## Location Restriction Compliance Demonstration

Ottumwa Generating Station Surface Impoundments 20775 Power Plant Road Ottumwa, Iowa 52501

Prepared for:

Interstate Power and Light Company 20775 Power Plant Road Ottumwa, Iowa 52501

## SCS ENGINEERS

25220083.00 | October 15, 2020

2830 Dairy Drive Madison, WI 53718-6751 608-224-2830

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Location Restriction Compliance Demonstration

## P.E. CERTIFICATION

PROFESSION A	I, Eric J. Nelson, hereby certify that demonstrations prepared for the surf Ottumwa Generating Station meet th 257.61(a), 62(a), and 63(a). This cer of the October 2020 Location Restric Demonstrations for the surface impo Engineers. I am a duly licensed Profe of the State of Iowa.	face impoundments at the e requirements in 40 CFR tification is based on my review ction Compliance oundments prepared by SCS
ERIC J. NELSON	2 Mich-	10/15/2020
The Alato A	(signature)	(date)
I NOWA INT	Eric J. Nelson	
10/15/2020	(printed or typed name)	
	License number <u>23136</u>	
	My license renewal date is Decembe	r 31, 2020.
	Pages or sheets covered by this seal:	:
	Location Restriction Compliance Den	nonstration dated 10/15/2020.

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Location Restriction Compliance Demonstration

## 1.0 INTRODUCTION

On behalf of Interstate Power and Light Company (IPL), SCS Engineers (SCS) has prepared the enclosed Location Restriction Compliance Demonstration for the coal combustion residual (CCR) surface impoundments at the Ottumwa Generating Station (OGS) as required by 40 CFR 257.61-63. The CCR surface impoundments addressed with this demonstration include:

- OGS Ash Pond
- OGS Zero Liquid Discharge (ZLD) Pond

Figure 1 shows the site and surface impoundment locations.

### **2.0** LOCATION RESTRICTIONS

#### §257.61 "Wetlands."

"(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in wetlands, as defined in §232.2 of this chapter, unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that the CCR unit meets the requirements of paragraphs (a)(1) through (5) of this section."

The surface impoundments are not located in wetlands as defined by 40 CFR 232.2. A wetland delineation was performed by Burns & McDonnell in May 2020 (BMCD, 2020) and several wetlands that do not meet the 40 CFR 232.2 definition were delineated. The delineated wetlands were artificial, low-quality wetlands created within the areas that transport or hold operational wastewaters and stormwater runoff (i.e., the facility waste treatment system as defined by 40 CFR 120.2). The isolated, artificial wetlands within the OGS Ash Pond are unlikely to be jurisdictional in the opinion of BMCD based on the following:

- "Created for industrial purposes to transport or hold operational wastewaters and stormwater runoff (i.e., the waste treatment system)"
- "Are not adjacent wetlands"
- "Are not otherwise believed to meet the definition of jurisdictional waters"

SCS has reviewed the wetland delineation report and concurs with the opinion provided by BMCD that the areas exhibiting wetland characteristics in the OGS Ash Pond are not jurisdictional wetlands. An approved jurisdictional determination will be provided by the US Army Corps of Engineers in conjunction with the permitting required to complete the closure of the OGS Ash Pond. We expect the USACE will concur with the opinion provided by BMCD. A copy of the wetland delineation report is included in **Appendix A**.

#### §257.62 "Fault areas."

"(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located within 60 meters (200 feet) of the outermost damage zone of a fault that has had displacement in Holocene time unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that an alternative setback distance of less than 60 meters (200 feet) will prevent damage to the structural integrity of the CCR unit."

Based on a review of the U.S. Geological Survey (USGS) Quaternary faults database and map as shown in **Appendix B**, the surface impoundments are not located within 200 feet of the outermost damage zone of a fault that has had displacement in Holocene time. In 40 CFR 257.53, Holocene is defined as the most recent epoch of the Quaternary period extending from 11,700 years before present, to present. The USGS map shows that no faults are located in Iowa.

#### §257.63 "Seismic impact zones."

"(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in seismic impact zones unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that all structural components including liners, leachate collection and removal systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site."

The surface impoundments are not located in seismic impact zones. In 40 CFR 257.53, a seismic impact zone is defined as an area having a 2 percent or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10 g in 50 years. Based on a review of the USGS 2014 Long-Term Model National Seismic Hazard Map (see **Appendix C**), the maximum expected horizontal acceleration for the vicinity of the Ottumwa Generating Station is approximately 0.04 g, below the threshold for a seismic impact zone.

## **3.0** REFERENCES

- A. Burns & McDonnell, 2020, Alliant Ottumwa Generating Station Pond Closure & Wastewater Treatment Project, Wetland Delineation Report: Kansas City, MO, September 30, 2020.
- B. USGS fault map website (accessed, 9/16/2020): <u>http://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=db287853794f4555b8e93</u> e42290e9716
- C. USGS seismic impact zones map website (accessed, 9/16/2020): https://earthquake.usgs.gov/static/lfs/nshm/conterminous/2014/2014pga2pct.pdf

Location Restriction Compliance Demonstration

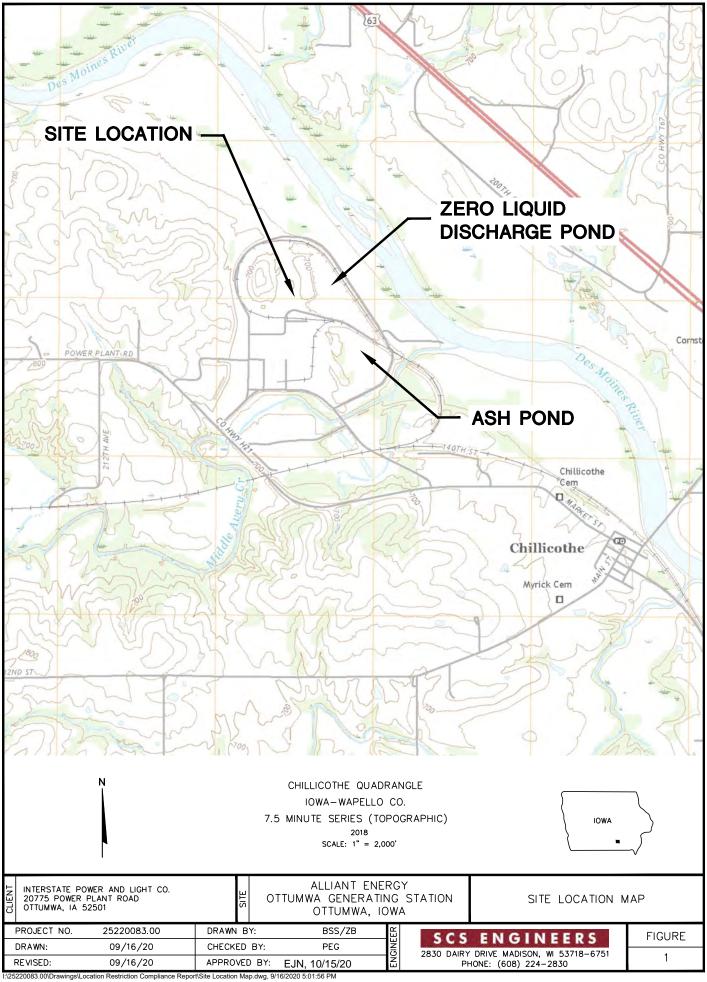
Figure 1

Site Location Map

Location Restriction Compliance Demonstration

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Appendix A

Wetland Information

Location Restriction Compliance Demonstration

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September 30, 2020

Mr. Chad Wall Alliant Energy 200 1<sup>st</sup> Street SE Cedar Rapids, IA 52401

Re: Alliant Ottumwa Generating Station Pond Closure & Wastewater Treatment Project, Wetland Delineation Report

Dear Mr. Wall:

Burns & McDonnell was retained by Interstate Power and Light Company (IPL) to provide wetland delineation services for the Ottumwa Generating Station Pond Closure & Wastewater Treatment Project (Project) near Ottumwa in Wapello County, Iowa (Figure A-1, Appendix A). The following sections provide information on the proposed Project and summarize the completed wetland delineation.

#### **INTRODUCTION**

IPL plans to close existing Coal Combined Residual (CCR) ponds at the Ottumwa Generating Station. To continue proper management of CCR material and wastewater quality at the plant, IPL will construct new outfalls to the Des Moines River and Middle Avery Creek. This will allow IPL to maintain compliance with CCR regulations.

The Project has the potential to impact wetlands or other waterbodies that may be under the jurisdiction of the U.S. Army Corps of Engineers (USACE), as designated by Section 404 of the Clean Water Act. Burns & McDonnell conducted a wetland delineation for the Project to evaluate for the presence of wetlands and other waterbodies, including streams, drainages, and ponds. The delineation was conducted based on the proposed Project layout. The wetland delineation encompassed all areas where construction work will be needed for the Project (Survey Area). The Survey Area is approximately 91 acres.

#### **METHODS**

The following discussions summarize the methods used for the review of existing data and the wetland delineation.

