourse AD7	EGLE REGULATED	--	Intermittent
Watercourse AE1 (Macklem Drain)	EGLE REGULATED	--	Intermittent
Watercourse AE2 (Spring Creek Drain)	EGLE REGULATED	--	Intermittent
Watercourse AF1	EGLE REGULATED	--	Intermittent
Watercourse AF2	EGLE REGULATED	--	Intermittent
Watercourse AH1	EGLE REGULATED	--	Intermittent
Watercourse AH2	EGLE REGULATED	--	Intermittent
Watercourse AH3	EGLE REGULATED	--	Intermittent
Watercourse AH4	EGLE REGULATED	--	Intermittent
Watercourse AH6	EGLE REGULATED	--	Ephemeral
Watercourse AI1	EGLE REGULATED	--	Ephemeral
Watercourse AI3 (Potts Drain)	EGLE REGULATED	--	Intermittent
Watercourse AI4 (Potts Drain)	EGLE REGULATED	--	Intermittent
Watercourse AJ1	EGLE REGULATED	--	Intermittent
Watercourse AJ2	EGLE REGULATED	--	Intermittent
Watercourse AJ3	EGLE REGULATED	--	Intermittent
Watercourse AJ4	EGLE REGULATED	--	Intermittent
Watercourse AJ5	EGLE REGULATED	--	Intermittent
Watercourse AK1	EGLE REGULATED	--	Intermittent
Watercourse B1	EGLE REGULATED	--	Intermittent
Watercourse B2	EGLE REGULATED	--	Intermittent
Watercourse B3	EGLE REGULATED	--	Intermittent
Watercourse B4	EGLE REGULATED	--	Intermittent
Watercourse B5	EGLE REGULATED	--	Perennial
Watercourse B6 (Lawson Drain)	EGLE REGULATED	--	Perennial
Watercourse B7	EGLE REGULATED	--	Perennial
Watercourse B8	EGLE REGULATED	--	Intermittent
Watercourse BA1	EGLE REGULATED	--	Intermittent
Watercourse BA2	EGLE REGULATED	--	Intermittent
Watercourse BA3	EGLE REGULATED	--	Intermittent
Watercourse BA5 (Black Creek)	EGLE REGULATED	--	Perennial
Watercourse BB1	EGLE REGULATED	--	Intermittent
Watercourse BB2	EGLE REGULATED	--	Intermittent
Watercourse BB3 (Downey Drain)	EGLE REGULATED	--	Intermittent
Watercourse BB4	EGLE REGULATED	--	Intermittent
Watercourse BB5 (Seymore Creek)	EGLE REGULATED	--	Perennial
Watercourse BB6	EGLE REGULATED	--	Intermittent

Liberty Power Riverbend Wind Project			
Wetland and Watercourse Summary Table			
Atwell Project No. 21003645			
Feature ID	**Regulatory Status**	**Acres (On-Site)**	**Type**
Watercourse BC1	EGLE REGULATED	--	Intermittent
Watercourse BC2	EGLE REGULATED	--	Ephemeral
Watercourse BC3	EGLE REGULATED	--	Ephemeral
Watercourse BC4	EGLE REGULATED	--	Intermittent
Watercourse BD1	EGLE REGULATED	--	Intermittent
Watercourse BD2	EGLE REGULATED	--	Intermittent
Watercourse BD3 (Seymore Creek)	EGLE REGULATED	--	Perennial
Watercourse BD4	EGLE REGULATED	--	Ephemeral
Watercourse BE1	EGLE REGULATED	--	Ephemeral
Watercourse BE2	EGLE REGULATED	--	Perennial
Watercourse BF1 (Black Creek)	EGLE REGULATED	--	Intermittent
Watercourse BG1	EGLE REGULATED	--	Intermittent
Watercourse BG2 (Black Creek)	EGLE REGULATED	--	Perennial
Watercourse BG3	EGLE REGULATED	--	Intermittent
Watercourse BG4	EGLE REGULATED	--	Intermittent
Watercourse BG6	EGLE REGULATED	--	Intermittent
Watercourse BH1	EGLE REGULATED	--	Intermittent
Watercourse C1	EGLE REGULATED	--	Perennial
Watercourse C2	EGLE REGULATED	--	Intermittent
Watercourse C3	EGLE REGULATED	--	Perennial
Watercourse C4	EGLE REGULATED	--	Intermittent
Watercourse C5 (Lavell Drain)	EGLE REGULATED	--	Perennial
Watercourse C6	EGLE REGULATED	--	Perennial
Watercourse CA1	EGLE REGULATED	--	Intermittent
Watercourse CA2	EGLE REGULATED	--	Perennial
Watercourse CA3	EGLE REGULATED	--	Intermittent
Watercourse CA4	EGLE REGULATED	--	Intermittent
Watercourse CA5	EGLE REGULATED	--	Perennial
Watercourse CA6	EGLE REGULATED	--	Intermittent
Watercourse CA7	EGLE REGULATED	--	Ephemeral
Watercourse CB1	EGLE REGULATED	--	Intermittent
Watercourse CB2	EGLE REGULATED	--	Perennial
Watercourse CB3	EGLE REGULATED	--	Ephemeral
Watercourse CC1	EGLE REGULATED	--	Perennial
Watercourse CC2	EGLE REGULATED	--	Perennial
Watercourse CD1	EGLE REGULATED	--	Intermittent
Watercourse CD2	EGLE REGULATED	--	Perennial
Watercourse CE2	EGLE REGULATED	--	Perennial

Liberty Power Riverbend Wind Project			
Wetland and Watercourse Summary Table			
Atwell Project No. 21003645			
Feature ID	**Regulatory Status**	**Acres (On-Site)**	**Type**
Watercourse CE3	EGLE REGULATED	--	Intermittent
Watercourse CE4	EGLE REGULATED	--	Intermittent
Watercourse CF1	EGLE REGULATED	--	Intermittent
Watercourse CF3	EGLE REGULATED	--	Intermittent
Watercourse CG1	EGLE REGULATED	--	Perennial
Watercourse CI1	EGLE REGULATED	--	Perennial
Watercourse CI2	EGLE REGULATED	--	Ephemeral
Watercourse CI3	EGLE REGULATED	--	Ephemeral
Watercourse D1	EGLE REGULATED	--	Perennial
Watercourse D2	EGLE REGULATED	--	Perennial
Watercourse DA1 (Bradley Creek)	EGLE REGULATED	--	Perennial
Watercourse DB1 (Beemer Drain)	EGLE REGULATED	--	Intermittent
Watercourse DB2 (Beemer Drain)	EGLE REGULATED	--	Intermittent
Watercourse DB4	EGLE REGULATED	--	Ephemeral
Watercourse DB5	EGLE REGULATED	--	Intermittent
Watercourse DC1	EGLE REGULATED	--	Ephemeral
Watercourse DC2	EGLE REGULATED	--	Ephemeral
Watercourse DC4	EGLE REGULATED	--	Ephemeral
Watercourse DC5	EGLE REGULATED	--	Perennial
Watercourse DD1	EGLE REGULATED	--	Ephemeral
Watercourse DD3 (Sloan Drain)	EGLE REGULATED	--	Intermittent
Watercourse DD4	EGLE REGULATED	--	Intermittent
Watercourse DE1	EGLE REGULATED	--	Intermittent
Watercourse DH1	EGLE REGULATED	--	Intermittent
Watercourse DH2	EGLE REGULATED	--	Intermittent
Watercourse E1	EGLE REGULATED	--	Perennial
Watercourse E10	EGLE REGULATED	--	Intermittent
Watercourse E12	EGLE REGULATED	--	Perennial
Watercourse E2 (Downey Drain)	EGLE REGULATED	--	Perennial
Watercourse E3 (Downey Drain)	EGLE REGULATED	--	Perennial
Watercourse E4	EGLE REGULATED	--	Perennial
Watercourse E5	EGLE REGULATED	--	Intermittent
Watercourse E6	EGLE REGULATED	--	Perennial
Watercourse E7	EGLE REGULATED	--	Intermittent
Watercourse E8	EGLE REGULATED	--	Intermittent
Watercourse E9	EGLE REGULATED	--	Intermittent
Watercourse EE1	EGLE REGULATED	--	Intermittent
Watercourse EE2	EGLE REGULATED	--	Intermittent

Liberty Power Riverbend Wind Project			
Wetland and Watercourse Summary Table			
Atwell Project No. 21003645			
Feature ID	**Regulatory Status**	**Acres (On-Site)**	**Type**
Watercourse EE3	EGLE REGULATED	--	Intermittent
Watercourse EE4	EGLE REGULATED	--	Perennial
Watercourse EE5	EGLE REGULATED	--	Intermittent
Watercourse EE6	EGLE REGULATED	--	Perennial
Watercourse EE7	EGLE REGULATED	--	Intermittent
Watercourse F1	EGLE REGULATED	--	Perennial
Watercourse F2 (Potts Drain)	EGLE REGULATED	--	Perennial
Watercourse FF1	EGLE REGULATED	--	Intermittent
Watercourse FF2	EGLE REGULATED	--	Intermittent
Watercourse FF3	EGLE REGULATED	--	Perennial
Watercourse FF4	EGLE REGULATED	--	Perennial
Watercourse FF5	EGLE REGULATED	--	Intermittent
Watercourse FF6	EGLE REGULATED	--	Intermittent
Watercourse FF7	EGLE REGULATED	--	Intermittent
Watercourse FF8	EGLE REGULATED	--	Intermittent
Watercourse G1	EGLE REGULATED	--	Perennial
Watercourse G2	EGLE REGULATED	--	Perennial
Watercourse G3	EGLE REGULATED	--	Perennial
Watercourse G6	EGLE REGULATED	--	Perennial
Watercourse GG1	EGLE REGULATED	--	Perennial
Watercourse GG2	EGLE REGULATED	--	Intermittent
Watercourse H1	EGLE REGULATED	--	Intermittent
Watercourse H12	EGLE REGULATED	--	Perennial
Watercourse H13	EGLE REGULATED	--	Intermittent
Watercourse H16 (Black Creek)	EGLE REGULATED	--	Perennial
Watercourse H3 (East Branch Speaker & Maple Valley Drain)	EGLE REGULATED	--	Perennial
Watercourse H4	EGLE REGULATED	--	Perennial
Watercourse H6	EGLE REGULATED	--	Perennial
Watercourse H8	EGLE REGULATED	--	Intermittent
Watercourse HH1 (Sanilac and St. Clair Drain)	EGLE REGULATED	--	Perennial
Watercourse HH2	EGLE REGULATED	--	Intermittent
Watercourse I1	EGLE REGULATED	--	Perennial
Watercourse I3	EGLE REGULATED	--	Perennial
Watercourse II1	EGLE REGULATED	--	Perennial
Watercourse II3 (Cline Drain)	EGLE REGULATED	--	Perennial
Watercourse J1	EGLE REGULATED	--	Ephemeral
Watercourse J2	EGLE REGULATED	--	Intermittent
Watercourse J3	EGLE REGULATED	--	Intermittent

Liberty Power Riverbend Wind Project			
Wetland and Watercourse Summary Table			
Atwell Project No. 21003645			
Feature ID	**Regulatory Status**	**Acres (On-Site)**	**Type**
Watercourse J4	EGLE REGULATED	--	Intermittent
Watercourse K10	EGLE REGULATED	--	Intermittent
Watercourse K2	EGLE REGULATED	--	Ephemeral
Watercourse K3	EGLE REGULATED	--	Perennial
Watercourse K5	EGLE REGULATED	--	Ephemeral
Watercourse K6	EGLE REGULATED	--	Perennial
Watercourse K7	EGLE REGULATED	--	Ephemeral
Watercourse K8	EGLE REGULATED	--	Intermittent
Watercourse K9	EGLE REGULATED	--	Intermittent
Watercourse L10	EGLE REGULATED	--	Intermittent
Watercourse L11	EGLE REGULATED	--	Perennial
Watercourse L12	EGLE REGULATED	--	Intermittent
Watercourse L2	EGLE REGULATED	--	Ephemeral
Watercourse L3	EGLE REGULATED	--	Ephemeral
Watercourse L4	EGLE REGULATED	--	Intermittent
Watercourse L5	EGLE REGULATED	--	Intermittent
Watercourse L6	EGLE REGULATED	--	Perennial
Watercourse L7	EGLE REGULATED	--	Ephemeral
Watercourse L8	EGLE REGULATED	--	Intermittent
Watercourse L9	EGLE REGULATED	--	Intermittent
Watercourse M1	EGLE REGULATED	--	Intermittent
Watercourse M10	EGLE REGULATED	--	Ephemeral
Watercourse M2	EGLE REGULATED	--	Intermittent
Watercourse M3	EGLE REGULATED	--	Perennial
Watercourse M4	EGLE REGULATED	--	Intermittent
Watercourse M5	EGLE REGULATED	--	Intermittent
Watercourse M6	EGLE REGULATED	--	Intermittent
Watercourse M7	EGLE REGULATED	--	Perennial
Watercourse M8	EGLE REGULATED	--	Perennial
Watercourse M9	EGLE REGULATED	--	Intermittent
Watercourse N1	EGLE REGULATED	--	Intermittent
Watercourse N2	EGLE REGULATED	--	Intermittent
Watercourse N3	EGLE REGULATED	--	Intermittent
Watercourse O1	EGLE REGULATED	--	Intermittent
Watercourse O2	EGLE REGULATED	--	Intermittent
Watercourse O3	EGLE REGULATED	--	Perennial
Watercourse O4	EGLE REGULATED	--	Intermittent
Watercourse O5	EGLE REGULATED	--	Intermittent

Liberty Power Riverbend Wind Project			
Wetland and Watercourse Summary Table			
Atwell Project No. 21003645			
Feature ID	**Regulatory Status**	**Acres (On-Site)**	**Type**
Watercourse O6	EGLE REGULATED	--	Perennial
Watercourse O7	EGLE REGULATED	--	Intermittent
Watercourse O8 (Sheridan Drain)	EGLE REGULATED	--	Intermittent
Watercourse Q1	EGLE REGULATED	--	Intermittent
Watercourse Q2 (Downey Drain)	EGLE REGULATED	--	Intermittent
Watercourse R1 (Black Creek)	EGLE REGULATED	--	Perennial
Watercourse R10 (Black Creek)	EGLE REGULATED	--	Perennial
Watercourse R11	EGLE REGULATED	--	Intermittent
Watercourse R2 (Willey Drain)	EGLE REGULATED	--	Perennial
Watercourse R3	EGLE REGULATED	--	Intermittent
Watercourse R4	EGLE REGULATED	--	Intermittent
Watercourse R5	EGLE REGULATED	--	Intermittent
Watercourse R6	EGLE REGULATED	--	Perennial
Watercourse R7	EGLE REGULATED	--	Intermittent
Watercourse R8	EGLE REGULATED	--	Intermittent
Watercourse R9	EGLE REGULATED	--	Intermittent
Watercourse S1 (Putney Drain)	EGLE REGULATED	--	Perennial
Watercourse S2	EGLE REGULATED	--	Perennial
Watercourse S3	EGLE REGULATED	--	Intermittent
Watercourse S4	EGLE REGULATED	--	Perennial
Watercourse S5	EGLE REGULATED	--	Intermittent
Watercourse S6	EGLE REGULATED	--	Perennial
Watercourse S7	EGLE REGULATED	--	Perennial
Watercourse S8	EGLE REGULATED	--	Perennial
Watercourse T1	EGLE REGULATED	--	Intermittent
Watercourse T2	EGLE REGULATED	--	Intermittent
Watercourse T3	EGLE REGULATED	--	Intermittent
Watercourse T4	EGLE REGULATED	--	Intermittent
Watercourse T5	EGLE REGULATED	--	Perennial
Watercourse T6 (Sanilac and St. Clair Drain)	EGLE REGULATED	--	Perennial
Watercourse T7	EGLE REGULATED	--	Intermittent
Watercourse U1	EGLE REGULATED	--	Intermittent
Watercourse U2	EGLE REGULATED	--	Intermittent
Watercourse U3	EGLE REGULATED	--	Intermittent
Watercourse U4	EGLE REGULATED	--	Intermittent
Watercourse U5	EGLE REGULATED	--	Intermittent
Watercourse V1	EGLE REGULATED	--	Perennial
Watercourse W1	EGLE REGULATED	--	Intermittent

Liberty Power Riverbend Wind Project			
Wetland and Watercourse Summary Table			
Atwell Project No. 21003645			
Feature ID	**Regulatory Status**	**Acres (On-Site)**	**Type**
Watercourse W2	EGLE REGULATED	--	Perennial
Watercourse W3	EGLE REGULATED	--	Ephemeral
Watercourse W4	EGLE REGULATED	--	Intermittent
Watercourse W5	EGLE REGULATED	--	Intermittent
Watercourse W6	EGLE REGULATED	--	Intermittent
Watercourse W7	EGLE REGULATED	--	Intermittent
Watercourse W8	EGLE REGULATED	--	Intermittent
Watercourse W9	EGLE REGULATED	--	Intermittent
Watercourse X1	EGLE REGULATED	--	Intermittent
Watercourse X10	EGLE REGULATED	--	Intermittent
Watercourse X11	EGLE REGULATED	--	Intermittent
Watercourse X2	EGLE REGULATED	--	Perennial
Watercourse X3	EGLE REGULATED	--	Intermittent
Watercourse X4	EGLE REGULATED	--	Intermittent
Watercourse X5	EGLE REGULATED	--	Intermittent
Watercourse X6	EGLE REGULATED	--	Intermittent
Watercourse X7	EGLE REGULATED	--	Perennial
Watercourse X8	EGLE REGULATED	--	Intermittent
Watercourse X9	EGLE REGULATED	--	Intermittent
Watercourse Y1	EGLE REGULATED	--	Intermittent
Watercourse Y2	EGLE REGULATED	--	Perennial
Watercourse Y3	EGLE REGULATED	--	Intermittent
Watercourse Y4	EGLE REGULATED	--	Intermittent
Watercourse Y5	EGLE REGULATED	--	Intermittent
Watercourse Y6	EGLE REGULATED	--	Perennial
Watercourse Y7	EGLE REGULATED	--	Intermittent
Watercourse Y8	EGLE REGULATED	--	Intermittent
Watercourse Y9	EGLE REGULATED	--	Ephemeral
Watercourse Z1	EGLE REGULATED	--	Intermittent

APPENDICES

APPENDIX A

PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Riverbend Wind Energy Project

Sanilac County, MI

Photo 1. A northeast-facing view of a typical agricultural field within the Environmental Survey Area.