#### **Existing Data Review**

Burns & McDonnell reviewed available background information for the Project prior to conducting a site visit. This available background information included 2018 U.S. Geological Survey (USGS) 7.5 minute topographic map (2018 Chillicothe, IA quadrangle), U.S. Fish & Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, National Agriculture Imagery Program (NAIP) aerial photography (2017), USGS National Hydrography Dataset (NHD), Federal Emergency Management Agency (FEMA) 1987 FIRM Panel 1909110001A, and

9400 Ward Parkway \ Kansas City, MO 64114 O 816-333-9400 \ F 816-333-3690 \ burnsmcd.com



U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) 2019 Soil Survey Geographic (SSURGO) digital data for Wapello County, Iowa. Figures A-2 and A-3 in Appendix A depict this data. The National Oceanic and Atmospheric Administration (NOAA) Palmer Drought Severity Index (PDSI) was also reviewed to evaluate precipitation conditions.

Wetland presence based only on NWI maps or other existing data cannot be assumed to accurately indicate the location and extent of jurisdictional wetlands. In addition, wetland identification criteria differ between the USFWS and the USACE. As a result, wetlands shown on an NWI map may not be under the jurisdiction of the USACE, and all USACE-jurisdictional wetlands are not always included on NWI maps. A field visit was conducted to identify and delineate any wetlands or other waterbodies that may be present within the Survey Area.

#### Wetland Delineation Field Survey

Burns & McDonnell wetland scientists completed a wetland delineation of the Survey Area on May 27 and 28, 2020. The delineation was completed in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* (1987 Manual) and the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region – Version 2.0* (Regional Supplement). The Survey Area was evaluated on foot to identify the location and extent of wetlands and waterbodies within the Survey Area.

A sample plot was established at each location in the Survey Area where vegetation, hydrology, or topography suggested a wetland may be present, per the 1987 Manual and Regional Supplement, including areas within the waste treatment system. Data on vegetation, soil characteristics (including color and texture to a depth of 24 inches, where possible), and hydrological indicators were recorded at each sample plot on Wetland Determination Data Forms from the Regional Supplement. Sample plots were also established, and data recorded, at representative upland locations (Appendix B). Locations of sample plots and other identified features were recorded using a sub-meter-accurate global positioning system (GPS) unit. Natural color photographs were taken onsite and are included in Appendix C (Photographs C-1 through C-37).

#### RESULTS

The following sections describe the results of the existing data review and the wetland delineation.

#### **Existing Data Review**

The existing USGS topographic maps were reviewed to familiarize Burns & McDonnell wetland personnel with the topography and potential locations of wetlands and other waterbodies (Figure A-2). The USGS topographic map indicates the Survey Area crosses some riparian areas but



predominantly consists of industrial areas of relatively flat topography. The 2017 aerial photograph shows that the Survey Area is primarily contained within the boundaries of an existing coal-fired power plant (Figure A-3). The NHD indicates there are two named streams, Des Moines River and Middle Avery Creek, which border the Survey Area.

The NRCS SSURGO digital data indicates that portions of nine soil map units are located in the Survey Area. Of these nine map units, the three units listed below are included on local and national hydric soil lists (Figure A-3).

- Givin silt loam, benches, 2 to 5 percent slopes
- Colo silty clay loam, 0 to 2 percent slopes, occasionally flooded
- Richwood silt loam, 2 to 5 percent slopes

The NOAA PDSI indicates that Wapello County, Iowa experienced moderately moist conditions prior to and during the month of the wetland delineation. This indicates that conditions onsite were wetter than average.

Based on available data, eight NWI wetlands are located within the Survey Area, including one lake, one palustrine emergent (PEM) wetland, one palustrine forested (PFO) wetland, four palustrine unconsolidated bottom (PUB) wetlands, and one riverine (Figure A-2). One additional riverine wetland is located just east of the Survey Area.

The FEMA FIRM panel indicates that a significant portion of the Survey Area falls within a 100-Year Floodplain associated with the Des Moines River and Middle Avery Creek.

#### Wetland Delineation Field Survey

On May 27 and 28, 2020, a two-person team comprised of a wetland scientist paired with a GPS specialist, both with Burns & McDonnell, conducted a wetland delineation of the Survey Area. The wetland scientist identified the location and extent of features within the Survey Area, and the GPS specialist recorded the location and extent of those features. The land cover and delineated waterbodies from the site visit are discussed in detail below.

The Project is located within an industrial setting. The soil in the Survey Area has been highly disturbed by industrial activities associated with the existing coal-fired power plant. Most of the Survey Area exists within a designated bottom ash area, and soil samples were not collected there due to the layer of coal dust on top of the soil.

*Vegetation*. The Survey Area was largely composed of a functioning coal-fired power plant, spoil piles, constructed detention ponds, and a few riparian areas. Where present, typical vegetation in the upland portions of the Survey Area included annual ragweed (*Ambrosia* 



*artemisiifolia*), Canadian horseweed (*Erigeron canadensis*), sticky-willy (*Galium aparine*), black medick (*Medicago lupulina*), and tall fescue (*Schedonorus arundinaceus*). General landscape photos of representative upland areas are included in Appendix C.

*Soils*. Typical upland soils, where taken, were dark gray (10YR 4/1) and were silty clay loam or clay loam in texture. Redoximorphic features were present in wetland soils but were absent in upland soils.

*Hydrology*. Hydrology in the Survey Area has been altered to support industrial purposes. The primary source of hydrology for the delineated wetlands within the Survey Area came from directed drainage of wastewater from the power plant and rainfall. Indicators of hydrology within the wetlands included standing water, a high water table, saturation, drift deposits, an algal mat or crust, inundation visible on aerial imagery, a hydrogen sulfide odor, oxidized rhizospheres on living roots, drainage patterns, a positive FAC neutral test, and geomorphic position.

#### **Delineated Areas**

Sixteen wetlands and 5 streams were identified during the wetland delineation effort. The delineated wetlands and streams are described by type below, and their locations are shown on Figure A-4 in Appendix A. Data forms and photographs of these sample plots are included in Appendix B and Appendix C, respectively.

It is the opinion of Burns & McDonnell that four wetlands and three streams have the potential to be jurisdictional waters of the U.S. Features assumed to be non-jurisdictional are indicated by highlighted grey cells in Tables 1 and 2 below. A jurisdictional determination can only be provided by the USACE. Delineated features that were assumed to be non-jurisdictional were either created for industrial purposes to transport or hold operational wastewaters and stormwater runoff (i.e., the waste treatment system), are not "adjacent wetlands," and are not otherwise believed to meet the definition of jurisdictional waters. Figure A-5 in Appendix A shows the extent of the waste treatment system. Waste treatment systems, as defined in 40 CFR 120.2(3)(xv), are not included as waters of the U.S. Figure A-5 in Appendix A also displays the assumed jurisdictional and non-jurisdictional delineated waters within the Survey Area.

#### Wetlands

Seven PEM, seven PUB, and two palustrine scrub-shrub (PSS) wetlands were identified within the Survey Area (see photographs in Appendix C). Table 1 provides the type, size, and likely jurisdictional status of the delineated wetlands within the Survey Area.



Wetland Number	Wetland Type <sup>a</sup>	Area of Wetland (acre)	Figure A-4 Page Number	Jurisdictional <sup>b</sup>
W-1	PEM	0.06	3	Yes
W-2	PEM	0.75	1, 2	Yes
W-3	PSS	0.08	1	Yes
W-4 (Bottom Ash Pond)	PEM	0.03	3	No
W-5 (Bottom Ash Pond)	PEM	13.80	2, 3	No
W-6 (Bottom Ash Pond)	PUB	0.40	3	No
W-7 (Bottom Ash Pond)	PEM	0.08	3	No
W-8 (Bottom Ash Pond)	PUB	0.08	3	No
W-9	PEM	4.55	2, 3	No
W-10	PUB	0.17	3	No
W-11	PUB	0.32	3	No
W-12 (Bottom Ash Pond)	PEM	0.70	2, 3	No
W-13 (Bottom Ash Pond)	PUB	15.31	2, 3	No
W-14 (Bottom Ash Pond)	PUB	0.38	2	No
W-15 (ZLD Pond)	PUB	18.24	1, 2	No
W-16	PSS	0.02	1	Yes
	Total:	54.97		1 (DCC)

(a) Palustrine emergent = PEM, palustrine unconsolidated bottom = PUB, palustrine scrub-shrub (PSS)

(b) Indication of jurisdictionality represents the opinion of Burns & McDonnell. An official Jurisdictional Determination can only be provided by the USACE.



Seven PEM wetlands, encompassing 19.97 acres, were delineated within the Survey Area. Dominant vegetation in the PEM wetlands included common reed (*Phragmites australis*), reed canarygrass (*Phalaris arundinacea*), blunt spikerush (*Eleocharis obtusa*), and needle spikerush (*Eleocharis acicularis*). Wetland hydrology was indicated in PEM wetlands by standing water, a high water table, saturation, drift deposits, an algal mat or crust, inundation visible on aerial imagery, a hydrogen sulfide odor, drainage patterns, a positive FAC-neutral test, and geomorphic position. Soils, where they could be evaluated, were very dark gray (10YR 3/1) in color and silty clay loam in texture, with redoximorphic concentrations. Hydric soil was indicated by Hydrogen Sulfide (A4) or Redox Dark Surface (F6).

Seven PUB wetlands, encompassing 34.90 acres, were delineated within the Survey Area. Vegetation around the PUB wetlands was dominated by common reed. The substrate was typically bottom ash or silt.