Photo 2. A north-facing view of a typical upland woodlot within the Environmental Survey Area.

Photo 3. A west-facing view of a typical upland pasture area within the Environmental Survey Area.

Photo 4. A south-facing view of a residential building with maintained lawn within the Environmental Survey Area.

Photo 5. An east-facing view of Wetland DD5, a typical palustrine emergent (PEM) wetland in the Environmental Survey Area.

Photo 6. A north-facing view of Wetland DD3, a palustrine scrub-shrub (PSS) wetland found within the Environmental Survey Area.

Photo 7. A south-facing view of Wetland II4, a palustrine forested (PFO) wetland found within the Environmental Survey Area.

Photo 8. A west-facing view of Wetland P3, a PEM/PFO wetland found within the Environmental Survey Area.

Photo 9. A north-facing view of Wetland T4, a PEM/PSS wetland found within the Environmental Survey Area.

Photo 10. An east-facing view of Wetland II2, a PSS/PFO wetland found within the Environmental Survey Area.

Photo 11. An east-facing view of Wetland BB4, a PEM/PSS/PFO wetland found within the Environmental Survey Area.

Photo 12. A north-facing view of Wetland FF3, an open water (OW) wetland found within the Environmental Survey Area.

Photo 13. A west-facing view of Wetland BB1, a PEM/PSS/OW wetland found within the Environmental Survey Area.

Photo 14. A west-facing view of a waterbody found within the Environmental Survey Area.

Photo 15. A southwest-facing view of Watercourse R10, Jackson Creek, a typical perennial watercourse found within the Environmental Survey Area.

Photo 16. A south-facing view of Watercourse T6, another typical perennial watercourse found within the Environmental Survey Area.

Photo 17. An east-facing view of Watercourse B8, a typical intermittent watercourse found within the Environmental Survey Area.

Photo 18. A west-facing view of Watercourse E5, another typical intermittent watercourse found within the Environmental Survey Area.

Photo 19. A north-facing view of Watercourse W3, a typical ephemeral watercourse found within the Environmental Survey Area.

APPENDIX B

WETLAND DATA FORMS

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Riverbend Wind City/County: Sanilac Sampling Date: 2021-12-06

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL A1

Investigator(s): David Nigro, Carl LaRiccia, Chris Kunkle Section, Township, Range: sec 01 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.240799 Long: -82.657782 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: PFO

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PFO wetland mosaic

HYDROLOGY

Wetland Hydrology Indicators:

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

___ Surface Water (A1)	✓ Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Moss Trim Lines (B16)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Dry-Season Water Table (C2)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Crayfish Burrows (C8)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Saturation Visible on Aerial Imagery (C9)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Stunted or Stressed Plants (D1)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	✓ Geomorphic Position (D2)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Shallow Aquitard (D3)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	___ Microtopographic Relief (D4)
___ Sparsely Vegetated Concave Surface (B8)		✓ FAC-Neutral Test (D5)

Secondary Indicators (minimum of two required)

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL A1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	70	Y	FAC
2. *Acer saccharinum*	10	N	FACW
3. *Populus tremuloides*	5	N	FAC
4. *Betula papyrifera*	2	N	FACU
5.			
6.			
7.			
	87	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	10	Y	FAC
2. *Rubus hispidoides*	3	Y	FACW
3.			
4.			
5.			
6.			
7.			
	13	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Symphyotrichum lanceolatum*	15	Y	FACW
2. *Geum canadense*	10	Y	FAC
3. *Onoclea sensibilis*	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	33.00	x 2 =	66.00
FAC species	95.00	x 3 =	285.00
FACU species	2.00	x 4 =	8.00
UPL species	0.00	x 5 =	0.00
Column Totals:	130.00 (A)		359.00 (B)

Prevalence Index = B/A = 2.76

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.)

SOIL Sampling Point: WL A1

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 3/1	100					SL	
8-12	10YR 3/1	95	10YR 4/6	5	C	M	SL	Prominent redox.
12-18	10YR 8/3	80	10YR 4/6	20	C	M	SL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac Sampling Date: 2021-12-06

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL A2

Investigator(s): David Nigro, Carl LaRiccia, Chris Kunkle Section, Township, Range: sec 12 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.226803 Long: -82.655701 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: PFO

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): 6

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL A2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Y	FAC
2. *Populus tremuloides*	30	Y	FAC
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	5	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	25	Y	FACW
2. *Solidago gigantea*	10	Y	FACW
3. *Rumex crispus*	3	N	FAC
4. *Symphyotrichum lanceolatum*	2	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	37.00	x 2 =	74.00
FAC species	73.00	x 3 =	219.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	110.00 (A)		293.00 (B)

Prevalence Index = B/A = 2.66

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.)

SOIL Sampling Point: WL A2

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 2/1	100					SL	
6-12	10YR 2/1	85	10YR 5/6	15	C	M	SL	Prominent redox.
12-18	10YR 2/2	70	10YR 4/4	30	C	M	SL	Distinct redox.

[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: Riverbend Wind City/County: Sanilac Sampling Date: 2021-12-07

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL B1

Investigator(s): David Nigro, Carl LaRiccia Section, Township, Range: sec 14 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.217443 Long: -82.673147 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: PFO

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL B1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus bicolor*	20	Y	FACW
2. *Acer rubrum*	20	Y	FAC
3. *Acer saccharinum*	10	N	FACW
4. *Ailanthus altissima*	5	N	UPL
5.			
6.			
7.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	15	Y	FAC
2. *Rubus pubescens*	5	Y	FACW
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Typha angustifolia*	10	Y	OBL
2. *Solidago gigantea*	10	Y	FACW
3. *Carex sp.*	10	Y	
4. *Phalaris arundinacea*	5	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20.00	x 1 =	20.00
FACW species	50.00	x 2 =	100.00
FAC species	35.00	x 3 =	105.00
FACU species	0.00	x 4 =	0.00
UPL species	5.00	x 5 =	25.00
Column Totals:	110.00 (A)		250.00 (B)

Prevalence Index = B/A = 2.27

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.)

SOIL Sampling Point: WL B1

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 3/1	100					SL	
3-12	10YR 3/1	85	10YR 5/6	15	C	M	SL	Prominent redox.
12-18	10YR 5/1	80	10YR 5/4	20	C	M	SL	Distinct redox.

[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: Riverbend Wind City/County: Sanilac Sampling Date: 2021-12-07

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL B2

Investigator(s): David Nigro, Carl LaRicca Section, Township, Range: sec 16 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.210040 Long: -82.712609 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: PFO/PSS

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL B2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	35	Y	FAC
2. *Quercus bicolor*	5	N	FACW
3. *Populus tremuloides*	5	N	FAC
4.			
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus alba*	15	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Carex vulpinoidea*	10	Y	OBL
2. *Symphyotrichum lanceolatum*	10	Y	FACW
3. *Solidago gigantea*	5	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis sp.*	10	Y	
2.			
3.			
4.			
	10	= 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: 83.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	35.00	x 2 =	70.00
FAC species	40.00	x 3 =	120.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	85.00 (A)		200.00 (B)

Prevalence Index = B/A = 2.35

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.)

SOIL Sampling Point: WL B2

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 2/1	100					SL	
2-9	10YR 3/2	90	10YR 5/6	10	C	M	SCL	Prominent redox.
9-16	10YR 5/1	65	10YR 5/6	35	C	M	SCL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac Sampling Date: 2021-12-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL C1

Investigator(s): David Nigro, Carl LaRiccia Section, Township, Range: sec 26 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.183288 Long: -82.678982 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: PFO

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL C1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Y	FAC
2. *Quercus palustris*	15	Y	FACW
3. *Populus grandidentata*	10	Y	FACU
4. *Quercus muehlenbergii*	5	N	FACU
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	25	Y	FAC
2. *Rubus pubescens*	5	N	FACW
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Solidago gigantea*	5	Y	FACW
2. *Symphyotrichum lanceolatum*	5	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis sp.*	5	Y	
2.			
3.			
4.			
	5	= 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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71.43 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	30.00	x 2 =	60.00
FAC species	45.00	x 3 =	135.00
FACU species	15.00	x 4 =	60.00
UPL species	0.00	x 5 =	0.00
Column Totals:	90.00 (A)		255.00 (B)

Prevalence Index = B/A = 2.83

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.)

SOIL

Sampling Point: WL C1

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 3/1	100					SCL	
6-10	10YR 3/1	98	10YR 5/4	2	C	M	SCL	Distinct redox.
10-18	10YR 6/2	60	10YR 5/6	20	C	M	SCL	Prominent redox.
			10YR 3/1	20	C	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)
- ___ 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: Riverbend Wind City/County: Sanilac Sampling Date: 2021-12-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL C2

Investigator(s): David Nigro, Carl LaRiccia Section, Township, Range: sec 26 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.185960 Long: -82.678783 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: PFO

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL C2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	25	Y	FACW
2. *Acer saccharinum*	10	Y	FACW
3. *Acer rubrum*	10	Y	FAC
4. *Ulmus americana*	5	N	FACW
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	10	Y	FAC
2. *Rubus pubescens*	10	Y	FACW
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Elymus virginicus*	10	Y	FACW
2. *Symphyotrichum lanceolatum*	10	Y	FACW
3. *Phalaris arundinacea*	5	N	FACW
4. *Solidago gigantea*	5	N	FACW
5. *Erigeron canadensis*	5	N	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis sp*	10	Y	
2.			
3.			
4.			
	10	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	80.00	x 2 =	160.00
FAC species	20.00	x 3 =	60.00
FACU species	5.00	x 4 =	20.00
UPL species	0.00	x 5 =	0.00
Column Totals:	105.00 (A)		240.00 (B)

Prevalence Index = B/A = 2.29

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.)

SOIL Sampling Point: WL C2

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 3/2	100					SCL	
6-10	10YR 3/2	95	10YR 4/6	5	C	M	SCL	Prominent redox.
10-18	10YR 5/2	70	10YR 5/6	30	C	M	SCL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac Sampling Date: 2021-12-08

Applicant/Owner: Libert Power State: Michigan Sampling Point: WL C3

Investigator(s): David Nigro, Carl LaRiccia Section, Township, Range: sec 26 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.181155 Long: -82.673319 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes 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 _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL C3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Agrostis stolonifera*	20	Y	FACW
2. *Panicum capillare*	15	Y	FAC
3. *Rumex crispus*	10	N	FAC
4. *Beta vulgaris*	10	N	UPL
5. *Setaria pumila*	5	N	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	20.00	x 2 =	40.00
FAC species	30.00	x 3 =	90.00
FACU species	0.00	x 4 =	0.00
UPL species	10.00	x 5 =	50.00
Column Totals:	60.00 (A)		180.00 (B)

Prevalence Index = B/A = 3.0

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.)

SOIL

Sampling Point: WL C3

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 3/1	100					SCL	
2-8	10YR 3/1	90	10YR 5/6	10	C	M	SCL	Prominent redox.
8-16	10YR 4/2	80	10YR 5/6	20	C	M	SCL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac Sampling Date: 2021-12-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL C4

Investigator(s): David Nigro Section, Township, Range: sec 26 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.183292 Long: -82.673429 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: PFO

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL C4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	45	Y	FAC
2. *Quercus macrocarpa*	10	N	FACU
3. *Acer saccharinum*	5	N	FACW
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	10	Y	FAC
2. *Rubus pubescens*	10	Y	FACW
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Solidago gigantea*	15	Y	FACW
2. *Symphyotrichum lanceolatum*	10	Y	FACW
3. *Poa palustris*	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	45.00	x 2 =	90.00
FAC species	55.00	x 3 =	165.00
FACU species	10.00	x 4 =	40.00
UPL species	0.00	x 5 =	0.00
Column Totals:	110.00 (A)		295.00 (B)

Prevalence Index = B/A = 2.68

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.)

SOIL Sampling Point: WL C4

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					SCL	
6-12	10YR 2/2	95	10YR 4/6	5	C	M	SCL	Prominent redox.
12-18	10YR 6/1	80	10YR 5/6	20	C	M	SCL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-04-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL CC1

Investigator(s): David Nigro, Carl LaRiccia Section, Township, Range: sec 15 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.218371 Long: -82.706000 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: PFO1C

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): 2
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL CC1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	15	Y	FACW
2. *Quercus alba*	5	Y	FACU
3. *Carya ovata*	5	Y	FACU
4.			
5.			
6.			
7.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Ulmus americana*	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Carex grayi*	10	Y	FACW
2. *Onoclea sensibilis*	5	Y	FACW
3. *Juncus effusus*	2	N	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	17	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		= 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: 66.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2.00	x 1 =	2.00
FACW species	35.00	x 2 =	70.00
FAC species	0.00	x 3 =	0.00
FACU species	10.00	x 4 =	40.00
UPL species	0.00	x 5 =	0.00
Column Totals:	47.00 (A)		112.00 (B)

Prevalence Index = B/A = 2.38

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.)

SOIL

Sampling Point: WL CC1

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 3/2	100					SCL	
3-9	10YR 3/2	80	10YR 4/6	20	C	M	SCL	Prominent redox.
9-18	10YR 3/2	75	10YR 6/2	25	D	M	CL	
9-18	10YR 3/2	50	10YR 4/6	25	C	M	SCL	Prominent redox.

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-07-10

Applicant/Owner: Liberty Wind State: Michigan Sampling Point: WL DC1

Investigator(s): R.Drenth, J.Way Section, Township, Range: sec 25 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.177844 Long: -82.775064 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: _____

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✔	No _____	

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

PEM/PFO depression 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 ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DC1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	60	Y	FACW
2. *Quercus bicolor*	10	N	FACW
3.			
4.			
5.			
6.			
7.			
	70.0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5)			
1. *Leersia oryzoides*	90	Y	OBL
2. *Carex vulpinoidea*	15	N	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105.0	= Total Cover	

Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	105.00	x 1 =	105.00
FACW species	70.00	x 2 =	140.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	175.00 (A)		245.00 (B)

Prevalence Index = B/A = 1.4

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.)

SOIL Sampling Point: WL DC1

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 5/2	100						
6-18	10YR 5/2	85	10YR 4/6	15	C	M	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-11

Applicant/Owner: Liberty State: Michigan Sampling Point: WL DD8

Investigator(s): K. Yantz, D. Nigro -Atwell, LLC Section, Township, Range: sec 06 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 8-15

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.235817 Long: -82.753780 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: Pond

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

Are Vegetation ✓, Soil ✓, or Hydrology ✓ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
Man made open water wetland

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): 48
Water Table Present?	Yes ✓	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DD8

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	30	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	30.00	x 2 =	60.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	30.00 (A)		60.00 (B)

Prevalence Index = B/A = 2.0

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.)

SOIL

Sampling Point: WL DD8

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 5/2	80	5YR 5/4	20	C	M	CL	Prominent redox.

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-07-11

Applicant/Owner: Liberty State: Michigan Sampling Point: WL DE1

Investigator(s): B. Gainer, B. Minock - Atwell, LLC Section, Township, Range: sec 20 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.190348 Long: -82.854854 Datum: WGS84

Soil Map Unit Name: Marlette silt loam and loam, 2 to 6 percent slopes, slightly eroded NWI classification: _____

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
Large PFO depression that continues offsite

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): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DE1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	50	Y	FACW
2. *Ulmus americana*	20	Y	FACW
3. *Fraxinus pennsylvanica*	20	Y	FACW
4. *Salix nigra*	10	N	OBL
5.			
6.			
7.			
	100.0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	5	Y	FAC
2. *Fraxinus pennsylvanica*	5	Y	FACW
3.			
4.			
5.			
6.			
7.			
	10.0	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Carex crinita*	40	Y	OBL
2. *Carex bebbii*	20	Y	OBL
3. *Carex lupulina*	15	N	OBL
4. *Onoclea sensibilis*	10	N	FACW
5. *Carex cristatella*	10	N	FACW
6. *Symphyotrichum puniceum*	10	N	OBL
7. *Toxicodendron radicans*	5	N	FAC
8. *Fraxinus pennsylvanica*	5	N	FACW
9.			
10.			
11.			
12.			
	115.0	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	10	Y	FAC
2.			
3.			
4.			
	10.0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	95.00	x 1 =	95.00
FACW species	120.00	x 2 =	240.00
FAC species	20.00	x 3 =	60.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	235.00 (A)		395.00 (B)

Prevalence Index = B/A = 1.68

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.)

SOIL

Sampling Point: WL DE1

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
0-18	10YR 5/1	85	10YR 4/6	15	C	M	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-07-11

Applicant/Owner: Liberty State: Michigan Sampling Point: WL DF1

Investigator(s): K. Yantz, O. Atkins -Atwell, LLC Section, Township, Range: sec 08 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.222773 Long: -82.744951 Datum: WGS84

Soil Map Unit Name: Parkhill loam and mucky loam, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✔	No _____	

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

PEM PSS PFO

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): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DF1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	30	Y	FAC
2. *Ulmus americana*	15	Y	FACW
3.			
4.			
5.			
6.			
7.			
	45.0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix interior*	30	Y	FACW
2. *Ulmus americana*	20	Y	FACW
3.			
4.			
5.			
6.			
7.			
	50.0	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Solidago gigantea*	20	Y	FACW
2. *Phalaris arundinacea*	10	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30.0	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0	= 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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	95.00	x 2 =	190.00
FAC species	30.00	x 3 =	90.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		280.00 (B)

Prevalence Index = B/A = 2.24

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.)

SOIL

Sampling Point: WL DF1

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 3/2	100					SL	
6-18	10YR 3/2	90	10YR 3/6	10	C	M	SL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-11

Applicant/Owner: Liberty State: Michigan Sampling Point: WL EE1

Investigator(s): K. Yantz, D. Nigro -Atwell, LLC Section, Township, Range: sec 06 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.239777 Long: -82.759138 Datum: WGS84

Soil Map Unit Name: Marlette silt loam and loam, 0 to 2 percent slopes, slightly eroded NWI classification: PFO/PSS

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PSS depression

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): 12
Water Table Present?	Yes ✓	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL EE1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cephalanthus occidentalis*	90	Y	OBL
2. *Salix discolor*	5	N	FACW
3. *Cornus racemosa*	5	N	FAC
4.			
5.			
6.			
7.			
	100 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	10	Y	FACW
2. *Onoclea sensibilis*	5	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	5	Y	FAC
2.			
3.			
4.			
	5 = 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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	90.00	x 1 =	90.00
FACW species	20.00	x 2 =	40.00
FAC species	10.00	x 3 =	30.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	120.00 (A)		160.00 (B)

Prevalence Index = B/A = 1.33

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.)

SOIL

Sampling Point: WL EE1

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 5/2	90	5YR 5/4	10	C	M	CL	Prominent redox.

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-11

Applicant/Owner: Liberty State: Michigan Sampling Point: WL EE2

Investigator(s): K. Yantz, D. Nigro -Atwell, LLC Section, Township, Range: sec 01 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.234178 Long: -82.785415 Datum: WGS84

Soil Map Unit Name: Parkhill loam and mucky loam, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

Remarks: (Explain alternative procedures here or in a separate report.)
PEM depression drains into adjacent watercourse

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): 1	
Water Table Present?	Yes ✓	No _____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0	**Wetland Hydrology Present? Yes ✓ No _____**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL EE2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Calamagrostis canadensis*	92	Y	OBL
2. *Phalaris arundinacea*	5	N	FACW
3. *Symphyotrichum lanceolatum*	2	N	FACW
4. *Carex annectens*	1	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	92.00	x 1 =	92.00
FACW species	8.00	x 2 =	16.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	100.00 (A)		108.00 (B)

Prevalence Index = B/A = 1.08

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.)

SOIL Sampling Point: WL EE2

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 2/2	100					MUCK	
8-16	10YR 5/2	85	10YR 6/4	15	C	M	CL	Distinct redox.

[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: Riverbend Wind City/County: Sanilac Sampling Date: 2021-12-14

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL F1

Investigator(s): K. Yantz, C. LaRiccia-Atwell, LLC Section, Township, Range: sec 26 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.182167 Long: -82.789396 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PEM/PSS/PFO depression.

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): 1
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL F1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	10	Y	FACW
2. *Ulmus americana*	10	Y	FACW
3. *Quercus rubra*	5	Y	FACU
4.			
5.			
6.			
7.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Alnus incana*	20	Y	FACW
2. *Cornus racemosa*	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	60	Y	FACW
2. *Solidago gigantea*	10	N	FACW
3. *Carex lupulina*	5	N	OBL
4. *Carex gynandra*	5	N	OBL
5. *Onoclea sensibilis*	5	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
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: 83.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	115.00	x 2 =	230.00
FAC species	10.00	x 3 =	30.00
FACU species	5.00	x 4 =	20.00
UPL species	0.00	x 5 =	0.00
Column Totals:	140.00 (A)		290.00 (B)

Prevalence Index = B/A = 2.07

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.)

SOIL

Sampling Point: WL F1

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					MUCK	

[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: Riverbend Wind City/County: Sanilac Sampling Date: 2021-12-14

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL F2

Investigator(s): K. Yantz, C. LaRiccia-Atwell, LLC Section, Township, Range: sec 27 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.184673 Long: -82.805314 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: PFO/PSS

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PEM/PFO. Forested woodlot surrounded by agricultural fields.

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): 6

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL F2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	20	Y	FACW
2. *Acer rubrum*	10	Y	FAC
3. *Acer saccharinum*	10	Y	FACW
4. *Populus deltoides*	5	N	FAC
5. *Quercus rubra*	5	N	FACU
6.			
7.			
	50	= Total Cover	

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

Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	20	Y	FACW
2. *Carex lacustris*	10	Y	OBL
3. *Rubus pubescens*	10	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	

Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	60.00	x 2 =	120.00
FAC species	15.00	x 3 =	45.00
FACU species	5.00	x 4 =	20.00
UPL species	0.00	x 5 =	0.00
Column Totals:	90.00 (A)		195.00 (B)

Prevalence Index = B/A = 2.17

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.)

SOIL Sampling Point: WL F2

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 4/2	95	10YR 4/6	5	C	M	SL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac Sampling Date: 2021-12-14

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL F3

Investigator(s): K. Yantz, C. LaRiccia-Atwell, LLC Section, Township, Range: sec 35 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.174014 Long: -82.788478 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PEM. Roadside ditch.

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): 6

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL F3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix interior*	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	60	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	65.00	x 2 =	130.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	65.00 (A)		130.00 (B)

Prevalence Index = B/A = 2.0

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.)

SOIL Sampling Point: WL F3

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 4/2	95	10YR 4/6	5	C	M	SL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac Sampling Date: 2021-12-14

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL F4

Investigator(s): K. Yantz, C. LaRiccia-Atwell, LLC Section, Township, Range: sec 26 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.176616 Long: -82.783964 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: PFO/PSS

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

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): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL F4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	15	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Physocarpus opulifolius*	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2. *Urtica dioica*	10	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15.00	x 1 =	15.00
FACW species	55.00	x 2 =	110.00
FAC species	10.00	x 3 =	30.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	80.00 (A)		155.00 (B)

Prevalence Index = B/A = 1.94

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.)

SOIL

Sampling Point: WL F4

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
0-16	10YR 2/1	100					MUCK	

[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: Riverbend Wind City/County: Sanilac Sampling Date: 2021-12-14

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL F5

Investigator(s): K. Yantz, C. LaRiccia-Atwell, LLC Section, Township, Range: sec 22 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.195788 Long: -82.809692 Datum: WGS84

Soil Map Unit Name: Marlette loam, 12 to 18 percent slopes, severely eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PEM/PSS. Surrounded by forested vegetation, inundated area in the center.

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): 6	
Water Table Present?	Yes ✓	No _____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0	**Wetland Hydrology Present? Yes ✓ No _____**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL F5

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cephalanthus occidentalis*	30	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	30	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30.00	x 1 =	30.00
FACW species	35.00	x 2 =	70.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	65.00 (A)		100.00 (B)

Prevalence Index = B/A = 1.54

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.)

SOIL

Sampling Point: WL F5

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					MUCK	

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-11

Applicant/Owner: Liberty State: Michigan Sampling Point: WL FF1

Investigator(s): K. Yantz, D. Nigro -Atwell, LLC Section, Township, Range: sec 20 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.204287 Long: -82.732121 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: PFO/PSS

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PFO mosaic wetland

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): 1
Water Table Present?	Yes ✓	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL FF1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	25	Y	FACW
2. *Quercus rubra*	20	Y	FACU
3. *Ulmus americana*	20	Y	FACW
4. *Quercus bicolor*	15	N	FACW
5. *Acer rubrum*	5	N	FAC
6. *Carya ovata*	3	N	FACU
7.			
	88	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Carex lacustris*	5	Y	OBL
2. *Phalaris arundinacea*	5	Y	FACW
3. *Elymus virginicus*	5	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0	= 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: 83.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5.00	x 1 =	5.00
FACW species	70.00	x 2 =	140.00
FAC species	5.00	x 3 =	15.00
FACU species	23.00	x 4 =	92.00
UPL species	0.00	x 5 =	0.00
Column Totals:	103.00 (A)		252.00 (B)

Prevalence Index = B/A = 2.45

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.)

SOIL

Sampling Point: WL FF1

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 3/2	100					MUCK	
2-6	10YR 5/2	85	10YR 6/4	15	C	M	SCL	Distinct redox.
6-16	10YR 6/2	60	10YR 6/4	40	C	M	SC	Distinct redox.

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-11

Applicant/Owner: Liberty State: Michigan Sampling Point: WL FF2

Investigator(s): K. Yantz, D. Nigro -Atwell, LLC Section, Township, Range: sec 23 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.199256 Long: -82.784424 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): 1
Water Table Present?	Yes ✓	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL FF2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Juncus effusus*	15	Y	OBL
2. *Phalaris arundinacea*	5	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15.00	x 1 =	15.00
FACW species	105.00	x 2 =	210.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	120.00 (A)		225.00 (B)

Prevalence Index = B/A = 1.88

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.)

SOIL

Sampling Point: WL FF2

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	10YR 2/2	95	10YR 5/4	5	C	M	SCL	Distinct redox.
4-10	10YR 2/2	85	10YR 5/6	15	C	M	SCL	Prominent redox.
10-16	10YR 6/2	80	10YR 6/4	20	C	M	SCL	Distinct redox.

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-11

Applicant/Owner: Liberty State: Michigan Sampling Point: WL FF3

Investigator(s): K. Yantz, D. Nigro -Atwell, LLC Section, Township, Range: sec 14 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.210204 Long: -82.792746 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: Pond

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

Remarks: (Explain alternative procedures here or in a separate report.)
Open water wetland within yard

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): 120
Water Table Present?	Yes ✓	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL FF3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	0.00 (A)		0.00 (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.)

No vegetation present due to inundation; assume hydric.

SOIL

Sampling Point: WL FF3

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						MUCK	

[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: Riverbend Wind City/County: Sanilac Sampling Date: 2021-12-16

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL H1

Investigator(s): K. Yantz, C. LaRiccia-Atwell, LLC Section, Township, Range: sec 29 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.186548 Long: -82.732086 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: Freshwater PFO/PSS

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
PEM/PFO woodlot surrounded by agricultural fields

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): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL H1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	30	Y	FACW
2. *Acer saccharinum*	25	Y	FACW
3. *Quercus palustris*	5	N	FACW
4.			
5.			
6.			
7.			
	60	= Total Cover	

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

Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	40	Y	FACW
2. *Solidago gigantea*	15	Y	FACW
3. *Carex lacustris*	10	N	OBL
4. *Elymus virginicus*	10	N	FACW
5. *Cornus racemosa*	5	N	FAC
6. *Onoclea sensibilis*	5	N	FACW
7. *Rubus pubescens*	5	N	FACW
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	

Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		= 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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	135.00	x 2 =	270.00
FAC species	5.00	x 3 =	15.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	150.00 (A)		295.00 (B)

Prevalence Index = B/A = 1.97

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.)

SOIL Sampling Point: WL H1

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					SICL	
16-20	10YR 6/2	100					CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-11

Applicant/Owner: Liberty State: Michigan Sampling Point: WL HH1

Investigator(s): K. Yantz, D. Nigro -Atwell, LLC Section, Township, Range: sec 33 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.168925 Long: -82.830259 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
PFO drainage within woodlot

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): 1
Water Table Present?	Yes ✓	No _____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL HH1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	40	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	5	Y	FAC
2. *Fraxinus pennsylvanica*	5	Y	FACW
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	45.00	x 2 =	90.00
FAC species	5.00	x 3 =	15.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	50.00 (A)		105.00 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

[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.)

SOIL

Sampling Point: WL HH1

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 2/1	100					MUCK	
8-16	10YR 2/1	80	10YR 6/4	15	C	M	SCL	Prominent redox.
			10YR 5/2	5	D	M	SCL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-11

Applicant/Owner: Liberty State: Michigan Sampling Point: WL HH2

Investigator(s): K. Yantz, D. Nigro -Atwell, LLC Section, Township, Range: sec 33 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.169838 Long: -82.831414 Datum: WGS84

Soil Map Unit Name: McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology ✓ 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: _____

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

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): 1
Water Table Present?	Yes ✓	No _____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL HH2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	30	Y	FAC
2. *Fraxinus pennsylvanica*	10	Y	FACW
3. *Rhamnus cathartica*	5	N	FAC
4.			
5.			
6.			
7.			
	45 = Total Cover		
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	10.00	x 2 =	20.00
FAC species	35.00	x 3 =	105.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	45.00 (A)		125.00 (B)

Prevalence Index = B/A = 2.78

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.)

SOIL

Sampling Point: WL HH2

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 3/2	80	10YR 5/6	15	C	M	SCL	Prominent redox.
0-16			10YR 5/2	5	D	M	SCL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-11

Applicant/Owner: Liberty State: Michigan Sampling Point: WL HH3

Investigator(s): K. Yantz, D. Nigro -Atwell, LLC Section, Township, Range: sec 15 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.216185 Long: -82.808740 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PFO depression

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): 3
Water Table Present?	Yes ✓	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WL HH3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus bicolor*	30	Y	FACW
2. *Ulmus americana*	25	Y	FACW
3. *Salix nigra*	10	N	OBL
4.			
5.			
6.			
7.			
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	55.00	x 2 =	110.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	65.00 (A)		120.00 (B)

Prevalence Index = B/A = 1.85

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.)

SOIL

Sampling Point: WL HH3

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					SCL	
6-16	10YR 3/2	90	10YR 6/4	10	C	M	SCL	Distinct redox.

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-11

Applicant/Owner: Liberty State: Michigan Sampling Point: WL HH4

Investigator(s): K. Yantz, D. Nigro -Atwell, LLC Section, Township, Range: sec 15 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.215170 Long: -82.807562 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PSS depression

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): 1
Water Table Present?	Yes ✓	No _____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL HH4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	50	Y	FAC
2. *Cornus racemosa*	40	Y	FAC
3.			
4.			
5.			
6.			
7.			
	90 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex lacustris*	5	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5.00	x 1 =	5.00
FACW species	5.00	x 2 =	10.00
FAC species	90.00	x 3 =	270.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	100.00 (A)		285.00 (B)

Prevalence Index = B/A = 2.85

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.)

SOIL Sampling Point: WL HH4

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 3/2	100					SCL	
6-16	10YR 3/2	80	10YR 6/6	20	C	M	SCL	Prominent redox.

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-16

Applicant/Owner: Liberty State: Michigan Sampling Point: WL II1

Investigator(s): J. Brown - Atwell LLC Section, Township, Range: sec 14 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 8-15

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.210415 Long: -82.795993 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: Pubgx

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 ✓	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

Open water wetland in residential backyard.

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): 36	
Water Table Present?	Yes ✓	No _____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0	**Wetland Hydrology Present?** Yes ✓ No _____

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

Remarks:

10 ft deep open water

VEGETATION – Use scientific names of plants. Sampling Point: wlii1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
= Total Cover			
Herb Stratum (Plot size: 5)			
1. *Festuca rubra*	5	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
5 = Total Cover			
Woody Vine Stratum (Plot size: 30)			
1.			
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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	0.00	x 3 =	0.00
FACU species	5.00	x 4 =	20.00
UPL species	0.00	x 5 =	0.00
Column Totals:	5.00 (A)		20.00 (B)

Prevalence Index = B/A = 4.0

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.)

Maintained lawn around feature.

SOIL

Sampling Point: wlii1

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-								

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-16

Applicant/Owner: Liberty State: Michigan Sampling Point: WL II2

Investigator(s): J. Brown - Atwell LLC Section, Township, Range: sec 14 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 8-15

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.210384 Long: -82.797272 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PSS/PFO

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): 10
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

The PFO section of the complex had areas of standing of water. 1 ft at the deepest spot. The PSS section was adjacent to a maintained lawn and ag field.

VEGETATION – Use scientific names of plants. Sampling Point: wlii2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Y	FAC
2. *Acer saccharinum*	20	Y	FACW
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Alnus incana*	50	Y	FACW
2. *Acer rubrum*	10	N	FAC
3. *Ribes americanum*	3	N	FACW
4. *Cornus racemosa*	2	N	FAC
5.			
6.			
7.			
	65	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Carex sp*	15	Y	FACU
2. *Moss*	15	Y	
3. *Toxicodendron radicans*	5	N	FAC
4. *Symphyotrichum lanceolatum*	5	N	FACW
5. *Onoclea sensibilis*	5	N	FACW
6. *Vitis riparia*	2	N	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	47	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	83.00	x 2 =	166.00
FAC species	59.00	x 3 =	177.00
FACU species	15.00	x 4 =	60.00
UPL species	0.00	x 5 =	0.00
Column Totals:	157.00 (A)		403.00 (B)

Prevalence Index = B/A = 2.57

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.)