Two PSS wetlands, encompassing 0.10 acre, were delineated within the Survey Area. Dominant vegetation in the PSS wetland included black willow (*Salix nigra*) and reed canarygrass. Wetland hydrology was indicated in the PSS wetland by oxidized rhizospheres on living roots, a concave geomorphic position, and a positive FAC-neutral test. Soils, where they could be evaluated, were typically very dark gray (10YR 3/1) in color and clay loam or silty clay loam in texture, with redoximorphic concentrations. Hydric soil was indicated by Redox Dark Surface (F6).

#### Streams

Five streams, consisting of three stream types (perennial, intermittent, and ephemeral) were identified within the Survey Area (see photographs in Appendix C). A total of 3,138 linear feet of stream were delineated within the Survey Area. The different stream types are summarized below. Table 2 provides the type, delineated length, and likely jurisdictional status of each stream delineated within the Survey Area.

Stream Number	Stream Type	Stream Length (feet)	Stream Width <sup>a</sup> (feet)	Figure A-4 Page Number	Jurisdictional <sup>b</sup>
S-1 (Middle Avery Creek)	Perennial	139	45	3	Yes
S-2 (Des Moines	Perennial	51	660	1	Yes

Table 2: Type and Length of Delineated Streams within the Survey Area



Stream Number	Stream Type	Stream Length (feet)	Stream Width <sup>a</sup> (feet)	Figure A-4 Page Number	Jurisdictional <sup>b</sup>
River)					
S-3	Intermittent	519	4.5	1	Yes
S-4	Ephemeral	1,364	4.5 - 12	2, 3	No
S-5	Ephemeral	1,065	10	2	No
	Total:	3,138			

(a) The stream widths for S-1 and S-2 were estimated based off of aerial imagery.

(b) Indication of jurisdictionality represents the opinion of Burns & McDonnell. An official Jurisdictional Determination can only be provided by the USACE.

Two ephemeral streams, extending for 2,429 linear feet, were delineated within the Survey Area. Ephemeral streams were characterized by a defined bed and bank and were constructed for wastewater discharge from the power plant to the ash ponds. Ephemeral streams ranged from approximately 4.5 to 12 feet in width at the ordinary high-water mark (OHWM) with bank heights ranging from 1 to 2 feet. At the time of delineation, water was observed at a depth of 0.5 to 1.5 feet. The substrates of the ephemeral streams were comprised typically of coal dust or silt. These streams flowed through industrialized ash pond areas within the boundaries of the power plant. Riparian vegetation included species such as common reed, black medick, black willow, field pennycress (*Thlaspi arvense*), field parsnip (*Pastinaca sativa*), and common milkweed (*Asclepias syriaca*). These streams are likely not jurisdictional because they are artificially created streams, and the water source is from the power plant.

One intermittent stream, extending for 519 feet, was delineated within the Survey Area. Intermittent streams were characterized by the presence of a limited volume of flow at the time of the site visit. This is a likely indicator that the stream is partially influenced by groundwater, but it may not flow during dry periods. The water source for S-3 was largely from an existing outfall from the power plant, but groundwater was also a source of water (Photograph C-35, Appendix C). S-3 was 4.5 feet wide at the OHWM with a bank height of 3.5 feet. At the time of delineation, water was observed at a depth of 6 inches. The substrate of the intermittent stream was comprised of coal dust, silt, and gravel. This stream flowed along a chain-link fence. Common riparian vegetation included species such as black willow, sticky-willy, and great ragweed (*Ambrosia trifida*).

Two perennial streams, Middle Avery Creek and Des Moines River, were delineated for a total length of 190 linear feet within the Survey Area. Perennial streams were characterized by the presence of a substantial volume of flow at the time of the site visit as well as secondary



characteristics such as observance of fish and other aquatic fauna, indicating that water flows year-round. Perennial streams were approximately 45 to 660 feet in width at the OHWM with bank heights ranging from 10 to 15 feet. At the time of delineation, the depth of both Middle Avery Creek and Des Moines River could not be estimated due to the size of the streams, flow rate, and turbidity of the water. The substrates could not be confirmed at these streams due to turbidity. These streams flowed along the edge of the Survey Area, and the location of only one bank of each stream was recorded with GPS. Common riparian vegetation included common reed, black willow, multiflora rose (*Rosa multiflora*), rough barnyard grass (*Echinochloa muricata*), and green ash (*Fraxinus pennsylvanica*).

#### SUMMARY

Burns & McDonnell conducted a wetland delineation within the Survey Area to identify wetlands and other waterbodies. Sixteen areas with wetland characteristics and five streams were identified. Most of the areas with wetland characteristics delineated within the Survey Area were artificial, low-quality wetlands created within the areas of the Generating Station that transport or hold operational wastewaters and stormwater runoff (i.e., the waste treatment system). The dominant vegetation throughout these areas was common reed. This species is a vigorous growing plant that outcompetes most other plants in the vicinity and can thrive in highly disturbed wet areas. The isolated, artificial PEM and PUB areas within the bottom ash pond are unlikely to be jurisdictional since they are part of the waste treatment system, as defined in 40 CFR 120.2(3)(xv).

A total of 4 wetlands and 3 streams appear to be jurisdictional waters of the U.S. (Tables 1 and 2) due to perennial flow, physical proximity and/or hydrologic connection to perennial features, or other indicators. The features indicated as "Yes" in Tables 1 and 2 are presumed to be under the jurisdiction of the USACE; however, an official Jurisdictional Determination can only be made by the USACE.

The Project may qualify for Nationwide Permit (NWP) 7 for Outfall Structures and Associated Intake Structures provided that all activities are related to the construction or modification of outfall structures and associated intake structures, where the effluent from the outfall is in compliance with National Pollutant Discharge Elimination System (NPDES) Program. A Pre-Construction Notification (PCN) is required prior to starting construction.

All areas temporarily impacted by construction of the Project should be restored to their original contours and revegetated as appropriate. If the Project will result in the permanent loss of greater than 1/10-acre of wetlands, compensatory mitigation is required. The Project would comply with the General and Iowa Regional Conditions of the NWP.



If you have any questions or require additional information, please contact Olivia Haney by telephone at (816) 627-5736 or by e-mail at olhaney@burnsmcd.com.

Sincerely,

QuintHoney

Olivia Haney Wetland Specialist

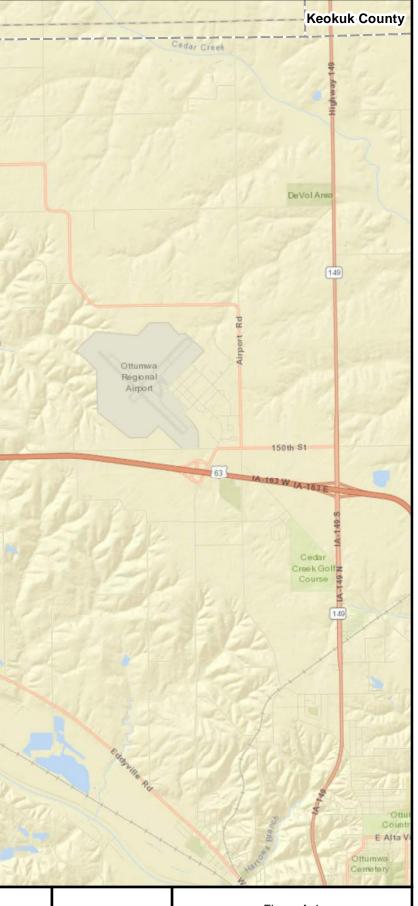
Attachments:

Appendix A - Figures Appendix B - Routine Wetland Determination Data Forms, Midwest Region Appendix C - Site Photographs

cc: Robert Owens, Burns & McDonnell Sarah Gilstrap, Burns & McDonnell Paul Brandt, Burns & McDonnell