The PSS is a dense stand of alder adjacent to a maintained lawn. The PFO is a red maple swamp.

SOIL Sampling Point: wlii2

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 3/3						CL	
8-18	10YR 5/1	94	10YR 5/6	6	C	M	C	

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-16

Applicant/Owner: Liberty State: Michigan Sampling Point: WL II3

Investigator(s): J. Brown - Atwell LLC Section, Township, Range: sec 14 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 8-15

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.212663 Long: -82.803352 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

Remarks: (Explain alternative procedures here or in a separate report.)
This PEM is mowed once or twice a season.

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): 3
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: wlii3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phragmites australis*	90	Y	FACW
2. *Phalaris arundinacea*	18	N	FACW
3. *Moss*	5		
4. *Symphyotrichum lanceolatum*	5	N	FACW
5. *Carex sp*	2	N	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	120 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	113.00	x 2 =	226.00
FAC species	0.00	x 3 =	0.00
FACU species	2.00	x 4 =	8.00
UPL species	0.00	x 5 =	0.00
Column Totals:	115.00 (A)		234.00 (B)

Prevalence Index = B/A = 2.03

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.)

The feature is mostly Phragmites and Phalaris. There is one planted willow in the depression.

SOIL

Sampling Point: wlii3

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 5/2						CL	
2-18	10YR 5/1	94	10YR 5/6	6	C	M	C	

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-16

Applicant/Owner: Liberty State: Michigan Sampling Point: WL II4

Investigator(s): J. Brown - Atwell LLC Section, Township, Range: sec 10 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 8-15

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.223086 Long: -82.706170 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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)

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

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

Remarks:

Some standing water.

VEGETATION – Use scientific names of plants. Sampling Point: wlii4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus bicolor*	60	Y	FACW
2. *Acer rubrum*	40	Y	FAC
3. *Ulmus americana*	5	N	FACW
4. *Acer saccharinum*	5	N	FACW
5.			
6.			
7.			
	110	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Acer rubrum*	10	Y	FAC
2. *Ribes americanum*	3	Y	FACW
3. *Cornus racemosa*	2	N	FAC
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	10	Y	FACW
2. *Onoclea sensibilis*	10	Y	FACW
3. *Carex sp*	8	Y	FACU
4. *Toxicodendron radicans*	5	N	FAC
5. *Moss*	5		
6. *Symphyotrichum lanceolatum*	5	N	FACW
7.			
8.			
9.			
10.			
11.			
12.			
	43	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.71 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	98.00	x 2 =	196.00
FAC species	57.00	x 3 =	171.00
FACU species	8.00	x 4 =	32.00
UPL species	0.00	x 5 =	0.00
Column Totals:	163.00 (A)		399.00 (B)

Prevalence Index = B/A = 2.45

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.)

SOIL Sampling Point: wlii4

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 3/3						CL	
8-18	10YR 5/1	94	10YR 5/6	6	C	M	C	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-01-03

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL J1

Investigator(s): C. LaRiccia, C. Scholten Section, Township, Range: sec 36 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.173748 Long: -82.659595 Datum: WGS84

Soil Map Unit Name: Tonkey and Bach fine sandy loams, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): 2

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:
Snow covered

VEGETATION – Use scientific names of plants. Sampling Point: WL J1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Y	FAC
2. *Ulmus americana*	10	N	FACW
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	10.00	x 2 =	20.00
FAC species	50.00	x 3 =	150.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	60.00 (A)		170.00 (B)

Prevalence Index = B/A = 2.83

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.)

Snow covered, difficult to assess

SOIL

Sampling Point: WL J1

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 3/1	100					SL	
6-16	10YR 3/1	80	10YR 5/6	20	C	M/PL	SL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-01-03

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL J2

Investigator(s): C. LaRiccia, C. Scholten Section, Township, Range: sec 36 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.172529 Long: -82.650968 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: PFO1C

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PFO depression in woodlot, connects to WC J2 and WC J3

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): 2

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

Snow covered

VEGETATION – Use scientific names of plants. Sampling Point: WL J2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Y	FAC
2. *Ulmus americana*	20	Y	FACW
3. *Carpinus caroliniana*	5	N	FAC
4. *Carya ovata*	2	N	FACU
5.			
6.			
7.			
	87	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	15	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Carex sp.*	12	Y	FACW
2. *Elymus virginicus*	10	Y	FACW
3. *Onoclea sensibilis*	5	N	FACW
4. *Juncus effusus*	3	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	3	Y	FAC
2. *Toxicodendron radicans*	2	Y	FAC
3.			
4.			
	5	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3.00	x 1 =	3.00
FACW species	47.00	x 2 =	94.00
FAC species	85.00	x 3 =	255.00
FACU species	2.00	x 4 =	8.00
UPL species	0.00	x 5 =	0.00
Column Totals:	137.00 (A)		360.00 (B)

Prevalence Index = B/A = 2.63

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.)

Snow covered, difficult to assess

SOIL

Sampling Point: WL J2

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 3/1	100					SL	
6-16	10YR 3/1	80	10YR 5/6	20	C	M/PL	SL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-01-03

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL J3

Investigator(s): C. LaRiccia, C. Scholten Section, Township, Range: sec 36 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.171146 Long: -82.655464 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: PFO1C

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
PFO depression in woodlot, connects to WC J4

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): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Snow covered

VEGETATION – Use scientific names of plants.

Sampling Point: WL J3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Y	FAC
2. *Ulmus americana*	20	Y	FACW
3. *Carpinus caroliniana*	5	N	FAC
4. *Populus tremuloides*	5	N	FAC
5. *Carya ovata*	2	N	FACU
6.			
7.			
	82	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	18	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	18	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Elymus virginicus*	5	Y	FACW
2. *Onoclea sensibilis*	5	Y	FACW
3. *Carex sp.*	5	Y	FACW
4. *Juncus effusus*	3	N	OBL
5. *Rubus allegheniensis*	3	N	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	21	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	5	Y	FAC
2. *Toxicodendron radicans*	2	Y	FAC
3.			
4.			
	7	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3.00	x 1 =	3.00
FACW species	35.00	x 2 =	70.00
FAC species	85.00	x 3 =	255.00
FACU species	5.00	x 4 =	20.00
UPL species	0.00	x 5 =	0.00
Column Totals:	128.00 (A)		348.00 (B)

Prevalence Index = B/A = 2.72

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.)

Snow covered, difficult to assess

SOIL

Sampling Point: WL J3

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 3/1	75	10YR 5/6	25	C	M/PL	SL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac Sampling Date: 2022-01-04

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL K1

Investigator(s): C. LaRiccia, C. Scholten Section, Township, Range: sec 21 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.195254 Long: -82.714948 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: PFO1C

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
PFO depression in woodlot, connects to several ephemeral watercourses

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): 2

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Snow covered

VEGETATION – Use scientific names of plants.

Sampling Point: WL K1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Y	FAC
2. *Ulmus americana*	20	Y	FACW
3. *Carya ovata*	2	N	FACU
4.			
5.			
6.			
7.			
	72	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	18	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	18	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Carex intumescens*	10	Y	FACW
2. *Elymus virginicus*	5	Y	FACW
3. *Onoclea sensibilis*	5	Y	FACW
4. *Carex sp.*	5	Y	FACW
5. *Phalaris arundinacea*	5	Y	FACW
6. *Rubus pubescens*	3	N	FACW
7. *Geum rivale*	2	N	OBL
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	5	Y	FAC
2. *Toxicodendron radicans*	2	Y	FAC
3.			
4.			
	7	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2.00	x 1 =	2.00
FACW species	53.00	x 2 =	106.00
FAC species	75.00	x 3 =	225.00
FACU species	2.00	x 4 =	8.00
UPL species	0.00	x 5 =	0.00
Column Totals:	132.00 (A)		341.00 (B)

Prevalence Index = B/A = 2.58

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.)

Snow covered, difficult to assess

SOIL

Sampling Point: WL K1

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 3/1	75	10YR 5/6	25	C	M/PL	SL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac Sampling Date: 2022-01-05

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL L1

Investigator(s): C. LaRiccia, C. Scholten Section, Township, Range: sec 21 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.173442 Long: -82.667060 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: PFO1C/SS1C

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
PEM/PFO depression

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): 2

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Snow covered

VEGETATION – Use scientific names of plants.

Sampling Point: WL L1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Y	FAC
2. *Fraxinus pennsylvanica*	15	Y	FACW
3. *Ulmus americana*	10	N	FACW
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	3	N	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	3	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Solidago gigantea*	10	Y	FACW
2. *Phalaris arundinacea*	5	Y	FACW
3. *Rubus pubescens*	5	Y	FACW
4. *Geum rivale*	2	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	22	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0	= 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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2.00	x 1 =	2.00
FACW species	45.00	x 2 =	90.00
FAC species	53.00	x 3 =	159.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	100.00 (A)		251.00 (B)

Prevalence Index = B/A = 2.51

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.)

Snow covered, difficult to assess

SOIL

Sampling Point: WL L1

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	80	10YR 6/8	20	C	M/PL	SL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-01-06

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL M1

Investigator(s): C. LaRiccia, C. Scholten Section, Township, Range: sec 08 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.216271 Long: -82.862401 Datum: WGS84

Soil Map Unit Name: Marlette loam, 0 to 2 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
PEM/PSS depression including small drainage canal

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): 3
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Snow covered

VEGETATION – Use scientific names of plants. Sampling Point: WL M1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	5	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix interior*	30	Y	FACW
2. *Cornus racemosa*	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	30	Y	FACW
2. *Solidago gigantea*	20	Y	FACW
3. *Symphyotrichum sp.*	15	Y	FAC
4. *Juncus tenuis*	10	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	3	N	FAC
2.			
3.			
4.			
	3 = 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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	80.00	x 2 =	160.00
FAC species	43.00	x 3 =	129.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	123.00 (A)		289.00 (B)

Prevalence Index = B/A = 2.35

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.)

Snow covered, difficult to assess

SOIL

Sampling Point: WL M1

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 3/1	80	10YR 5/6	20	C	M/PL	SL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-01-06

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL M2

Investigator(s): C. LaRiccia, C. Scholten Section, Township, Range: sec 10 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.223381 Long: -82.820005 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: PFO1C/SS1C

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
PFO depression connecting to WC M7

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): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Snow covered

VEGETATION – Use scientific names of plants.

Sampling Point: WL M2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	70	Y	FAC
2. *Carpinus caroliniana*	2	N	FAC
3.			
4.			
5.			
6.			
7.			
	72	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus amomum*	15	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	30	Y	FACW
2. *Solidago gigantea*	20	Y	FACW
3. *Symphyotrichum sp.*	5	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	3	N	FAC
2.			
3.			
4.			
	3	= 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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	65.00	x 2 =	130.00
FAC species	80.00	x 3 =	240.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	145.00 (A)		370.00 (B)

Prevalence Index = B/A = 2.55

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.)

Snow covered, difficult to assess

SOIL

Sampling Point: WL M2

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 2/2	85	10YR 5/6	15	C	M/PL	SL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-01-07

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL N1

Investigator(s): C. LaRiccia, C. Scholten Section, Township, Range: sec 11 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.229886 Long: -82.670275 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: PFO1C

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

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): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Snow covered

VEGETATION – Use scientific names of plants.

Sampling Point: WL N1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	70	Y	FAC
2. *Ulmus americana*	20	Y	FACW
3. *Carpinus caroliniana*	1	N	FAC
4.			
5.			
6.			
7.			
	91 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Onoclea sensibilis*	40	Y	FACW
2. *Phalaris arundinacea*	10	N	FACW
3. *Carex sp.*	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	3	N	FAC
2.			
3.			
4.			
	3 = 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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	75.00	x 2 =	150.00
FAC species	74.00	x 3 =	222.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	149.00 (A)		372.00 (B)

Prevalence Index = B/A = 2.5

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.)

Snow covered, difficult to assess

SOIL Sampling Point: WL N1

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 3/1	80	10YR 5/6	20	C	M/PL	SL	Prominent redox.

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-04

Applicant/Owner: Liberty State: Michigan Sampling Point: WL P1

Investigator(s): J. Brown, K. Yantz, Atwell, LLC Section, Township, Range: sec 36 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.170729 Long: -82.659279 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
PEM/PSS wetland

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): 2
Water Table Present?	Yes ✓	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:
Some standing water from recent rain events

VEGETATION – Use scientific names of plants. Sampling Point: WL P1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Spiraea alba*	40	Y	FACW
2. *Cornus racemosa*	15	Y	FAC
3. *Cornus alba*	5	N	FACW
4.			
5.			
6.			
7.			
	60 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	85	Y	FACW
2. *Juncus effusus*	5	N	OBL
3. *Solidago gigantea*	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5.00	x 1 =	5.00
FACW species	135.00	x 2 =	270.00
FAC species	15.00	x 3 =	45.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	155.00 (A)		320.00 (B)

Prevalence Index = B/A = 2.06

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.)

SOIL Sampling Point: WL P1

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
0-18	10YR 5/2	90	10YR 4/6	10	C	M	CL	Prominent redox.

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-04

Applicant/Owner: Liberty State: Michigan Sampling Point: WL P2

Investigator(s): J. Brown, K. Yantz, Atwell, LLC Section, Township, Range: sec 36 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.173616 Long: -82.653311 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): 1	
Water Table Present?	Yes ✓	No _____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0	**Wetland Hydrology Present? Yes ✓ No _____**

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

Remarks:
Some standing water from recent rain events

VEGETATION – Use scientific names of plants. Sampling Point: WL P2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix interior*	90	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	90 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	20	Y	FACW
2. *Phragmites australis*	10	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	120.00	x 2 =	240.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	120.00 (A)		240.00 (B)

Prevalence Index = B/A = 2.0

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.)

SOIL

Sampling Point: WL P2

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
0-18	10YR 5/2	90	10YR 4/6	10	C	M	C	Prominent redox.

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-04

Applicant/Owner: Liberty State: Michigan Sampling Point: WL P3

Investigator(s): J. Brown, K. Yantz, Atwell, LLC Section, Township, Range: sec 35 T009N R015E

Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.173155 Long: -82.664576 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation ✓, Soil ✓, or Hydrology _____ 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: _____

Remarks: (Explain alternative procedures here or in a separate report.)
Vegetation recently plowed and highly disturbed. PFO/PEM 80% 20%

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): 2
Water Table Present?	Yes ✓	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL P3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	30	Y	FAC
2. *Fraxinus pennsylvanica*	20	Y	FACW
3. *Ulmus americana*	20	Y	FACW
4. *Acer saccharinum*	10	N	FACW
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Populus balsamifera*	5	Y	FACW
2. *Salix interior*	5	Y	FACW
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	10	Y	FACW
2. *Apocynum cannabinum*	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	70.00	x 2 =	140.00
FAC species	40.00	x 3 =	120.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	110.00 (A)		260.00 (B)

Prevalence Index = B/A = 2.36

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.)

SOIL

Sampling Point: WL P3

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 5/2	100			C	M	CL	
6-18	10YR 5/2	97	10YR 4/6	3	C	M	C	Distinct redox.

[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:

Recently plowed, significantly disturbed

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Riverbend City/County: Sanilac County Sampling Date: 2022-04-04

Applicant/Owner: Liberty State: Michigan Sampling Point: WL R2

Investigator(s): J. Brown, K. Yantz, Atwell, LLC Section, Township, Range: sec 35 T009N R015E

Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.198895 Long: -82.678354 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: PFO/PSS

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

Naturally problematic due to out of growing season. PFO floodplain wetland.

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): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL R2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	20	Y	FAC
2. *Ulmus americana*	15	Y	FACW
3. *Acer saccharinum*	10	N	FACW
4. *Fraxinus pennsylvanica*	5	N	FACW
5. *Salix nigra*	5	N	OBL
6.			
7.			
	55	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5)			
1. *Rosa multiflora*	15	Y	FACU
2. *Aster sp.*	5	Y	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	

Woody Vine Stratum (Plot size: 30)			
1.			
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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5.00	x 1 =	5.00
FACW species	30.00	x 2 =	60.00
FAC species	20.00	x 3 =	60.00
FACU species	15.00	x 4 =	60.00
UPL species	0.00	x 5 =	0.00
Column Totals:	70.00 (A)		185.00 (B)

Prevalence Index = B/A = 2.64

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.)

SOIL Sampling Point: WL R2

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 3/2	100			C	M	CL	
8-18	10YR 4/2	97	10YR 4/6	3	C	M	C	Prominent redox.

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-04-05

Applicant/Owner: Liberty State: Michigan Sampling Point: WL S1

Investigator(s): David Nigro Section, Township, Range: sec 15 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.209747 Long: -82.695863 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: PFO1C

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	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)

- ✓ 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): 2
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL S1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus alba*	10	Y	FACU
2. *Acer saccharinum*	10	Y	FACW
3. *Populus deltoides*	10	Y	FAC
4. *Quercus rubra*	5	N	FACU
5. *Carpinus caroliniana*	5	N	FAC
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus alba*	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Elymus curvatus*	20	Y	FAC
2. *Carex grayi*	10	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	5	Y	FAC
2.			
3.			
4.			
	5	= 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: 85.71 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	25.00	x 2 =	50.00
FAC species	40.00	x 3 =	120.00
FACU species	15.00	x 4 =	60.00
UPL species	0.00	x 5 =	0.00
Column Totals:	80.00 (A)		230.00 (B)

Prevalence Index = B/A = 2.88

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.)

SOIL Sampling Point: WL S1

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 3/2	100						
2-8	10YR 3/2	85	10YR 5/6	15	C	M	SCL	Prominent redox.
8-12	10YR 3/2	50	10YR 5/6	30	C	M	SCL	Prominent redox.
			10YR 6/2	20	D	M		
12-20	10YR 6/2	60	10YR 5/6	40	C	M	COSL	Prominent redox.

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-04-05

Applicant/Owner: Liberty Power State: Michigan Sampling Point: Wetland T1

Investigator(s): Eric Rademacher , Ernest Schenk Section, Township, Range: sec 29 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.175894 Long: -82.850748 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): 3
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:
Ponding from recent rain

VEGETATION – Use scientific names of plants. Sampling Point: Wetland T1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	1	N	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	1 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix sp.*	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Apocynum cannabinum*	30	Y	FAC
2. *Symphyotrichum lateriflorum*	20	Y	FAC
3. *Epilobium ciliatum*	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	10.00	x 2 =	20.00
FAC species	51.00	x 3 =	153.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	61.00 (A)		173.00 (B)

Prevalence Index = B/A = 2.84

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.)

Out of growing season

SOIL

Sampling Point: Wetland T1

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
0-18	10YR 2/2	100					MMI	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-04-05

Applicant/Owner: Liberty Power State: Michigan Sampling Point: Wetland T2

Investigator(s): Eric Rademacher , Ernest Schenk Section, Township, Range: sec 29 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.175993 Long: -82.846851 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PEM

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): 3
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

Ponding from recent rain, farmed portion is sparsely vegetated

VEGETATION – Use scientific names of plants.

Sampling Point: Wetland T2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	5	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix interior*	15	Y	FACW
2. *Cornus amomum*	5	Y	FACW
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex lacustris*	20	Y	OBL
2. *Symphyotrichum lateriflorum*	10	Y	FAC
3. *Apocynum cannabinum*	10	Y	FAC
4. *Phalaris arundinacea*	10	Y	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20.00	x 1 =	20.00
FACW species	30.00	x 2 =	60.00
FAC species	25.00	x 3 =	75.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	75.00 (A)		155.00 (B)

Prevalence Index = B/A = 2.07

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.)

Out of growing season

SOIL

Sampling Point: Wetland T2

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
0-18	10YR 2/2	100					MMI	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-04-05

Applicant/Owner: Liberty Power State: Michigan Sampling Point: Wetland T3

Investigator(s): Eric Rademacher , Ernest Schenk Section, Township, Range: sec 29 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.176000 Long: -82.845886 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): 3
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:
Ponding from recent rain, farmed portion is sparsely vegetated

VEGETATION – Use scientific names of plants.

Sampling Point: Wetland T3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex lacustris*	5	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5.00	x 1 =	5.00
FACW species	0.00	x 2 =	0.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	5.00 (A)		5.00 (B)

Prevalence Index = B/A = 1.0

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.)

Out of growing season

SOIL

Sampling Point: Wetland T3

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
0-18	10YR 2/2	100					MMI	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-04-05

Applicant/Owner: Liberty Power State: Michigan Sampling Point: Wetland T4

Investigator(s): Ernest Schenk , Eric Rademacher Section, Township, Range: sec 29 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.175095 Long: -82.846045 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PEM/PSS

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): 3
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

Ponding from recent rain, farmed portion is sparsely vegetated

VEGETATION – Use scientific names of plants.

Sampling Point: Wetland T4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	75	Y	FACW
2. *Cornus amomum*	10	N	FACW
3.			
4.			
5.			
6.			
7.			
	85	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Calamagrostis canadensis*	20	Y	OBL
2. *Symphyotrichum lateriflorum*	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		= 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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20.00	x 1 =	20.00
FACW species	95.00	x 2 =	190.00
FAC species	10.00	x 3 =	30.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		240.00 (B)

Prevalence Index = B/A = 1.92

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.)

Out of growing season

SOIL

Sampling Point: Wetland T4

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
0-18	10YR 2/2	100					MMI	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-04-05

Applicant/Owner: Liberty Power State: Michigan Sampling Point: Wetland T5

Investigator(s): Ernest Schenk , Eric Rademacher Section, Township, Range: sec 29 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.174590 Long: -82.845915 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PEM

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): 3
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

Ponding from recent rain, sparsely vegetated

VEGETATION – Use scientific names of plants.

Sampling Point: Wetland T5

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Barbarea vulgaris*	5	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	5.00	x 3 =	15.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	5.00 (A)		15.00 (B)

Prevalence Index = B/A = 3.0

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.)

Out of growing season

SOIL

Sampling Point: Wetland T5

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
0-18	10YR 2/2	100					MMI	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-04-05

Applicant/Owner: Liberty Power State: Michigan Sampling Point: Wetland T6

Investigator(s): Ernest Schenk , Eric Rademacher Section, Township, Range: sec 29 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.173936 Long: -82.857417 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification:

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PSS/PEM

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): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wetland T6

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	50	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	50 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex lacustris*	20	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20.00	x 1 =	20.00
FACW species	0.00	x 2 =	0.00
FAC species	50.00	x 3 =	150.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	70.00 (A)		170.00 (B)

Prevalence Index = B/A = 2.43

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.)

Out of growing season

SOIL

Sampling Point: Wetland T6

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
0-18	10YR 2/2	100					MMI	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-04-05

Applicant/Owner: Liberty Power State: Michigan Sampling Point: Wetland T7

Investigator(s): Ernest Schenk , Eric Rademacher Section, Township, Range: sec 29 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.173917 Long: -82.858441 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification:

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): 3
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:
Ponding from recent rain

VEGETATION – Use scientific names of plants.

Sampling Point: Wetland T7

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	50	Y	FAC
2. *Rhamnus cathartica*	20	Y	FAC
3.			
4.			
5.			
6.			
7.			
	70 = Total Cover		
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 66.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	70.00	x 3 =	210.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	70.00 (A)		210.00 (B)

Prevalence Index = B/A = 3.0

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.)

Out of growing season

SOIL

Sampling Point: Wetland T7

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
0-18	10YR 2/2	100					MMI	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-04-05

Applicant/Owner: Liberty Power State: Michigan Sampling Point: Wetland T8

Investigator(s): Ernest Schenk , Eric Rademacher Section, Township, Range: sec 31 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.161003 Long: -82.861947 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PEM

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): 3
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

Ponding from recent rain

VEGETATION – Use scientific names of plants.

Sampling Point: Wetland T8

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Elymus repens*	30	Y	FACU
2. *Symphyotrichum lateriflorum*	20	Y	FAC
3. *Phalaris arundinacea*	20	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 66.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	20.00	x 2 =	40.00
FAC species	20.00	x 3 =	60.00
FACU species	30.00	x 4 =	120.00
UPL species	0.00	x 5 =	0.00
Column Totals:	70.00 (A)		220.00 (B)

Prevalence Index = B/A = 3.14

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.)

Out of growing season

SOIL

Sampling Point: Wetland T8

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
0-18	10YR 2/2	100					MMI	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-04-06

Applicant/Owner: Liberty State: Michigan Sampling Point: WL U1

Investigator(s): David Nigro Section, Township, Range: sec 26 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.179163 Long: -82.791751 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification:

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	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)

- ___ 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): 3	
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0	**Wetland Hydrology Present? Yes ✓ No _____**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL U1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	10	Y	FACW
2. *Populus deltoides*	10	Y	FAC
3. *Fagus grandifolia*	5	N	FACU
4. *Quercus alba*	5	N	FACU
5.			
6.			
7.			
	30	= Total Cover	

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

Herb Stratum (Plot size: 5)			
1. *Carex grayi*	15	Y	FACW
2. *Poa palustris*	10	Y	FACW
3. *Agrostis stolonifera*	2	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	27	= Total Cover	

Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		= 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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	37.00	x 2 =	74.00
FAC species	10.00	x 3 =	30.00
FACU species	10.00	x 4 =	40.00
UPL species	0.00	x 5 =	0.00
Column Totals:	57.00 (A)		144.00 (B)

Prevalence Index = B/A = 2.53

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.)

SOIL Sampling Point: WL U1

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 3/2	100					SCL	
3-8	10YR 3/2	95	10YR 5/6	5	C	M	SCL	Distinct redox.
8-18	10YR 5/6	50	10YR 6/2	30	D	M	CL	Mixed Matrix
			10YR 3/3	20	C	M	CL	Distinct redox.

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-04-06

Applicant/Owner: Liberty Power State: Michigan Sampling Point: Wetland W1

Investigator(s): Ernest Schenk , Eric Rademacher Section, Township, Range: sec 31 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.161001 Long: -82.860705 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PEM

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): 3
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

Ponding from recent rain

VEGETATION – Use scientific names of plants.

Sampling Point: Wetland W1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Elymus repens*	30	Y	FACU
2. *Phalaris arundinacea*	20	Y	FACW
3. *Symphyotrichum lateriflorum*	10	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	20.00	x 2 =	40.00
FAC species	10.00	x 3 =	30.00
FACU species	30.00	x 4 =	120.00
UPL species	0.00	x 5 =	0.00
Column Totals:	60.00 (A)		190.00 (B)

Prevalence Index = B/A = 3.17

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.)

Out of growing season; we assume vegetation to be hydric during growing season.

SOIL

Sampling Point: Wetland W1

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 4/1	100					L	
3-18	10YR 4/3	50	10YR 4/6	50	C	M	L	Distinct redox.

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-04-06

Applicant/Owner: Liberty Power State: Michigan Sampling Point: Wetland W2

Investigator(s): Ernest Schenk , Eric Rademacher Section, Township, Range: sec 32 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.165533 Long: -82.843035 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PEM

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): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wetland W2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Elymus repens*	30	Y	FACU
2. *Phalaris arundinacea*	20	Y	FACW
3. *Symphyotrichum lateriflorum*	10	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	20.00	x 2 =	40.00
FAC species	10.00	x 3 =	30.00
FACU species	30.00	x 4 =	120.00
UPL species	0.00	x 5 =	0.00
Column Totals:	60.00 (A)		190.00 (B)

Prevalence Index = B/A = 3.17

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.)

Out of growing season; assume vegetation to be hydric during growing season.

SOIL

Sampling Point: Wetland W2

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 4/1	100					L	
3-18	10YR 4/3	50	10YR 4/6	50	C	M	L	Distinct redox.

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2022-04-06

Applicant/Owner: Liberty Power State: Michigan Sampling Point: Wetland W3

Investigator(s): Ernest Schenk , Eric Rademacher Section, Township, Range: sec 28 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.181736 Long: -82.840329 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PEM

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): 3
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

Water drains through wetland

VEGETATION – Use scientific names of plants.

Sampling Point: Wetland W3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus amomum*	5	N	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Ranunculus sceleratus*	30	Y	OBL
2. *Barbarea vulgaris*	20	Y	FAC
3. *Phalaris arundinacea*	10	N	FACW
4. *Juncus effusus*	10	N	OBL
5. *Symphyotrichum lateriflorum*	5	N	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40.00	x 1 =	40.00
FACW species	15.00	x 2 =	30
FAC species	25.00	x 3 =	75.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	80.00 (A)		145 (B)

Prevalence Index = B/A = 1.81

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.)

Out of growing season

SOIL

Sampling Point: Wetland W3

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 4/1	100					L	
3-18	10YR 4/3	50	10YR 4/6	50	C	M	L	Distinct redox.

[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: Riverbed Wind City/County: Sanilac County Sampling Date: 2023-05-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AB1

Investigator(s): David Nigro Section, Township, Range: sec 36 T009N R015E

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

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.169212 Long: -82.657541 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✔	No _____	

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

PSS wetland to the north, transitions to PFO with Salix nigra, Quercus bicolor, and Acer saccharinum present.

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): 2
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Spiraea alba*	65	Y	FACW
2. *Salix nigra*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	115.00	x 2 =	230.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		240.00 (B)

Prevalence Index = B/A = 1.92

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.)

SOIL Sampling Point: WL AB1

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 2/2						MUCK	
2-12	10YR 6/2	80	10YR 5/6	20	C	M/PL	SL	
12-18	10YR 6/2	75	10YR 5/6	25				

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-07

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AC3

Investigator(s): David Nigro, Ryan Workmen Section, Township, Range: sec 18 T009N R014E

Landform (hillslope, terrace, etc.): Dip Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.207824 Long: -82.872855 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

Remarks: (Explain alternative procedures here or in a separate report.)
PEM ditch along edge of a wooded lot

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AC3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex lupulina*	25	Y	OBL
2. *Juncus torreyi*	10	Y	FACW
3. *Typha angustifolia*	10	Y	OBL
4. *Plantago major*	5	N	FACU
5. *Taraxacum officinale*	5	N	FACU
6. *Parthenocissus quinquefolia*	5	N	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	60.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	35.00	x 1 =	35.00
FACW species	10.00	x 2 =	20.00
FAC species	0.00	x 3 =	0.00
FACU species	15.00	x 4 =	60.00
UPL species	0.00	x 5 =	0.00
Column Totals:	60.00 (A)		115.00 (B)

Prevalence Index = B/A = 1.92

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.)

SOIL Sampling Point: WL AC3

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 3/4						CL	
3-10	10YR 3/4	75	10YR 6/2	20	C	M	CL	
			10YR 6/4	5	C	M	CL	
10-18	10YR 4/3	80	10YR 5/2	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)
- ___ 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:

PEM linear wetland between field and wood lot

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-07

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AC4

Investigator(s): David Nigro, Ryan Workmen Section, Township, Range: sec 18 T009N R014E

Landform (hillslope, terrace, etc.): Dip Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.207567 Long: -82.873368 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PFO depression within wooded lot

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AC4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	40	Y	FACU
2. *Ulmus americana*	35	Y	FACW
3.			
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Juncus torreyi*	10	Y	FACW
2. *Parthenocissus quinquefolia*	5	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	45.00	x 2 =	90.00
FAC species	0.00	x 3 =	0.00
FACU species	45.00	x 4 =	180.00
UPL species	0.00	x 5 =	0.00
Column Totals:	90.00 (A)		270.00 (B)

Prevalence Index = B/A = 3.0

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.)

SOIL Sampling Point: WL AC4

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 3/4						CL	
3-10	10YR 3/4	75	10YR 6/2	20	C	M	CL	
			10YR 6/4	5	C	M	CL	
10-18	10YR 4/3	80	10YR 5/2	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)
- ___ 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:

PEM linear wetland between field and wood lot

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Riverbed Wind City/County: Sanilac County Sampling Date: 2023-05-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AB1

Investigator(s): David Nigro Section, Township, Range: sec 36 T009N R015E

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

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.169212 Long: -82.657541 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation , Soil , or Hydrology 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:

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

PSS wetland to the north, transitions to PFO with Salix nigra, Quercus bicolor, and Acer saccharinum present.

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): 2
Water Table Present?	Yes ✔	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Spiraea alba*	65	Y	FACW
2. *Salix nigra*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	115.00	x 2 =	230.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		240.00 (B)

Prevalence Index = B/A = 1.92

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.)

SOIL

Sampling Point: WL AB1

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 2/2						MUCK	
2-12	10YR 6/2	80	10YR 5/6	20	C	M/PL	SL	
12-18	10YR 6/2	75	10YR 5/6	25				

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-09

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AD3

Investigator(s): Davud Nigro, Bryce Minock Section, Township, Range: sec 29 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-5

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.183133 Long: -82.849690 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PEM Depression

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AD3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tilia americana*	20	Y	FACU
2. *Ulmus americana*	10	Y	FACW
3. *Fraxinus pennsylvanica*	5	N	FACW
4.			
5.			
6.			
7.			
	35.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex crinita*	25	Y	OBL
2. *Alopecurus pratensis*	10	Y	FAC
3. *Carex gracillima*	10	Y	FACU
4. *Carex scoparia*	5	N	FACW
5. *Carex vulpinoidea*	5	N	OBL
6. *Agrimonia parviflora*	5	N	FAC
7. *Erigeron philadelphicus*	5	N	FAC
8.			
9.			
10.			
11.			
12.			
	65.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25.00	x 1 =	25.00
FACW species	35.00	x 2 =	70.00
FAC species	10.00	x 3 =	30.00
FACU species	30.00	x 4 =	120.00
UPL species	0.00	x 5 =	0.00
Column Totals:	100.00 (A)		245.00 (B)

Prevalence Index = B/A = 2.45

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.)