**APPENDIX A - FIGURES** 

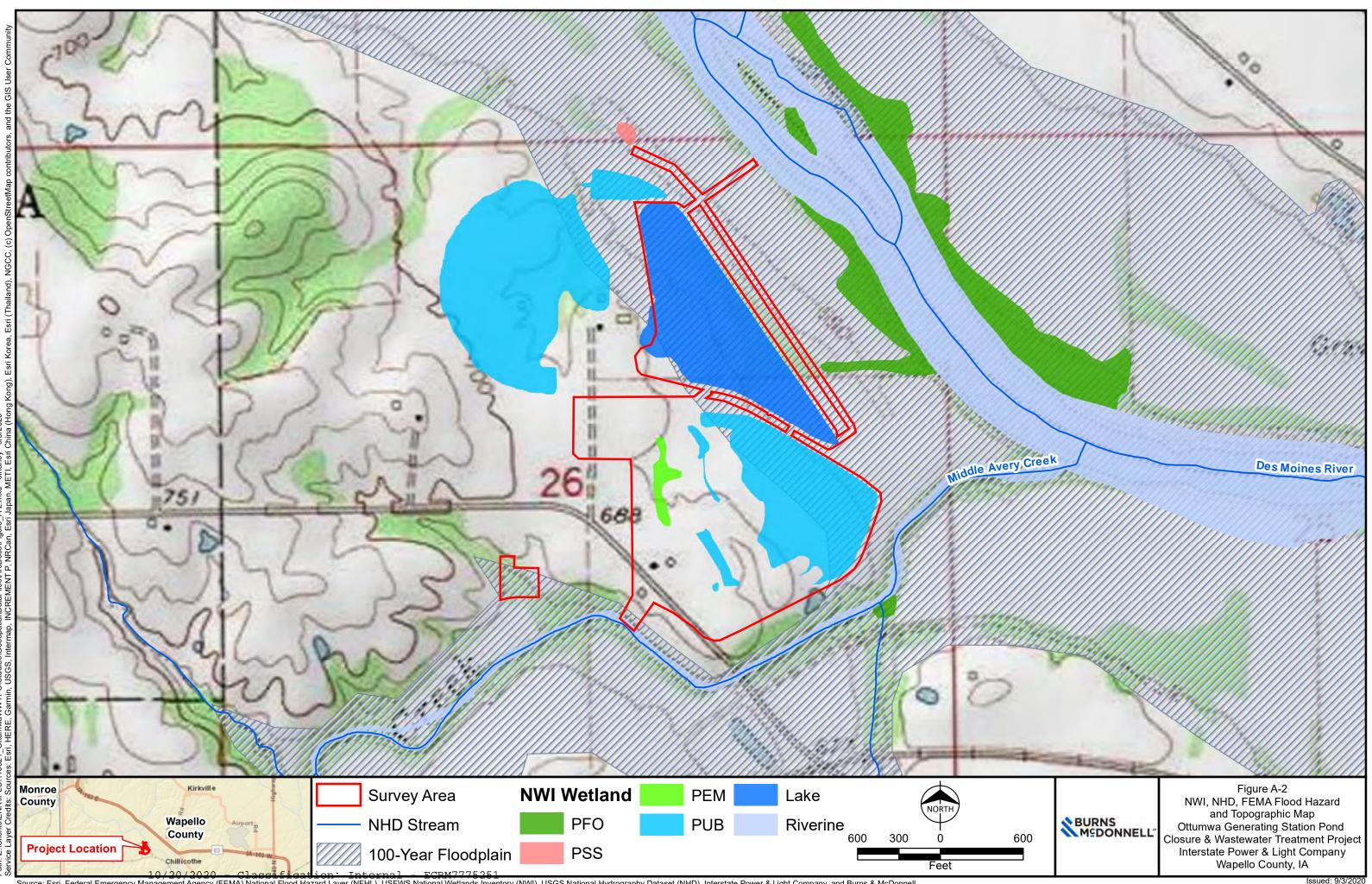
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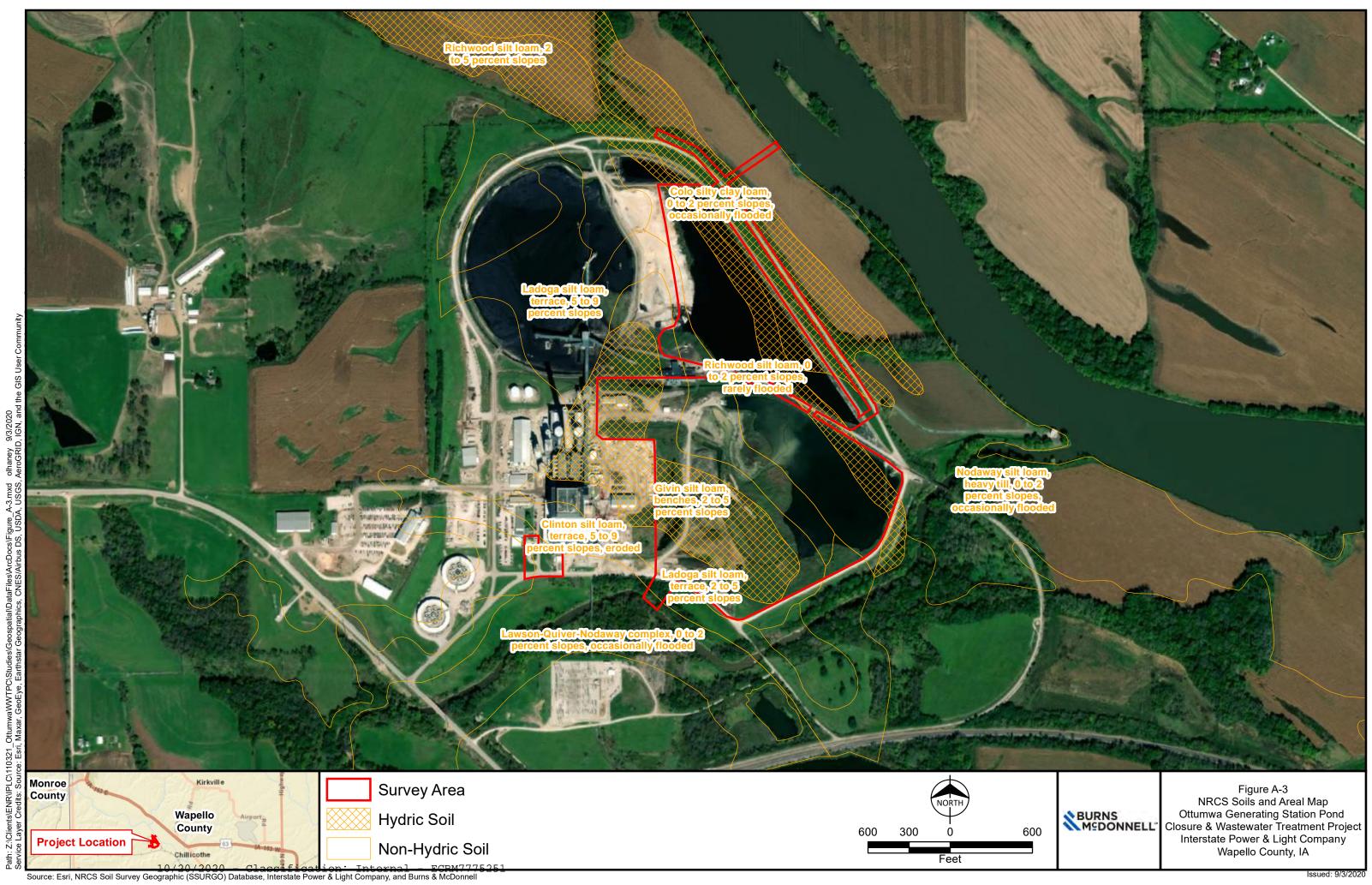


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Figure A-1 General Vicinity Map Ottumwa Generating Station Pond Closure & Wastewater Treatment Project Interstate Power & Light Company Wapello County, IA



Source: Esri, Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), USFWS National Wetlands Inventory (NWI), USGS National Hydrography Dataset (NHD), Interstate Power & Light Company, and Burns & McDonnell