SOIL Sampling Point: WL AD3

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	10YR 3/2	100					CL	
4-18	10YR 3/2	80	10YR 5/6	20	C	M	CL	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-09

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AD4

Investigator(s): Bryce Minock, Davud Nigro Section, Township, Range: sec 29 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.183084 Long: -82.845950 Datum: WGS84

Soil Map Unit Name: Marlette loam, 2 to 6 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

Large PSS depression

HYDROLOGY

Wetland Hydrology Indicators:

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

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	✓ Drainage Patterns (B10)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Moss Trim Lines (B16)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Dry-Season Water Table (C2)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	✓ Crayfish Burrows (C8)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Saturation Visible on Aerial Imagery (C9)
___ Drift Deposits (B3)	✓ Presence of Reduced Iron (C4)	___ Stunted or Stressed Plants (D1)
✓ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Geomorphic Position (D2)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Shallow Aquitard (D3)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	___ Microtopographic Relief (D4)
___ Sparsely Vegetated Concave Surface (B8)		✓ FAC-Neutral Test (D5)

Secondary Indicators (minimum of two required)

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AD4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	10	Y	FAC
2. *Fraxinus pennsylvanica*	5	Y	FACW
3.			
4.			
5.			
6.			
7.			
	15.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex scoparia*	35	Y	FACW
2. *Poa palustris*	10	Y	FACW
3. *Carex lupulina*	10	Y	OBL
4. *Poa annua*	10	Y	FACU
5. *Solidago rugosa*	5	N	FAC
6. *Agrimonia parviflora*	5	N	FAC
7. *Agrostis stolonifera*	5	N	FACW
8.			
9.			
10.			
11.			
12.			
	80.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = 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: 83.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	55.00	x 2 =	110.00
FAC species	20.00	x 3 =	60.00
FACU species	10.00	x 4 =	40.00
UPL species	0.00	x 5 =	0.00
Column Totals:	95.00 (A)		220.00 (B)

Prevalence Index = B/A = 2.32

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.)

SOIL Sampling Point: WL AD4

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	10YR 3/1	100						
4-18	10YR 3/1	80	10YR 5/6	20	C	M	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-07

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AF1

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 36 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.167530 Long: -82.769196 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

Remarks: (Explain alternative procedures here or in a separate report.)
Somewhat mesic PFO depression

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AF1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	60	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	60.0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus amomum*	20	Y	FACW
2. *Viburnum lentago*	5	Y	FAC
3.			
4.			
5.			
6.			
7.			
	25.0	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Urtica dioica*	15	Y	FAC
2. *Phalaris arundinacea*	5	Y	FACW
3. *Carex tribuloides*	5	Y	FACW
4. *Glyceria striata*	5	Y	OBL
5. *Carex interior*	5	Y	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35.0	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	90.00	x 2 =	180.00
FAC species	20.00	x 3 =	60.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	120.00 (A)		250.00 (B)

Prevalence Index = B/A = 2.08

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.)

SOIL

Sampling Point: WL AF1

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
0-18	10YR 4/3	92	10YR 7/8	8	C	M/PL	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-07

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AF2

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 35 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.170375 Long: -82.786400 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AF2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Urtica dioica*	55	Y	FAC
2. *Phalaris arundinacea*	50	Y	FACW
3. *Galium aparine*	5	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	110.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	50.00	x 2 =	100.00
FAC species	55.00	x 3 =	165.00
FACU species	5.00	x 4 =	20.00
UPL species	0.00	x 5 =	0.00
Column Totals:	110.00 (A)		285.00 (B)

Prevalence Index = B/A = 2.59

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.)

SOIL

Sampling Point: WL AF2

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
0-18	10YR 4/3	92	10YR 7/8	8	C	M/PL	CL	

[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: Riverbed Wind City/County: Sanilac County Sampling Date: 2023-05-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AB1

Investigator(s): David Nigro Section, Township, Range: sec 36 T009N R015E

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

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.169212 Long: -82.657541 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation , Soil , or Hydrology 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:

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

PSS wetland to the north, transitions to PFO with Salix nigra, Quercus bicolor, and Acer saccharinum present.

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): 2
Water Table Present?	Yes ✔	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Spiraea alba*	65	Y	FACW
2. *Salix nigra*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	115.00	x 2 =	230.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		240.00 (B)

Prevalence Index = B/A = 1.92

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.)

SOIL

Sampling Point: WL AB1

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 2/2						MUCK	
2-12	10YR 6/2	80	10YR 5/6	20	C	M/PL	SL	
12-18	10YR 6/2	75	10YR 5/6	25				

[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: Riverbed Wind City/County: Sanilac County Sampling Date: 2023-05-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AB1

Investigator(s): David Nigro Section, Township, Range: sec 36 T009N R015E

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

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.169212 Long: -82.657541 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation , Soil , or Hydrology 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:

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

PSS wetland to the north, transitions to PFO with Salix nigra, Quercus bicolor, and Acer saccharinum present.

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): 2
Water Table Present?	Yes ✔	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Spiraea alba*	65	Y	FACW
2. *Salix nigra*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	115.00	x 2 =	230.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		240.00 (B)

Prevalence Index = B/A = 1.92

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.)

SOIL

Sampling Point: WL AB1

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 2/2						MUCK	
2-12	10YR 6/2	80	10YR 5/6	20	C	M/PL	SL	
12-18	10YR 6/2	75	10YR 5/6	25				

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-09

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AH2

Investigator(s): Ryan Workman, Cameron Moody Section, Township, Range: sec 20 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.188407 Long: -82.852562 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
Small PEM depression w/in hayfield

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AH2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix interior*	30	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	30.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2. *Equisetum pratense*	15	N	FACW
3. *Carex granularis*	5	N	FACW
4. *Cornus racemosa*	5	N	FAC
5. *Carex vulpinoidea*	5	N	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Toxicodendron radicans*	15	Y	FAC
2.			
3.			
4.			
	15.0 = 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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5.00	x 1 =	5.00
FACW species	100.00	x 2 =	200.00
FAC species	20.00	x 3 =	60.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		265.00 (B)

Prevalence Index = B/A = 2.12

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.)

SOIL

Sampling Point: WL AH2

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	10YR 3/2	100					SL	
4-18	10YR 3/2	90	10YR 5/6	10	C	M	SL	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AI1

Investigator(s): David Nigro, Ryan Workman, Owen Atkins Section, Township, Range: sec 12 T009N R014E

Landform (hillslope, terrace, etc.): Dip Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.222488 Long: -82.766838 Datum: WGS84

Soil Map Unit Name: Parkhill loam and mucky loam, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PFO depression within wooded lot

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AI1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	35	Y	OBL
2. *Populus deltoides*	15	Y	FAC
3. *Rhamnus cathartica*	15	Y	FAC
4. *Populus tremuloides*	10	N	FAC
5.			
6.			
7.			
	75.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	15	Y	FAC
2. *Populus deltoides*	5	Y	FAC
3.			
4.			
5.			
6.			
7.			
	20.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Solidago rugosa*	50	Y	FAC
2. *Carex lupulina*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Parthenocissus inserta*	15	Y	FACU
2.			
3.			
4.			
	15.0 = 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: 85.71 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45.00	x 1 =	45.00
FACW species	0.00	x 2 =	0.00
FAC species	110.00	x 3 =	330.00
FACU species	15.00	x 4 =	60.00
UPL species	0.00	x 5 =	0.00
Column Totals:	170.00 (A)		435.00 (B)

Prevalence Index = B/A = 2.56

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.)

SOIL Sampling Point: WL AI1

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 2/1	100					SCL	
6-18	10YR 5/2	90	10YR 5/6	10	C	M/PL	SCL	

[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: Riverbed Wind City/County: Sanilac County Sampling Date: 2023-05-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AB1

Investigator(s): David Nigro Section, Township, Range: sec 36 T009N R015E

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

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.169212 Long: -82.657541 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation , Soil , or Hydrology 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:

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

PSS wetland to the north, transitions to PFO with Salix nigra, Quercus bicolor, and Acer saccharinum present.

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): 2
Water Table Present?	Yes ✔	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Spiraea alba*	65	Y	FACW
2. *Salix nigra*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	115.00	x 2 =	230.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		240.00 (B)

Prevalence Index = B/A = 1.92

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.)

SOIL

Sampling Point: WL AB1

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 2/2						MUCK	
2-12	10YR 6/2	80	10YR 5/6	20	C	M/PL	SL	
12-18	10YR 6/2	75	10YR 5/6	25				

[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: Riverbed Wind City/County: Sanilac County Sampling Date: 2023-05-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AB1

Investigator(s): David Nigro Section, Township, Range: sec 36 T009N R015E

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

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.169212 Long: -82.657541 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation , Soil , or Hydrology 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:

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

PSS wetland to the north, transitions to PFO with Salix nigra, Quercus bicolor, and Acer saccharinum present.

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): 2
Water Table Present?	Yes ✔	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Spiraea alba*	65	Y	FACW
2. *Salix nigra*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	115.00	x 2 =	230.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		240.00 (B)

Prevalence Index = B/A = 1.92

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.)

SOIL

Sampling Point: WL AB1

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 2/2						MUCK	
2-12	10YR 6/2	80	10YR 5/6	20	C	M/PL	SL	
12-18	10YR 6/2	75	10YR 5/6	25				

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-09

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AJ3

Investigator(s): Ryan Workman, Cameron Moody Section, Township, Range: sec 20 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.190064 Long: -82.856209 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes ✓ No _____	

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

PFO depression

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AJ3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	30	Y	FACW
2. *Populus deltoides*	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
	40.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	15	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	15.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Glyceria striata*	20	Y	OBL
2. *Phalaris arundinacea*	15	Y	FACW
3. *Carex lupulina*	10	N	OBL
4. *Carex crinita*	5	N	OBL
5. *Carex vulpinoidea*	5	N	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Toxicodendron radicans*	10	Y	FAC
2.			
3.			
4.			
	10.0 = 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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40.00	x 1 =	40.00
FACW species	60.00	x 2 =	120.00
FAC species	20.00	x 3 =	60.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	120.00 (A)		220.00 (B)

Prevalence Index = B/A = 1.83

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.)

SOIL Sampling Point: WL AJ3

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 3/2	100					SL	
8-	10YR 3/2	80	10YR 5/8	20	C	M	SL	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-09

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AJ4

Investigator(s): Ryan Workman, Cameron Moody Section, Township, Range: sec 20 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.190075 Long: -82.859301 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
Large PEM depression dominated by RCG

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AJ4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	70	Y	FACW
2. *Typha angustifolia*	30	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30.00	x 1 =	30.00
FACW species	70.00	x 2 =	140.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	100.00 (A)		170.00 (B)

Prevalence Index = B/A = 1.7

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.)

SOIL Sampling Point: WL AJ4

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 3/1	100					C	
6-18	10YR 3/1	80	10YR 5/8	20	C	M	C	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-07

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL BA1

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 27 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.189827 Long: -82.704116 Datum: WGS84

Soil Map Unit Name: Marlette silt loam and loam, 0 to 2 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL BA1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Typha angustifolia*	40	Y	OBL
2. *Equisetum arvense*	30	Y	FAC
3. *Poa pratensis*	20	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 66.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40.00	x 1 =	40.00
FACW species	0.00	x 2 =	0.00
FAC species	30.00	x 3 =	90.00
FACU species	20.00	x 4 =	80.00
UPL species	0.00	x 5 =	0.00
Column Totals:	90.00 (A)		210.00 (B)

Prevalence Index = B/A = 2.33

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.)

SOIL Sampling Point: WL BA1

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	10YR 3/2	100					CL	
4-18	10YR 3/2	95	10YR 6/8	5	C	M/PL	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-07

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL BA3

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 27 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.190872 Long: -82.699037 Datum: WGS84

Soil Map Unit Name: Alluvial land, poorly drained loams, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

Remarks: (Explain alternative procedures here or in a separate report.)
PEM/PSS/PFO depression

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL BA3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	30	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	30.0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	10	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10.0	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Carex lacustris*	60	Y	OBL
2. *Typha angustifolia*	20	Y	OBL
3. *Lythrum salicaria*	10	N	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90.0	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	90.00	x 1 =	90.00
FACW species	40.00	x 2 =	80.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	130.00 (A)		170.00 (B)

Prevalence Index = B/A = 1.31

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.)

SOIL

Sampling Point: WL BA3

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
0-18	10YR 3/2	90	10YR 6/8	10	C	M/PL	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-06

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL BB1

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 28 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.179645 Long: -82.832200 Datum: WGS84

Soil Map Unit Name: McBride sandy loam and Montcalm loamy sand, 0 to 3 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PEM/PSS depression

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): 1	
Water Table Present?	Yes ✓	No _____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0	**Wetland Hydrology Present? Yes ✓ No _____**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL BB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix interior*	30	Y	FACW
2. *Frangula alnus*	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
	40.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Typha angustifolia*	60	Y	OBL
2. *Poa palustris*	30	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60.00	x 1 =	60.00
FACW species	60.00	x 2 =	120.00
FAC species	10.00	x 3 =	30.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	130.00 (A)		210.00 (B)

Prevalence Index = B/A = 1.62

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.)

SOIL Sampling Point: WL BB1

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 3/2	100					CL	
2-18	10YR 2/2	90	10YR 5/6	10	C	M	CL	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-06

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL BB2

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 28 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.178526 Long: -82.831728 Datum: WGS84

Soil Map Unit Name: McBride sandy loam and Montcalm loamy sand, 0 to 3 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PEM/PSS depression

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL BB2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	10	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	10.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Frangula alnus*	25	Y	FAC
2. *Ulmus americana*	10	Y	FACW
3. *Salix interior*	10	Y	FACW
4. *Fraxinus pennsylvanica*	10	Y	FACW
5.			
6.			
7.			
	55.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	40	Y	FACW
2. *Poa pratensis*	30	Y	FACU
3. *Solidago gigantea*	15	N	FACW
4. *Carex stipata*	5	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = 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: 85.71 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15.00	x 1 =	15.00
FACW species	85.00	x 2 =	170.00
FAC species	25.00	x 3 =	75.00
FACU species	30.00	x 4 =	120.00
UPL species	0.00	x 5 =	0.00
Column Totals:	155.00 (A)		380.00 (B)

Prevalence Index = B/A = 2.45

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.)

SOIL Sampling Point: WL BB2

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	10YR 3/2	100					CL	
4-18	10YR 2/2	90	10YR 5/6	10	C	M	CL	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-06

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL BB3

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 28 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.178411 Long: -82.832060 Datum: WGS84

Soil Map Unit Name: McBride sandy loam and Montcalm loamy sand, 0 to 3 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PEM/PSS depression

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL BB3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Frangula alnus*	25	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	25.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2. *Urtica dioica*	10	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	50.00	x 2 =	100.00
FAC species	35.00	x 3 =	105.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	85.00 (A)		205.00 (B)

Prevalence Index = B/A = 2.41

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.)

SOIL Sampling Point: WL BB3

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	10YR 3/2	100					CL	
4-18	10YR 2/2	90	10YR 5/6	10	C	M	CL	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-06

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL BB4

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 28 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.174528 Long: -82.833913 Datum: WGS84

Soil Map Unit Name: Wallkill loam, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
PEM/PSS/PFO depression

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL BB4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	20	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	20.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix nigra*	10	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	10.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	90	Y	FACW
2. *Urtica dioica*	5	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30.00	x 1 =	30.00
FACW species	90.00	x 2 =	180.00
FAC species	5.00	x 3 =	15.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		225.00 (B)

Prevalence Index = B/A = 1.8

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.)

SOIL Sampling Point: WL BB4

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	10YR 3/2	100					CL	
4-18	10YR 2/2	90	10YR 5/6	10	C	M	CL	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-06

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL BB5

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 28 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.174489 Long: -82.831362 Datum: WGS84

Soil Map Unit Name: Marlette loam, 2 to 6 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation ✓, Soil _____, or Hydrology _____ 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: _____

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

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): _____

Wetland Hydrology Present? **Yes** ✓ **No** _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL BB5

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Poa pratensis*	10	Y	FACU
2. *Plantago lanceolata*	5	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	0.00	x 3 =	0.00
FACU species	15.00	x 4 =	60.00
UPL species	0.00	x 5 =	0.00
Column Totals:	15.00 (A)		60.00 (B)

Prevalence Index = B/A = 4.0

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.)

Disturbed vegetation / farmed area. Recently dry period

SOIL Sampling Point: WL BB5

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	10YR 3/2	100					CL	
4-18	10YR 2/2	90	10YR 5/6	10	C	M	CL	

[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: Riverbed Wind City/County: Sanilac County Sampling Date: 2023-05-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AB1

Investigator(s): David Nigro Section, Township, Range: sec 36 T009N R015E

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

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.169212 Long: -82.657541 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation , Soil , or Hydrology 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:

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

PSS wetland to the north, transitions to PFO with Salix nigra, Quercus bicolor, and Acer saccharinum present.

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): 2
Water Table Present?	Yes ✔	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Spiraea alba*	65	Y	FACW
2. *Salix nigra*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	115.00	x 2 =	230.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		240.00 (B)

Prevalence Index = B/A = 1.92

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.)

SOIL

Sampling Point: WL AB1

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 2/2						MUCK	
2-12	10YR 6/2	80	10YR 5/6	20	C	M/PL	SL	
12-18	10YR 6/2	75	10YR 5/6	25				

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-07

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL BD1

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 01 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.239406 Long: -82.659954 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: PFO1C

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
Rather mesic PFO depression in woodlot

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL BD1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	70	Y	FACW
2. *Acer saccharinum*	15	N	FACW
3.			
4.			
5.			
6.			
7.			
	85.0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Ulmus americana*	10	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10.0	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Parthenocissus quinquefolia*	20	Y	FACU
2. *Toxicodendron radicans*	20	Y	FAC
3. *Galium aparine*	10	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50.0	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	95.00	x 2 =	190.00
FAC species	20.00	x 3 =	60.00
FACU species	30.00	x 4 =	120.00
UPL species	0.00	x 5 =	0.00
Column Totals:	145.00 (A)		370.00 (B)

Prevalence Index = B/A = 2.55

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.)

SOIL Sampling Point: WL BD1

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	10YR 4/3	100					FSL	
4-18	10YR 4/3	70	10YR 6/8	10	C	M	FSL	
	10YR 7/6	20					FSL	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-07

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL BE1

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 12 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.225211 Long: -82.660588 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PEM depression

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL BE1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	40	Y	FACW
2. *Solidago gigantea*	15	Y	FACW
3. *Rubus allegheniensis*	10	N	FACU
4. *Carex lacustris*	10	N	OBL
5. *Phragmites australis*	5	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	60.00	x 2 =	120.00
FAC species	0.00	x 3 =	0.00
FACU species	10.00	x 4 =	40.00
UPL species	0.00	x 5 =	0.00
Column Totals:	80.00 (A)		170.00 (B)

Prevalence Index = B/A = 2.12

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.)

SOIL Sampling Point: WL BE1

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
0-18	10YR 4/3	50	10YR 5/8	20	C	M/PL	CL	
	10YR 7/3	30					CL	

[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: Riverbed Wind City/County: Sanilac County Sampling Date: 2023-05-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AB1

Investigator(s): David Nigro Section, Township, Range: sec 36 T009N R015E

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

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.169212 Long: -82.657541 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation , Soil , or Hydrology 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:

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

PSS wetland to the north, transitions to PFO with Salix nigra, Quercus bicolor, and Acer saccharinum present.

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): 2
Water Table Present?	Yes ✔	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Spiraea alba*	65	Y	FACW
2. *Salix nigra*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	115.00	x 2 =	230.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		240.00 (B)

Prevalence Index = B/A = 1.92

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.)

SOIL

Sampling Point: WL AB1

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 2/2						MUCK	
2-12	10YR 6/2	80	10YR 5/6	20	C	M/PL	SL	
12-18	10YR 6/2	75	10YR 5/6	25				

[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: Riverbed Wind City/County: Sanilac County Sampling Date: 2023-05-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AB1

Investigator(s): David Nigro Section, Township, Range: sec 36 T009N R015E

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

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.169212 Long: -82.657541 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation , Soil , or Hydrology 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:

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

PSS wetland to the north, transitions to PFO with Salix nigra, Quercus bicolor, and Acer saccharinum present.

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): 2
Water Table Present?	Yes ✔	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Spiraea alba*	65	Y	FACW
2. *Salix nigra*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	115.00	x 2 =	230.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		240.00 (B)

Prevalence Index = B/A = 1.92

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.)

SOIL

Sampling Point: WL AB1

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 2/2						MUCK	
2-12	10YR 6/2	80	10YR 5/6	20	C	M/PL	SL	
12-18	10YR 6/2	75	10YR 5/6	25				

[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: Riverbed Wind City/County: Sanilac County Sampling Date: 2023-05-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AB1

Investigator(s): David Nigro Section, Township, Range: sec 36 T009N R015E

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

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.169212 Long: -82.657541 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation , Soil , or Hydrology 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:

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

PSS wetland to the north, transitions to PFO with Salix nigra, Quercus bicolor, and Acer saccharinum present.

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): 2
Water Table Present?	Yes ✔	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Spiraea alba*	65	Y	FACW
2. *Salix nigra*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	115.00	x 2 =	230.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		240.00 (B)

Prevalence Index = B/A = 1.92

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.)

SOIL

Sampling Point: WL AB1

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 2/2						MUCK	
2-12	10YR 6/2	80	10YR 5/6	20	C	M/PL	SL	
12-18	10YR 6/2	75	10YR 5/6	25				

[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: Riverbed Wind City/County: Sanilac County Sampling Date: 2023-05-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AB1

Investigator(s): David Nigro Section, Township, Range: sec 36 T009N R015E

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

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.169212 Long: -82.657541 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation , Soil , or Hydrology 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:

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

PSS wetland to the north, transitions to PFO with Salix nigra, Quercus bicolor, and Acer saccharinum present.

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): 2
Water Table Present?	Yes ✔	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Spiraea alba*	65	Y	FACW
2. *Salix nigra*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	115.00	x 2 =	230.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		240.00 (B)

Prevalence Index = B/A = 1.92

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.)

SOIL

Sampling Point: WL AB1

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 2/2						MUCK	
2-12	10YR 6/2	80	10YR 5/6	20	C	M/PL	SL	
12-18	10YR 6/2	75	10YR 5/6	25				

[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: Riverbed Wind City/County: Sanilac County Sampling Date: 2023-05-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AB1

Investigator(s): David Nigro Section, Township, Range: sec 36 T009N R015E

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

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.169212 Long: -82.657541 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation , Soil , or Hydrology 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:

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

PSS wetland to the north, transitions to PFO with Salix nigra, Quercus bicolor, and Acer saccharinum present.

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): 2
Water Table Present?	Yes ✔	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Spiraea alba*	65	Y	FACW
2. *Salix nigra*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	115.00	x 2 =	230.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		240.00 (B)

Prevalence Index = B/A = 1.92

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.)

SOIL

Sampling Point: WL AB1

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 2/2						MUCK	
2-12	10YR 6/2	80	10YR 5/6	20	C	M/PL	SL	
12-18	10YR 6/2	75	10YR 5/6	25				

[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: Riverbed Wind City/County: Sanilac County Sampling Date: 2023-05-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL AB1

Investigator(s): David Nigro Section, Township, Range: sec 36 T009N R015E

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

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.169212 Long: -82.657541 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation , Soil , or Hydrology 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:

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

PSS wetland to the north, transitions to PFO with Salix nigra, Quercus bicolor, and Acer saccharinum present.

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): 2
Water Table Present?	Yes ✔	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL AB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Spiraea alba*	65	Y	FACW
2. *Salix nigra*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	115.00	x 2 =	230.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		240.00 (B)

Prevalence Index = B/A = 1.92

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.)

SOIL

Sampling Point: WL AB1

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 2/2						MUCK	
2-12	10YR 6/2	80	10YR 5/6	20	C	M/PL	SL	
12-18	10YR 6/2	75	10YR 5/6	25				

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-05

Applicant/Owner: Liberty State: Michigan Sampling Point: WL CA1

Investigator(s): K. Yantz, R. Drenth -Atwell, LLC Section, Township, Range: sec 23 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.206228 Long: -82.675389 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PFO depression between ag fields, flows into WC CA5

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL CA1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	50	Y	FACW
2. *Quercus bicolor*	25	Y	FACW
3. *Acer saccharinum*	15	N	FACW
4. *Ulmus americana*	10	N	FACW
5.			
6.			
7.			
	100.0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	15	Y	FACW
2. *Viburnum lentago*	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
	25.0	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	20	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20.0	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0	= 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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	135.00	x 2 =	270.00
FAC species	10.00	x 3 =	30.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	145.00 (A)		300.00 (B)

Prevalence Index = B/A = 2.07

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.)

SOIL Sampling Point: WL CA1

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	10YR 3/3	100					SL	
4-18	10YR 3/2	80	10YR 4/6	20	C	M	SL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-05

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL CB1

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 21 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.188213 Long: -82.838694 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL CB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix interior*	15	Y	FACW
2. *Elaeagnus angustifolia*	3	N	FACU
3.			
4.			
5.			
6.			
7.			
	18.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Solidago gigantea*	40	Y	FACW
2. *Juncus tenuis*	15	Y	FAC
3. *Taraxacum officinale*	10	N	FACU
4. *Equisetum arvense*	10	N	FAC
5. *Carex stipata*	10	N	OBL
6. *Cypripedium parviflorum*	5	N	FAC
7. *Carex vulpinoidea*	3	N	OBL
8.			
9.			
10.			
11.			
12.			
	93.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	13.00	x 1 =	13.00
FACW species	55.00	x 2 =	110.00
FAC species	30.00	x 3 =	90.00
FACU species	13.00	x 4 =	52.00
UPL species	0.00	x 5 =	0.00
Column Totals:	111.00 (A)		265.00 (B)

Prevalence Index = B/A = 2.39

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.)

SOIL Sampling Point: WL CB1

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	10YR 2/2	100					CL	
4-18	10YR 2/2	92	10YR 5/6	8	C	M/PL	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-05

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL CB2

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 35 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 8-15

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.173999 Long: -82.790022 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL CB2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex lacustris*	70	Y	OBL
2. *Phalaris arundinacea*	25	Y	FACW
3. *Ambrosia psilostachya*	5	N	FAC
4. *Poa pratensis*	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70.00	x 1 =	70.00
FACW species	25.00	x 2 =	50.00
FAC species	5.00	x 3 =	15.00
FACU species	5.00	x 4 =	20.00
UPL species	0.00	x 5 =	0.00
Column Totals:	105.00 (A)		155.00 (B)

Prevalence Index = B/A = 1.48

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.)

SOIL Sampling Point: WL CB2

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	10YR 2/2	100					CL	
4-18	10YR 2/2	92	10YR 5/6	8	C	M/PL	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-05

Applicant/Owner: Liberty State: Michigan Sampling Point: WL CE1

Investigator(s): K. Yantz, R. Drenth, B. Minock-Atwell, LLC Section, Township, Range: sec 25 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.181814 Long: -82.650787 Datum: WGS84

Soil Map Unit Name: Melita and Arenac loamy sands, 0 to 2 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PEM depression within 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 ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? **Yes** ✓ **No** _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL CE1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Triticum aestivum*	10	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 0.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	10.00	x 5 =	50.00
Column Totals:	10.00 (A)		50.00 (B)

Prevalence Index = B/A = 5.0

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.)

90% bare soils

SOIL Sampling Point: WL CE1

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	10YR 3/3	100					SL	
4-6	10YR 3/2	90	10YR 4/6	10	C	M	SL	
6-18	10YR 3/2	80	10YR 4/6	20	C	M	SL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-07-10

Applicant/Owner: Liberty State: Michigan Sampling Point: WL DA1

Investigator(s): K. Yantz, O. Atkins -Atwell, LLC Section, Township, Range: sec 08 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.222905 Long: -82.739523 Datum: WGS84

Soil Map Unit Name: Wallkill loam, 0 to 2 percent slopes NWI classification: None

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

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

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

PFO PSS depression

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): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DA1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	50	Y	OBL
2. *Acer negundo*	15	Y	FAC
3. *Fraxinus pennsylvanica*	2	N	FACW
4.			
5.			
6.			
7.			
	67.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	10	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	60	Y	FACW
2. *Solidago gigantea*	30	Y	FACW
3. *Urtica dioica*	10	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = 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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50.00	x 1 =	50.00
FACW species	92.00	x 2 =	184.00
FAC species	35.00	x 3 =	105.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	177.00 (A)		339.00 (B)

Prevalence Index = B/A = 1.92

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.)

PSS area contains gray dogwood and sandbar willow

SOIL Sampling Point: WL DA1

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 5/3	100					SIL	
5-8	10YR 2/1	100					MUCK	
8-18	10YR 5/3	50	10YR 2/1	50	D	M	MUCK	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-07-10

Applicant/Owner: Liberty State: Michigan Sampling Point: WL DA2

Investigator(s): K. Yantz, O. Atkins -Atwell, LLC Section, Township, Range: sec 08 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.222752 Long: -82.741254 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PEM OW depression

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): 3
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DA2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Typha latifolia*	80	Y	OBL
2. *Juncus effusus*	20	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100.00	x 1 =	100.00
FACW species	0.00	x 2 =	0.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	100.00 (A)		100.00 (B)

Prevalence Index = B/A = 1.0

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.)

PEM fringe of OW

SOIL Sampling Point: WL DA2

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 5/2	100					SIL	
3-18	10YR 5/2	80	10YR 4/6	20	C	M	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-07-10

Applicant/Owner: Liberty State: Michigan Sampling Point: WL DA3

Investigator(s): K. Yantz, O. Atkins -Atwell, LLC Section, Township, Range: sec 17 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.216902 Long: -82.736210 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes ✔ No _____	

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

PFO matrix

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): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DA3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	80	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	80.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Lindera benzoin*	30	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	30.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex lupulina*	40	Y	OBL
2. *Onoclea sensibilis*	30	Y	FACW
3. *Carex gynandra*	15	N	OBL
4. *Juncus effusus*	15	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70.00	x 1 =	70.00
FACW species	140.00	x 2 =	280.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	210.00 (A)		350.00 (B)

Prevalence Index = B/A = 1.67

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.)

SOIL Sampling Point: WL DA3

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 3/2	100					SL	
6-18	10YR 3/2	90	10YR 4/4	10	C	M	SL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-07-10

Applicant/Owner: Liberty State: Michigan Sampling Point: WL DB1

Investigator(s): B. Gainer, B. Minock - Atwell, LLC Section, Township, Range: sec 20 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.200991 Long: -82.845618 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: _____

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

Small PFO depression

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): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DB1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	50	Y	FACW
2. *Acer saccharinum*	30	Y	FACW
3. *Quercus bicolor*	20	Y	FACW
4.			
5.			
6.			
7.			
	100.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	20	Y	FAC
2. *Fraxinus pennsylvanica*	15	Y	FACW
3.			
4.			
5.			
6.			
7.			
	35.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Parthenocissus quinquefolia*	30	Y	FACU
2. *Fraxinus pennsylvanica*	20	Y	FACW
3. *Carex grayi*	10	N	FACW
4. *Glyceria striata*	5	N	OBL
5. *Carex cristatella*	5	N	FACW
6. *Carex vulpinoidea*	5	N	OBL
7.			
8.			
9.			
10.			
11.			
12.			
	75.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Parthenocissus quinquefolia*	10	Y	FACU
2. *Toxicodendron radicans*	5	Y	FAC
3.			
4.			
	15.0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 77.78 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	150.00	x 2 =	300.00
FAC species	25.00	x 3 =	75.00
FACU species	40.00	x 4 =	160.00
UPL species	0.00	x 5 =	0.00
Column Totals:	225.00 (A)		545.00 (B)

Prevalence Index = B/A = 2.42

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.)

SOIL Sampling Point: WL DB1

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 3/2	90	10YR 4/6	10	C	M	CL	
8-18	10YR 5/1	95	10YR 3/4	5	C	M	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-07-10

Applicant/Owner: Liberty State: Michigan Sampling Point: WL DB2

Investigator(s): B. Gainer, B. Minock - Atwell, LLC Section, Township, Range: sec 20 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.198658 Long: -82.847490 Datum: WGS84

Soil Map Unit Name: Marlette silt loam and loam, 2 to 6 percent slopes, slightly eroded NWI classification: _____

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

Remarks: (Explain alternative procedures here or in a separate report.)
PEM depression confined to edge of 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 ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Small portions of stunted/stressed wheat

VEGETATION – Use scientific names of plants. Sampling Point: WL DB2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Scirpus pendulus*	75	Y	OBL
2. *Juncus torreyi*	20	N	FACW
3. *Symphyotrichum puniceum*	10	N	OBL
4. *Solidago gigantea*	10	N	FACW
5. *Bidens frondosa*	10	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	125.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	85.00	x 1 =	85.00
FACW species	40.00	x 2 =	80.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	125.00 (A)		165.00 (B)

Prevalence Index = B/A = 1.32

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.)

SOIL Sampling Point: WL DB2

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 3/1	98	10YR 3/4	2	C	M	CL	
3-8	10YR 4/1	96	10YR 3/4	4	C	M	SCL	
8-18	10YR 5/1	95	10YR 4/6	5	C	M	SCL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-07-10

Applicant/Owner: Liberty State: Michigan Sampling Point: WL DB3

Investigator(s): B. Gainer, B. Minock - Atwell, LLC Section, Township, Range: sec 20 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.197842 Long: -82.852387 Datum: WGS84

Soil Map Unit Name: Parkhill loam and clay loam, 0 to 2 percent slopes NWI classification: _____

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

Small PEM depression in ag field planted to soybeans

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): 1
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DB3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Glycine max*	2	N	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	2.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 0 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	2.00	x 5 =	10.00
Column Totals:	2.00 (A)		10.00 (B)

Prevalence Index = B/A = 5.0

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.)

98% bare ground and dead soybean sprouts

SOIL Sampling Point: WL DB3

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	10YR 3/1	98	10YR 3/6	2	C	M	CL	
4-18	10YR 6/1	80	10YR 4/4	20	C	M	C	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-07-11

Applicant/Owner: Liberty State: Michigan Sampling Point: WL DB4

Investigator(s): B. Gainer, B. Minock - Atwell, LLC Section, Township, Range: sec 20 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.192218 Long: -82.852018 Datum: WGS84

Soil Map Unit Name: Parkhill loam, 0 to 1 percent slopes NWI classification:

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

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): 0
Water Table Present?	Yes ✔	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DB4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	40	Y	FACW
2. *Fraxinus pennsylvanica*	20	Y	FACW
3. *Ulmus americana*	20	Y	FACW
4.			
5.			
6.			
7.			
	80.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	80	Y	FACW
2. *Rhamnus cathartica*	15	N	FAC
3.			
4.			
5.			
6.			
7.			
	95.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Fraxinus pennsylvanica*	15	Y	FACW
2. *Toxicodendron radicans*	15	Y	FAC
3. *Menispermum canadense*	5	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	5	Y	FAC
2.			
3.			
4.			
	5.0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	175.00	x 2 =	350.00
FAC species	40.00	x 3 =	120.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	215.00 (A)		470.00 (B)

Prevalence Index = B/A = 2.19

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.)