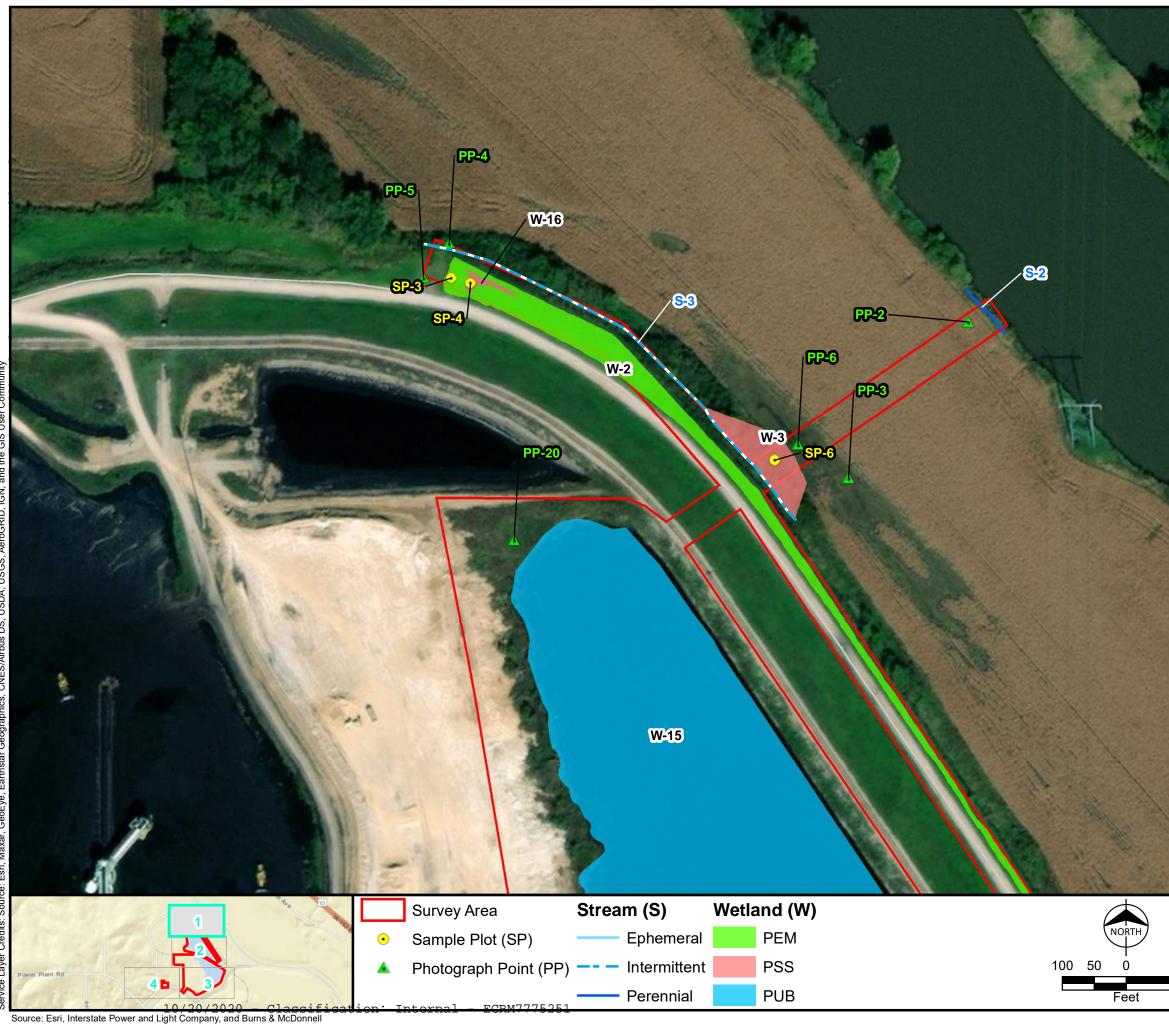
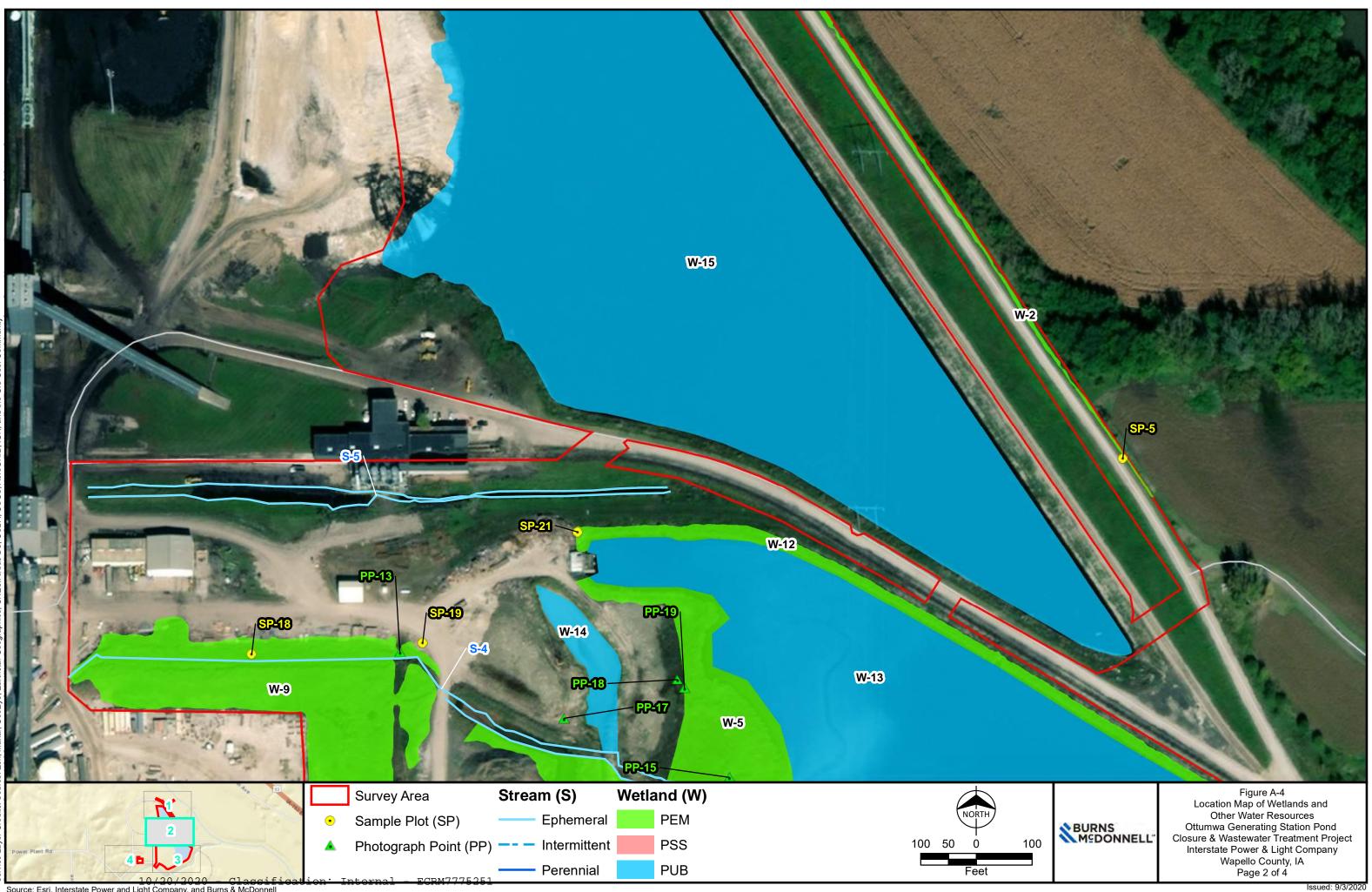


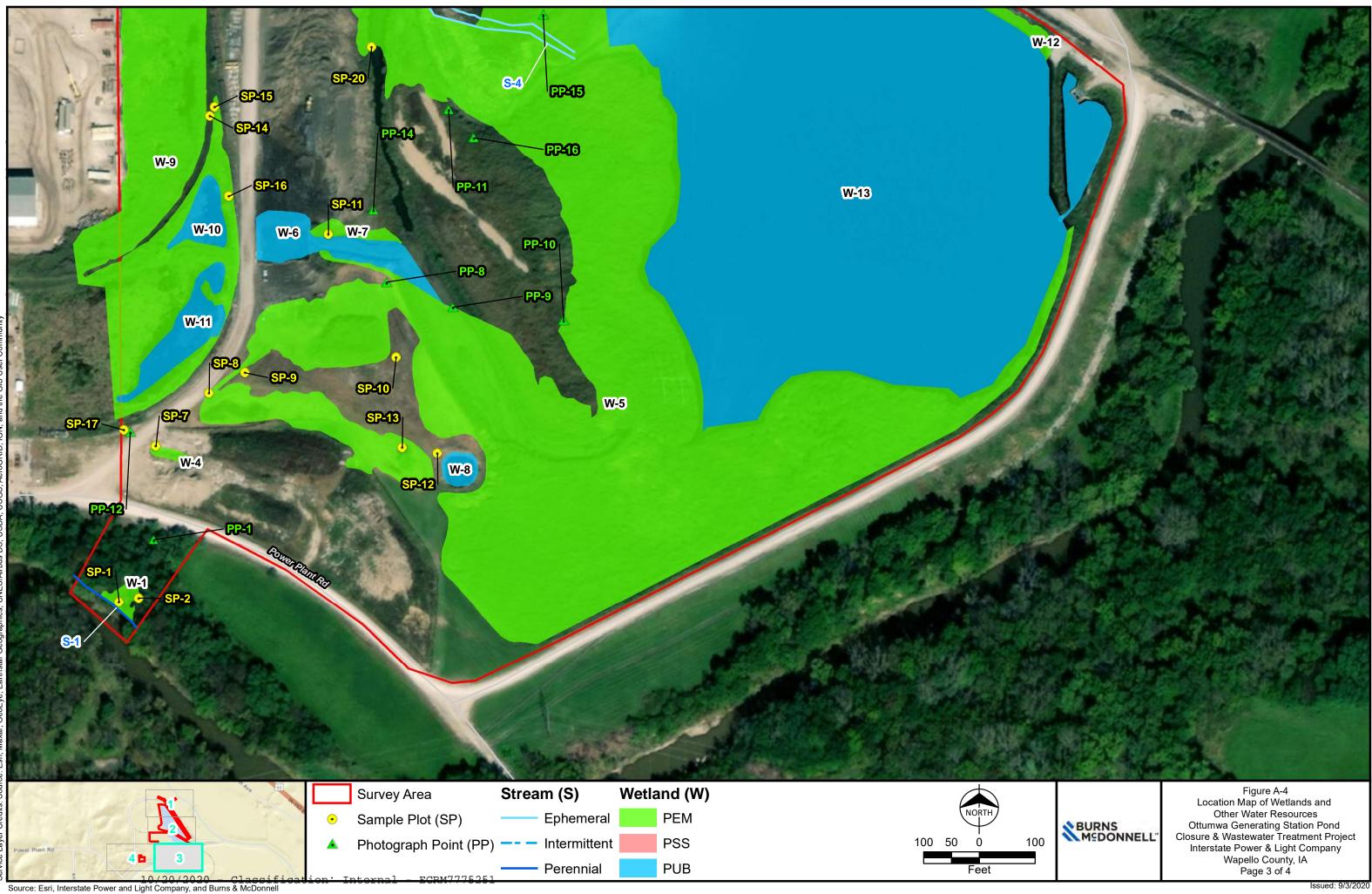


Figure A-4 Location Map of Wetlands and Other Water Resources Ottumwa Generating Station Pond Closure & Wastewater Treatment Project Interstate Power & Light Company Wapello County, IA Page 1 of 4