SOIL Sampling Point: WL DB4

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	10YR 3/2	98	10YR 3/6	2	C	M	CL	
4-18	10YR 6/1	951	10YR 5/6	5	C	M	SC	

[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:

Some pea gravel

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Riverbend City/County: Sanilac County Sampling Date: 2023-07-10

Applicant/Owner: Liberty Wind State: Michigan Sampling Point: WL DC2

Investigator(s): R.Drenth, J. Way Section, Township, Range: sec 19 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.197006 Long: -82.872252 Datum: WGS84

Soil Map Unit Name: Linwood and Timakwa mucks, 0 to 2 percent slopes NWI classification: _____

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PFO depression

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): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DC2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	95	Y	FACW
2. *Fraxinus pennsylvanica*	10	N	FACW
3.			
4.			
5.			
6.			
7.			
	105.0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		

Woody Vine Stratum (Plot size: 30)			
1.			
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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	105.00	x 2 =	210.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	105.00 (A)		210.00 (B)

Prevalence Index = B/A = 2.0

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.)

SOIL Sampling Point: WL DC2

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
0-18	10YR 5/1	100					C	

[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: Riverbend City/County: Sampling Date: 2023-07-10

Applicant/Owner: Liberty Wind State: Sampling Point: WL DC3

Investigator(s): R. Drenth, J. Way Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.222648 Long: -82.746869 Datum: WGS84

Soil Map Unit Name: None NWI classification:

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

Are Vegetation ____, Soil ____, or Hydrology ____ 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:

Remarks: (Explain alternative procedures here or in a separate report.)
PEM/OW 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 ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DC3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Eleocharis aestuum*	70	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70.00	x 1 =	70.00
FACW species	0.00	x 2 =	0.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	70.00 (A)		70.00 (B)

Prevalence Index = B/A = 1.0

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.)

80% inundated

SOIL Sampling Point: WL DC3

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	10YR 5/2	100					C	
4-18	10YR 5/1	90	10YR 4/6	10	C	M	C	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL DD1

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 27 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.179372 Long: -82.820593 Datum: WGS84

Soil Map Unit Name: Marlette loam, 2 to 6 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DD1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Juncus effusus*	50	Y	OBL
2. *Lythrum salicaria*	10	N	OBL
3. *Carex scoparia*	10	N	FACW
4. *Scirpus cyperinus*	3	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	73.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	5	Y	FAC
2.			
3.			
4.			
	5.0 = 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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	63.00	x 1 =	63.00
FACW species	10.00	x 2 =	20.00
FAC species	5.00	x 3 =	15.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	78.00 (A)		98.00 (B)

Prevalence Index = B/A = 1.26

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.)

SOIL Sampling Point: WL DD1

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
0-18	10YR 3/2	90	10YR 5/6	10	C	M/PL	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL DD2

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 27 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.179218 Long: -82.816846 Datum: WGS84

Soil Map Unit Name: Marlette loam, 2 to 6 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

Remarks: (Explain alternative procedures here or in a separate report.)
PEM swale in scrub shrub area

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DD2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	10	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Juncus effusus*	50	Y	OBL
2. *Phalaris arundinacea*	10	Y	FACW
3. *Carex scoparia*	10	Y	FACW
4. *Solidago gigantea*	10	Y	FACW
5. *Carex stipata*	10	Y	OBL
6. *Scirpus cyperinus*	5	N	OBL
7. *Carex crinita*	5	N	OBL
8. *Carex hystericina*	5	N	OBL
9.			
10.			
11.			
12.			
	105.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	5	Y	FAC
2.			
3.			
4.			
	5.0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	75.00	x 1 =	75.00
FACW species	30.00	x 2 =	60.00
FAC species	15.00	x 3 =	45.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	120.00 (A)		180.00 (B)

Prevalence Index = B/A = 1.5

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.)

SOIL

Sampling Point: WL DD2

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
0-18	10YR 3/2	90	10YR 5/6	10	C	M/PL	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL DD3

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 27 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.179391 Long: -82.813997 Datum: WGS84

Soil Map Unit Name: Washtenaw loam and silt loam, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PSS depression

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DD3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	10	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus amomum*	60	Y	FACW
2. *Salix interior*	30	Y	FACW
3.			
4.			
5.			
6.			
7.			
	90.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	90.00	x 2 =	180.00
FAC species	10.00	x 3 =	30.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	100.00 (A)		210.00 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

[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.)

SOIL

Sampling Point: WL DD3

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
0-18	10YR 3/2	90	10YR 5/6	10	C	M/PL	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL DD4

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 27 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.179559 Long: -82.811741 Datum: WGS84

Soil Map Unit Name: Marlette loam, 0 to 2 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PEM depression in scrubby area

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DD4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10.0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Elaeagnus angustifolia*	10	Y	FACU
2. *Rhamnus cathartica*	5	Y	FAC
3.			
4.			
5.			
6.			
7.			
	15.0	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	60	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60.0	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	5	Y	FAC
2.			
3.			
4.			
	5.0	= 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: 80.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	70.00	x 2 =	140.00
FAC species	10.00	x 3 =	30.00
FACU species	10.00	x 4 =	40.00
UPL species	0.00	x 5 =	0.00
Column Totals:	90.00 (A)		210.00 (B)

Prevalence Index = B/A = 2.33

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.)

SOIL

Sampling Point: WL DD4

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
0-18	10YR 3/2	90	10YR 5/6	10	C	M/PL	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL DD5

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 27 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.179790 Long: -82.809066 Datum: WGS84

Soil Map Unit Name: Marlette loam, 2 to 6 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

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): 3	
Water Table Present?	Yes ✓	No _____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0	**Wetland Hydrology Present? Yes ✓ No _____**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DD5

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	10	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	60	Y	FACW
2. *Lemna minor*	25	Y	OBL
3. *Carex stipata*	8	N	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	93.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	33.00	x 1 =	33.00
FACW species	70.00	x 2 =	140.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	103.00 (A)		173.00 (B)

Prevalence Index = B/A = 1.68

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.)

Some open water

SOIL Sampling Point: WL DD5

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
0-18	10YR 2/2	100					MMI	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL DD6

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 27 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.179684 Long: -82.808351 Datum: WGS84

Soil Map Unit Name: Marlette loam, 2 to 6 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

Remarks: (Explain alternative procedures here or in a separate report.)
Small PSS depression in woodlot

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DD6

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Frangula alnus*	30	Y	FAC
2. *Ulmus americana*	25	Y	FACW
3. *Acer rubrum*	25	Y	FAC
4. *Rhamnus cathartica*	10	N	FAC
5.			
6.			
7.			
	90.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Frangula alnus*	10	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	25.00	x 2 =	50.00
FAC species	75.00	x 3 =	225.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	100.00 (A)		275.00 (B)

Prevalence Index = B/A = 2.75

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.)

SOIL Sampling Point: WL DD6

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
0-18	10YR 4/3	85	10YR 6/8	15	C	M	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL DD7

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 27 T009N R014E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.179695 Long: -82.807210 Datum: WGS84

Soil Map Unit Name: Marlette loam, 2 to 6 percent slopes, slightly eroded NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PSS depression in woodlot

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): 0
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DD7

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cephalanthus occidentalis*	60	Y	OBL
2. *Cornus amomum*	25	Y	FACW
3. *Rhamnus cathartica*	10	N	FAC
4. *Ulmus americana*	5	N	FACW
5.			
6.			
7.			
	100.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex crinita*	25	Y	OBL
2. *Onoclea sensibilis*	10	Y	FACW
3. *Carex hystericina*	10	Y	OBL
4. *Alopecurus aequalis*	3	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	48.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = 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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	98.00	x 1 =	98.00
FACW species	40.00	x 2 =	80.00
FAC species	10.00	x 3 =	30.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	148.00 (A)		208.00 (B)

Prevalence Index = B/A = 1.41

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.)

SOIL

Sampling Point: WL DD7

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
0-18	10YR 2/2	100					MMI	

[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: Riverbend Wind City/County: Sanilac County Sampling Date: 2023-06-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL DD9

Investigator(s): David Nigro, Ryan Workman, Owen Atkins Section, Township, Range: sec 07 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.226935 Long: -82.751908 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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 _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

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

PEM depression

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): 3	
Water Table Present?	Yes ✓	No _____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0	**Wetland Hydrology Present? Yes ✓ No _____**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DD9

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex crinita*	30	Y	OBL
2. *Phalaris arundinacea*	15	N	FACW
3. *Agrostis stolonifera*	10	Y	FACW
4. *Juncus torreyi*	10	Y	FACW
5. *Carex lupuliformis*	10	Y	OBL
6. *Solidago rugosa*	5	N	FAC
7. *Phalaris arundinacea*	5	N	FACW
8. *Onoclea sensibilis*	5	N	FACW
9.			
10.			
11.			
12.			
	90.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40.00	x 1 =	40.00
FACW species	45.00	x 2 =	90.00
FAC species	5.00	x 3 =	15.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	90.00 (A)		145.00 (B)

Prevalence Index = B/A = 1.61

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.)

SOIL

Sampling Point: WL DD9

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
0-18	10YR 5/2	80	10YR 5/4	20	C	M	CL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-07-11

Applicant/Owner: Liberty State: Michigan Sampling Point: WL DF2

Investigator(s): K. Yantz, O. Atkins -Atwell, LLC Section, Township, Range: sec 08 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.223123 Long: -82.745350 Datum: WGS84

Soil Map Unit Name: Parkhill loam and mucky loam, 0 to 2 percent slopes NWI classification: None

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

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

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

PFO depression

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): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL DF2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	70	Y	FAC
2. *Ulmus americana*	15	N	FACW
3.			
4.			
5.			
6.			
7.			
	85.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	30	Y	FACW
2. *Ulmus americana*	20	Y	FACW
3. *Rhamnus cathartica*	10	N	FAC
4.			
5.			
6.			
7.			
	60.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Fraxinus pennsylvanica*	30	Y	FACW
2. *Parthenocissus quinquefolia*	20	Y	FACU
3. *Solidago gigantea*	10	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
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: 80.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	105.00	x 2 =	210.00
FAC species	80.00	x 3 =	240.00
FACU species	20.00	x 4 =	80.00
UPL species	0.00	x 5 =	0.00
Column Totals:	205.00 (A)		530.00 (B)

Prevalence Index = B/A = 2.59

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.)

SOIL Sampling Point: WL DF2

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 3/2	100					SL	
6-18	10YR 3/2	90	10YR 3/6	10	C	M	SL	

[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: Riverbend City/County: Sanilac County Sampling Date: 2023-06-08

Applicant/Owner: Liberty Power State: Michigan Sampling Point: WL GG1

Investigator(s): C. Moody, C. Scholten - Atwell LLC Section, Township, Range: sec 10 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 43.224047 Long: -82.699683 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

PFO depression

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): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL GG1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	50	Y	FACW
2. *Fraxinus pennsylvanica*	10	N	FACW
3. *Acer rubrum*	10	N	FAC
4. *Populus grandidentata*	10	N	FACU
5. *Tilia americana*	10	N	FACU
6.			
7.			
	90.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	10	Y	FACW
2. *Rosa multiflora*	10	Y	FACU
3.			
4.			
5.			
6.			
7.			
	20.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex interior*	10	Y	OBL
2. *Toxicodendron radicans*	5	Y	FAC
3. *Carex blanda*	5	Y	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = 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: 83.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 10.00	x 1 = 10.00
FACW species 70.00	x 2 = 140.00
FAC species 20.00	x 3 = 60.00
FACU species 30.00	x 4 = 120.00
UPL species 0.00	x 5 = 0.00
Column Totals: 130.00 (A)	330.00 (B)

Prevalence Index = B/A = 2.54

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.)

SOIL Sampling Point: WL GG1

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	10YR 4/3	100					L	
4-18	10YR 2/2	92	10YR 5/6	8	C	M/PL	L	

[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: Riverbend City/County: Sanilac County Sampling Date: 2022-04-04

Applicant/Owner: Liberty State: Michigan Sampling Point: WL Y1

Investigator(s): J. Brown, K. Yantz, Atwell, LLC Section, Township, Range: sec 27 T009N R015E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 43.188319 Long: -82.686196 Datum: WGS84

Soil Map Unit Name: Conover loam, 0 to 3 percent slopes NWI classification: PFO/PSS

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____

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

Naturally problematic due to out of growing season. PFO wetland

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): 1	
Water Table Present?	Yes ✓	No _____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0	**Wetland Hydrology Present? Yes ✓ No _____**

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: WL Y1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	80	Y	FACW
2. *Quercus bicolor*	5	N	FACW
3.			
4.			
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix discolor*	5	Y	FACW
2. *Cornus racemosa*	5	Y	FAC
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Onoclea sensibilis*	80	Y	FACW
2. *Juncus effusus*	5	N	OBL
3. *Solidago gigantea*	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		= 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: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5.00	x 1 =	5.00
FACW species	175.00	x 2 =	350.00
FAC species	5.00	x 3 =	15.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	185.00 (A)		370.00 (B)

Prevalence Index = B/A = 2.0

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.)

SOIL

Sampling Point: WL Y1

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
0-18	10YR 5/2	80	10YR 4/6	20	C	M	CL	Prominent redox.

[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:

APPENDIX C

IPAC AND MNFI RESULTS

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Sanilac County, Michigan

Local office

Michigan Ecological Services Field Office

(517) 351-2555
(517) 351-1443

2651 Coolidge Road Suite 101

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

NOT FOR CONSULTATION

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Indiana Bat Myotis sodalis Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat Myotis septentrionalis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat Perimyotis subflavus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Piping Plover Charadrius melodus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6039	Endangered
Red Knot Calidris canutus rufa Wherever found This species only needs to be considered if the following condition applies: • Only actions that occur along coastal areas during the Red Knot migratory window of MAY 1 - SEPTEMBER 30. There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/1864	Threatened

Reptiles

NOT FOR CONSULTATION

NAME	STATUS
Eastern Massasauga (=rattlesnake) Sistrurus catenatus Wherever found This species only needs to be considered if the following condition applies: • For all Projects: Project is within EMR Range No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2202	Threatened

Clams

NAME	STATUS
Northern Riffleshell Epioblasma rangiana Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/527	Endangered
Round Hickorynut Obovaria subrotunda Wherever found There is **final** critical habitat for this species. https://ecos.fws.gov/ecp/species/9879	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

NOT FOR CONSULTATION

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Bald and Golden Eagle information is not available at this time

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

NOT FOR CONSULTATION

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

NOT FOR CONSULTATION

Migratory bird information is not available at this time

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

NOT FOR CONSULTATION

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

NOT FOR CONSULTATION

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

This location overlaps the following National Wildlife Refuge lands:

LAND	ACRES
FARM SERVICE AGENCY INTEREST OF MI	260.99 acres

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

The area of this project is too large for IPaC to load all NWI wetlands in the area. The list below may be incomplete. Please contact the local U.S. Fish and Wildlife Service office or visit the NWI map for a full list.

NOT FOR CONSULTATION

FRESHWATER EMERGENT WETLAND

- PEM1C
- PEM1Af
- PEM1A
- PEM1/SS1B
- PEM1B
- PEM1Ch
- PEM1F

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1C
- PFO1/SS1C
- PFO1B
- PFO1/SS1B
- PFO1/SS1Bg
- PSS1/EM1C
- PFO1/EM1C
- PFO1/SS1Bd
- PSS1C
- PSS1B
- PSS1/EM1B
- PFO1/SS1A
- PSS1/EM1A

FRESHWATER POND

- PUBGx
- PABG
- PUBG
- PUBF
- PUBK

LAKE

- L1UBHx

OTHER

- Pf

RIVERINE

- R5UBFx
- R5UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

NOT FOR CONSULTATION

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Michigan Natural Features Inventory

Web Database Search

MICHIGAN STATE UNIVERSITY EXTENSION

Search Results for Town 09N, Range 14E, Section 1-18,22-36

Query Results Generated on Jul 13, 2023

No Records Found

Database Updated on Jul 01, 2023

New Search | Refine Search | Previous 25 Records | Next 25 Records

No records were found in the database matching your criteria

Michigan Natural Features Inventory

Web Database Search

MICHIGAN STATE UNIVERSITY EXTENSION

Search Results for Town 09N, Range 15E, Section 1,2,5-36

Query Results Generated on Jul 13, 2023

Displaying Record 1 to 2 of 2 Records Found

Database Updated on Jul 01, 2023

New Search | Refine Search | Previous 25 Records | Next 25 Records

Common Name	Scientific Name	State Status	Federal Status	Last Observed Date	Element Category	Mapping Precision	Site of Observation	Best Documentation of EO	Town	Range	Section	County
Big water crayfish	Cambarus robustus	SC		2015-06-04			Black Creek	Smith, Kelley and Brian Roth. 2017. "Robustus_Immunis." Excel file containing collection collection data for C. robustus and F. immunis.	09N	15E	28, 29	Sanilac
King rail	Rallus elegans	E		1950-07-18	Animal	GX	JEDDO	Hinshaw, J. 1986. March 21 - Personal Communication Re: Rallus elegans Records.	09N	15E	35, 36	Sanilac

New Search | Refine Search | Previous 25 Records | Next 25 Records