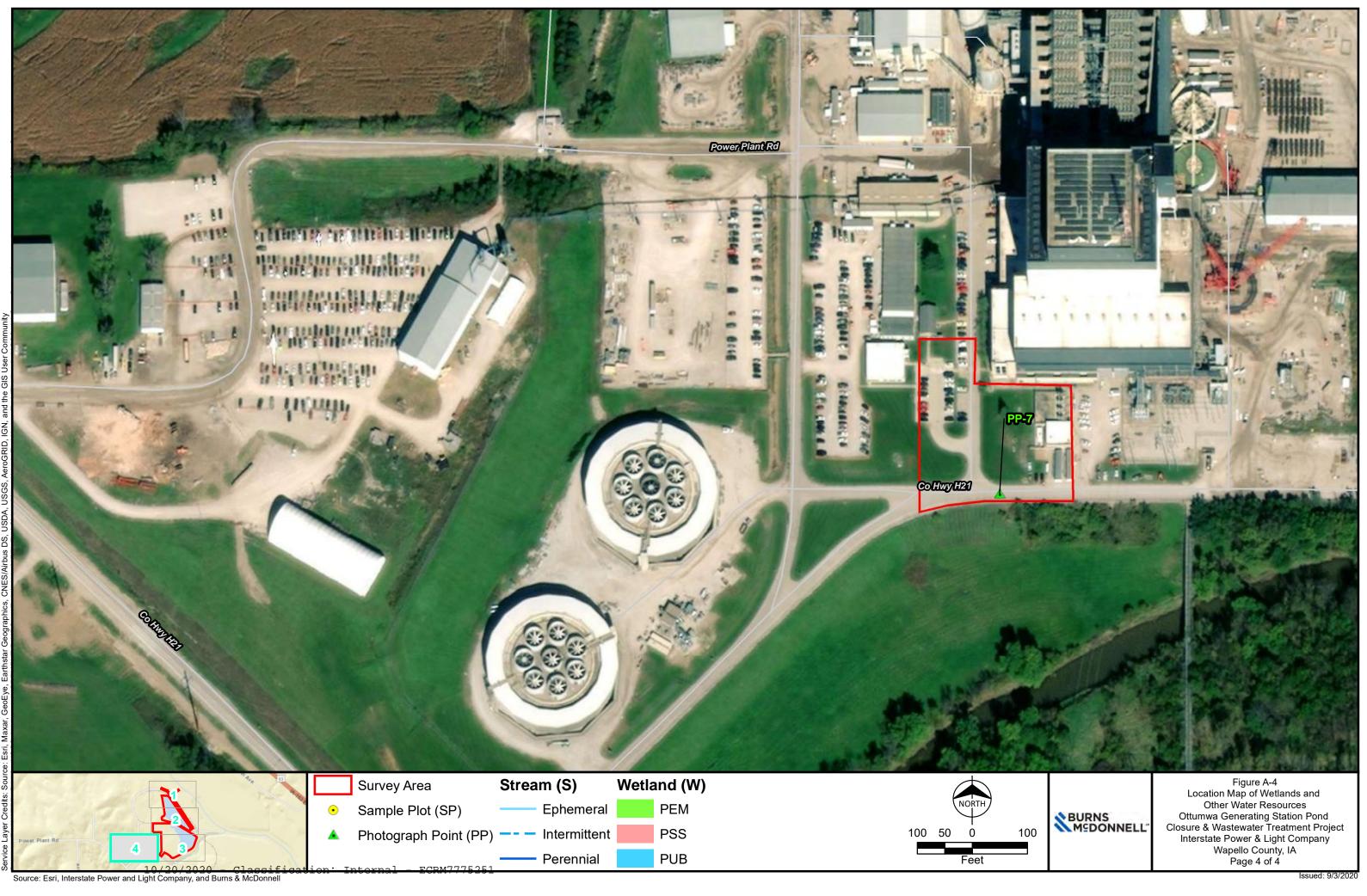
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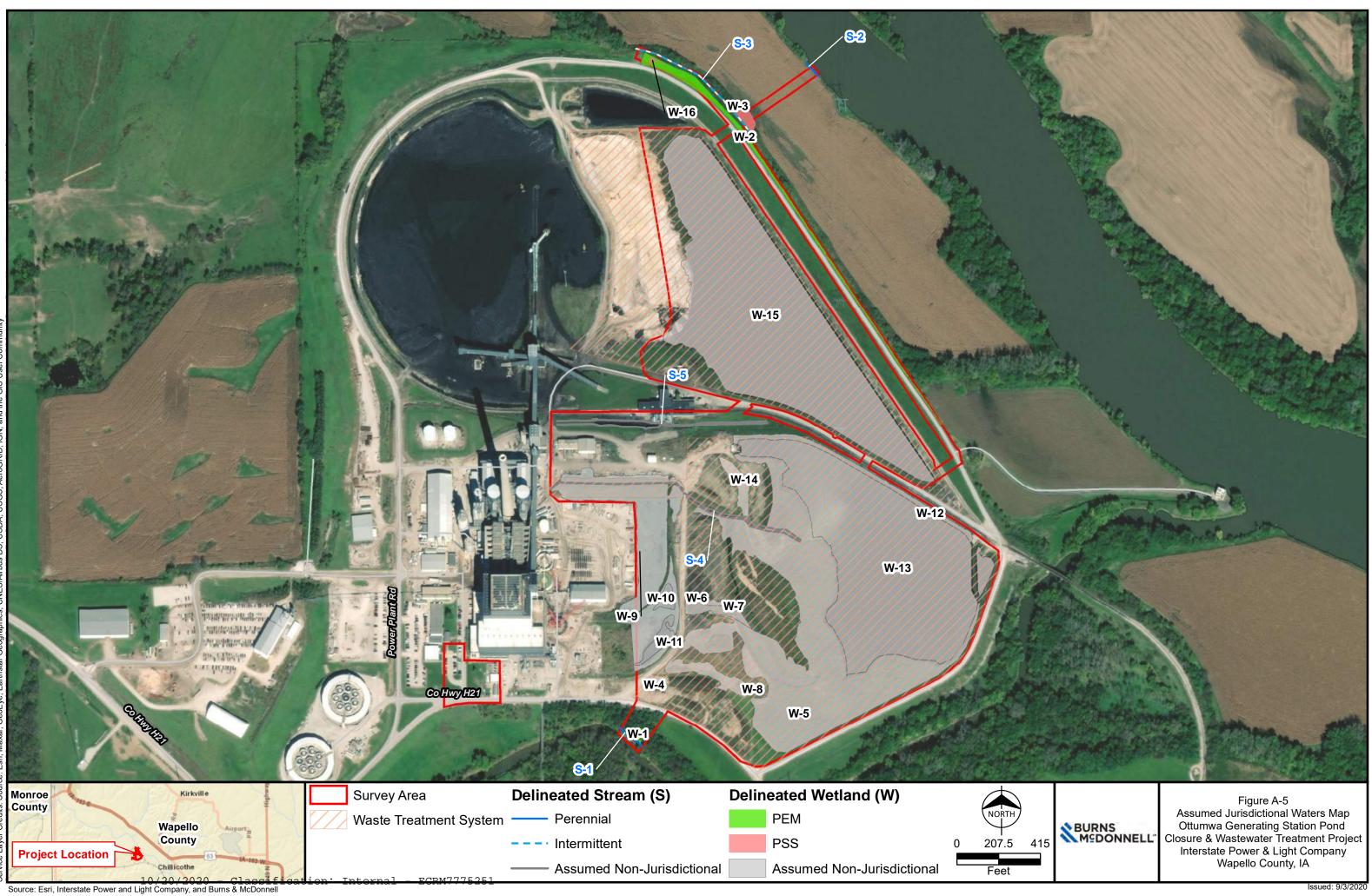


Source: Esri, Interstate Power and Light Company, and Burns & McDonnell



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#### APPENDIX B - ROUTINE WETLAND DETERMINATION DATA FORMS, MIDWEST REGION

#### WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello County Sampling Date: 2020-05-	27
Applicant/Owner: Interstate Power and Light Company	State: Iowa Sampling Point: SP-1	
Investigator(s): O. Haney, J. Maine	_ Section, Township, Range: S26 T73N R15W	
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, none): None	
	_ Long: -92.552766 Datum: NAD 83	
Soil Map Unit Name: Lawson-Quiver-Nodaway complex, 0 to 2 per	rcent slopes, occasionally flooded NWI classification: N/A	
Are climatic / hydrologic conditions on the site typical for this time of yo	/ear? Yes No (If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significantly	y disturbed? Are "Normal Circumstances" present? Yes 🗾 No _	
Are Vegetation, Soil, or Hydrology naturally pr	roblematic? (If needed, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects, important features, o	etc.
Hydrophytic Vegetation Present? Yes No	_	
Hydric Soil Present? Yes 🖌 No	Is the Sampled Area	
Wetland Hydrology Present? Yes <u>V</u> No	within a Wetland? Yes <u>V</u> No	
Remarks:		
SP-1 is in PEM W-1. According to the Palmer Drought Severity Ind sampling. Soil in the area has been significantly disturbed by indus	dex the area was experiencing moderately moist conditions at the time of strial activities associated with the power plant.	

**VEGETATION** – Use scientific names of plants.

00 <i>1</i>	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft r</u> )		Species?		Number of Dominant Species
<sub>1.</sub> Betula nigra	10	<u> </u>	FACW	That Are OBL, FACW, or FAC: 2 (A)
2				
3				Total Number of Dominant Species Across All Strata: 2 (B)
				Species Across All Strata. $\underline{2}$ (B)
4				Percent of Dominant Species
5	100/			That Are OBL, FACW, or FAC: 100 (A/B)
a in the contract of the second	10%	= Total Cov	/er	Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15 ft r )				
1	·			Total % Cover of: Multiply by:
2				OBL species 0 x 1 = 0
3				FACW species <u>85</u> x 2 = <u>170</u>
4				FAC species 0 x 3 = 0
5				FACU species 5 x 4 = 20
		= Total Cov		UPL species $0 \times 5 = 0$
Herb Stratum (Plot size: <u>5 ft r</u> )		- 10(a) 00(		Column Totals: 90 (A) 190 (B)
1 Phragmites australis	70	~	FACW	
2. Impatiens capensis	5		FACW	Prevalence Index = B/A = <u>2.1</u>
3. Solidago altissima	5		FACU	Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				✓ 2 - Dominance Test is >50%
				✓ 3 - Prevalence Index is $\leq 3.0^1$
6				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
7				data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9	·			
10				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
20 ft r	80%	= Total Cov	/er	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				
1	·			Hydrophytic
2				Vegetation Present? Yes <u>V</u> No
		= Total Cov	/er	
Remarks: (Include photo numbers here or on a separate s	sheet.)			
Rapid test is met. Photograph C-1.				

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#### SOIL

Profile Desc	cription: (Describe	to the dep	th needed to docu	ment the	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix							
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR 4/2	95	7.5YR 4/4	5	<u>C</u>	<u>M</u>	Clay loam	
4-8	N 2.5/	40					Clay loam	Mixed matrix; rock present
4-8	2.5Y 5/3	35						
4-8	5YR 4/6	25						
8-24	N 2.5/	100					Clay loam	Rocks present
<sup>1</sup> Type: C=C	oncentration, D=De	pletion, RM=	Reduced Matrix, M	S=Maske	d Sand G	ains.		: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators	for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy	Gleyed M	atrix (S4)		Coast	Prairie Redox (A16)
Histic E	pipedon (A2)		Sandy	Redox (S	5)		Dark S	urface (S7)
Black H	istic (A3)		Strippe	d Matrix (	S6)		Iron-M	anganese Masses (F12)
🖌 🗹 Hydroge	en Sulfide (A4)		Loamy	Mucky Mi	neral (F1)		Very S	hallow Dark Surface (TF12)
Stratifie	d Layers (A5)		Loamy	Gleyed M	atrix (F2)		Other (	Explain in Remarks)
2 cm Mu	uck (A10)			ed Matrix (				
Deplete	d Below Dark Surfa	ce (A11)	🖌 Redox	Dark Surf	ace (F6)			
Thick Da	ark Surface (A12)		Deplete	ed Dark S	urface (F7	)	<sup>3</sup> Indicators	of hydrophytic vegetation and
Sandy M	Aucky Mineral (S1)		Redox	Depressio	ons (F8)		wetland	d hydrology must be present,
5 cm Mu	ucky Peat or Peat (S	53)					unless	disturbed or problematic.
Restrictive	Layer (if observed)	:						
Туре:								
Depth (in	ches):						Hydric Soll	Present? Yes No
Remarks:								
	4 and F6 are met. <sup>-</sup>		been significantly	uistarbea	by moust	nar activity		
HYDROLO	GY							
	drology Indicators	:						
-	cators (minimum of		red: check all that a	(vlga			Seconda	ry Indicators (minimum of two required)
	Water (A1)		Water-Sta		/es (B9)			ace Soil Cracks (B6)
	ater Table (A2)		Aquatic F		· /			nage Patterns (B10)
✓ Saturati			True Aqua					Season Water Table (C2)
I —	larks (B1)		Hydrogen					/fish Burrows (C8)
	nt Deposits (B2)				• •	ing Roots		iration Visible on Aerial Imagery (C9)
1								••••
	posits (B3)		Presence					nted or Stressed Plants (D1)
	at or Crust (B4)		Recent Irc			a Solis (C	·	morphic Position (D2)
· - ·	posits (B5)		Thin Much				FAC	-Neutral Test (D5)
Inundati	on Visible on Aerial	Imagery (B)	· _ ·		. ,			
Sparsel	y Vegetated Concav	e Surface (l	38) Other (Ex	plain in R	emarks)			
Field Obser								
Surface Wat			No Depth (in			_		
Water Table			No Depth (in			_		_
Saturation P	resent?	res 🖌	No Depth (in	iches): 4.0	00	_ Wet	land Hydrolog	y Present? Yes 🔽 No
	corded Data (stream	n gauge, mo	onitoring well, aerial	photos, p	revious in	spections),	, if available:	
Remarka								
Remarks: Indicators are	e met.							

#### WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatm	City/County:	Wapello	County	Sampling Date: 20	20-05-27	
Applicant/Owner: Interstate Power and Light Compa			<sub>State:</sub> Iowa	Sampling Point: S	<b>P-2</b>	
Investigator(s): O. Haney, J. Maine		Section, To	wnship, Rai	nge: S26 T73N R15V	V	
Landform (hillslope, terrace, etc.): Hillslope						
Slope (%): <u>15.00</u> Lat: <u>41.094691</u>		Long: -92.	555635		Datum: NAD 83	
Soil Map Unit Name: Clinton silt loam, terrace, 5 to 9				NWI classific	ation: N/A	
Are climatic / hydrologic conditions on the site typical for this	time of ye	ar? Yes	No_	<ul> <li>(If no, explain in R</li> </ul>	emarks.)	
Are Vegetation, Soil, or Hydrology sig				Normal Circumstances"		No
Are Vegetation, Soil, or Hydrology na				eded, explain any answe		
SUMMARY OF FINDINGS – Attach site map s			a noint k	ocations transacts	important foat	uros oto
	-		g point it			uies, etc.
Hydrophytic Vegetation Present?       Yes No         Hydric Soil Present?       Yes No		Is th	e Sampled	Area		
Hydric Soil Present? Yes <u>Ves</u> No	<u> </u>	with		nd? Yes	No	
Wetland Hydrology Present? Yes No		with	ill a wella			
Remarks:						anatah.
SP-1 is an upland sample plot adjacent to PEM W-1. According to the sampling. Soil in the area h						
		Jighinoanay				
<b>VEGETATION</b> – Use scientific names of plants.						
	Absolute	Dominant	Indicator	Dominance Test work	sheet:	
· · · · · · · · · · · · · · · · · · ·	% Cover	Species?		Number of Dominant S	pecies	
1. Gleditsia triacanthos	35	<ul> <li>✓</li> </ul>	FACU	That Are OBL, FACW,		(A)
2. Acer saccharinum	10		FACW	Total Number of Damin		
3. Robinia pseudoacacia	10		FACU	Total Number of Domin Species Across All Stra	<b>^</b>	(B)
4				Percent of Dominant S		
5				That Are OBL, FACW,	or FAC: <u>17</u>	(A/B)
15 ft r	55%	= Total Cov	/er	Development of the second	1 - h 4	
Sapling/Shrub Stratum (Plot size: 15 ft r )	20		FACU	Prevalence Index wor		
1. Lonicera tatarica	10	· - •	FACU	Total % Cover of:	$\frac{\text{Multiply b}}{x \ 1 = 0}$	<u>by:</u>
2. Quercus imbricaria			FACU	OBL species 0 FACW species 35		—
3				· ·	$x 2 = \frac{70}{0}$	—
4		·		FAC species 0 FACU species 180		—
5	000/			0	-	— I
Herb Stratum (Plot size: 5 ft r )	30%	= Total Cov	ver			(D)
1. Solidago altissima	50	~	FACU	Column Totals: 215	(A) <u>790</u>	(B)
2. Lonicera tatarica	20	· · ·	FACU	Prevalence Index	= B/A = <u>3.7</u>	
3. Dichanthelium clandestinum	15		FACW	Hydrophytic Vegetation		
4. Galium aparine	15		FACU	1 - Rapid Test for I	Hydrophytic Vegetati	on
5. Cerastium fontanum	10		FACU	2 - Dominance Tes		

3 - Prevalence Index is ≤3.0 <sup>1</sup>	
---	--

4 - Morphological Adaptations <sup>1</sup> (Provide supporting
data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

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

Hydrophytic	
Vegetation	
Present?	Yes

Remarks: (Include photo numbers here or on a separate sheet.) No test is met. Photograph C-2.

6. Ambrosia artemisiifolia5FACU7. Rubus allegheniensis5FACU

)

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10. \_\_\_\_\_

1. Vitis riparia

2.

Woody Vine Stratum (Plot size: 30 ft r

No

120% = Total Cover

V

= Total Cover

10

10%

FACW

#### SOIL

Profile Desc	ription: (Describe	to the dept	th needed to docum	nent the i	indicator	or confirr	n the absence	of indicators.)		
Depth	 Matrix			k Feature						
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
0 - 4	N 2.5/	85	10YR 6/3	15	<u>C</u>	M	Clay loam			
<u>     4    6     </u>	10YR 6/6	70	10YR 6/3	30	<u>C</u>	M	Silty clay loam			
<u> </u>	N 2.5/	100					Silty clay loam	Rocks present		
-										
-										
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		lotion DM-		Maakaa			<sup>2</sup> l contion	N. DI - Dava Lizing M-Matrix		
Hydric Soil		letion, Rivi-	Reduced Matrix, MS	=masked	a Sand Gr	ains.		: PL=Pore Lining, M=Matrix. for Problematic Hydric Soils <sup>3</sup> :		
Histosol			Sandy G	Bleyed Ma	atrix (S4)			Prairie Redox (A16)		
	pipedon (A2)			edox (S5			Dark Surface (S7)			
Black Hi	stic (A3)		Stripped	Matrix (S	66)		Iron-Manganese Masses (F12)			
	n Sulfide (A4)				neral (F1)			Shallow Dark Surface (TF12)		
	Layers (A5)			Gleyed Ma			Other	(Explain in Remarks)		
	ick (A10) d Below Dark Surfac	e (A11)		d Matrix ( )ark Surfa	,					
	ark Surface (A12)	0 ((11)			Inface (F7)	)	<sup>3</sup> Indicators	<sup>3</sup> Indicators of hydrophytic vegetation and		
	lucky Mineral (S1)			epressio)				d hydrology must be present,		
	icky Peat or Peat (S	-					unless	disturbed or problematic.		
_	_ayer (if observed):									
Туре:							Hydric Soil	Present? Yes 🥓 No		
Depth (inc	ches):									
Remarks: Indicator F6	in mot									
Indicator Fo	is met.									
HYDROLO	GY									
	drology Indicators:									
			ed; check all that ap	nlv)			Seconda	ary Indicators (minimum of two required)		
	Water (A1)	ne is requi	Water-Stai		es (B9)			face Soil Cracks (B6)		
	iter Table (A2)		Aquatic Fa		· ·			inage Patterns (B10)		
Saturatio			True Aquat					-Season Water Table (C2)		
	arks (B1)		Hydrogen S					yfish Burrows (C8)		
Sedimer	nt Deposits (B2)		Oxidized R	hizosphe	res on Liv	ing Roots	(C3) Satu	uration Visible on Aerial Imagery (C9)		
Drift Dep	oosits (B3)		Presence of the second	of Reduce	ed Iron (C4	4)	Stur	nted or Stressed Plants (D1)		
Algal Ma	at or Crust (B4)		Recent Irol	n Reducti	on in Tille	d Soils (C	6) Geo	omorphic Position (D2)		
·	oosits (B5)		Thin Muck				FAC	C-Neutral Test (D5)		
	on Visible on Aerial I	•••	· _ ·							
	Vegetated Concave	e Surface (E	38) Other (Exp	ain in Re	emarks)					
Field Obser			No 🔽 Depth (inc	boo):						
Surface Wat										
Water Table Present? Yes No Depth (inches):						land Hydrolog	v Prosont2 Voc No V			
Saturation Present? Yes No V Depth (inches): Wetland Hydrology Present? Yes No V Includes capillary fringe)										
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:										
Remarks:										
No indicators are met.										

#### WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello County	Sampling Date: 2020-05-27
Applicant/Owner: Interstate Power and Light Company	State:	Iowa Sampling Point: SP-3
Investigator(s): O. Haney, J. Maine	Section, Township, Range: S26 T7	
Landform (hillslope, terrace, etc.): Depression	Local relief (concave, con	-
Slope (%): 2.00 Lat: 41.103930	Long: -92.552480	Datum: <u>NAD 83</u>
Soil Map Unit Name: Colo silty clay loan, 0 to 2 percent slope	es, occasionally flooded	IWI classification: <u>N/A</u>
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No (If no,	explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Normal Circu	mstances" present? Yes 🗾 No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (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	Is the Sampled Area
Wetland Hydrology Present?	Yes 🖌 No	within a Wetland? Yes No

Remarks:

SP-3 is in PEM W-2. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling.

VEGETATION - Use scientific names of plants.

00 <i>1</i>	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft r</u> )		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
15 # -		= Total Cov	/er	
Sapling/Shrub Stratum (Plot size: 15 ft r )	-			Prevalence Index worksheet:
1. Salix nigra			OBL	Total % Cover of: Multiply by:
2				OBL species <u>10</u> x 1 = <u>10</u>
3				FACW species <u>75</u> x 2 = <u>150</u>
4				FAC species <u>5</u> x 3 = <u>15</u>
5				FACU species <u>12</u> x 4 = <u>48</u>
- "	5%	= Total Cov	/er	UPL species 10 x 5 = 50
Herb Stratum (Plot size: <u>5 ft r</u> )	75		FACW	Column Totals: <u>112</u> (A) <u>273</u> (B)
1. Phalaris arundinacea	75	<u> </u>		0.4
2. Brassica juncea	10		UPL	Prevalence Index = B/A = 2.4
<sub>3.</sub> Poa annua	10		FACU	Hydrophytic Vegetation Indicators:
4. Salix nigra	5		OBL	✓ 1 - Rapid Test for Hydrophytic Vegetation
5. Viola sagittata	5		FAC	∠ 2 - Dominance Test is >50%
6. Asclepias syriaca	2		FACU	✓ 3 - Prevalence Index is $\leq 3.0^1$
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
9				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
10				
	107%	= Total Cov	/er	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 30 ft r )				be present, unless disturbed or problematic.
1				Hydrophytic
2				Vegetation
	= Total Cover			Present? Yes No
Remarks: (Include photo numbers here or on a separate	sheet.)			
Rapid test is met. Photograph C-3.				

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#### SOIL

Profile Desc	ription: (Describe	to the dep	th needed to docum	ent the	indicator	or confirm	the absence of	indicators.)
Depth	Matrix		Redox	Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 4	10YR 3/1	90	10YR 5/3	10	<u>C</u>	M	Silty clay loam	
<u> </u>	10YR 3/1	85	10YR 5/3	10	<u>C</u>	<u>M</u>	Silty clay loam	
4 <sup>-</sup> 12			7.5YR 4/6	5	С	Μ		
-								
-								
					·			
-								
		letion, RM	Reduced Matrix, MS	=Maske	d Sand Gra	ains.	<sup>2</sup> Location: I	PL=Pore Lining, M=Matrix. or Problematic Hydric Soils <sup>3</sup> :
Hydric Soil			Que du Q		1			-
Histosol	(A1) bipedon (A2)		Sandy G	-	atrix (S4)			airie Redox (A16) face (S7)
Black Hi	• • •			Matrix (	,			iganese Masses (F12)
	n Sulfide (A4)				neral (F1)			allow Dark Surface (TF12)
	Layers (A5)				atrix (F2)			xplain in Remarks)
	ıck (A10)		Depleted		,			
	Below Dark Surfac	e (A11)	Kedox D				3	
	ark Surface (A12) lucky Mineral (S1)		Depleted Redox D		urface (F7)			f hydrophytic vegetation and hydrology must be present,
_ /	icky Peat or Peat (S	3)		epressio	115 (1-0)			sturbed or problematic.
	_ayer (if observed):							
	ompact soil							
Depth (inc	ches): <u>12</u>						Hydric Soil Pi	resent? Yes 🦯 No
Remarks:								
Indicator F6	is met. Excavation I	below 12"	prevented by compa	ct soil.				
HYDROLO	GY							
Wetland Hyd	drology Indicators:							
Primary Indic	ators (minimum of o	ne is requi	red; check all that ap	ply)			<u>Secondary</u>	Indicators (minimum of two required)
Surface	Water (A1)		Water-Stai	ned Leav	/es (B9)			e Soil Cracks (B6)
High Wa	ter Table (A2)		Aquatic Fa	,	,			ge Patterns (B10)
Saturatio			True Aquat					eason Water Table (C2)
	arks (B1)		Hydrogen S		• •			sh Burrows (C8)
	nt Deposits (B2)		Oxidized R					ation Visible on Aerial Imagery (C9)
· ·	oosits (B3)		Presence of					d or Stressed Plants (D1)
	at or Crust (B4) posits (B5)		Recent Iron Thin Muck			1 30115 (CO		orphic Position (D2) leutral Test (D5)
	on Visible on Aerial I	magery (B			. ,			
	Vegetated Concave		· _ ·		. ,			
Field Obser	0				,			
Surface Wat	er Present? Y	es	No Depth (inc	hes):				
Water Table			No Depth (inc					
Saturation Present? Yes No Version Depth (inches): Version Wetland Hydrology Present? Yes Version No						Present? Yes 🖌 No		
(includes capillary fringe)								
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Demarke								
Remarks:	met							
Indicators are	- 111 <b>C</b> L							

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#### WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Generating Station Pond Closure & Wastewater Treatment Project	ect City/County: Wapello County Sampling Date: 2020-05-27
Applicant/Owner: Interstate Power and Light Company	State: Iowa Sampling Point: SP-4
Investigator(s): O. Haney, J. Maine	Section, Township, Range: S26 T73N R15W
Landform (hillslope, terrace, etc.): Depression	Local relief (concave, convex, none): Concave
Slope (%): 2.00 Lat: 41.103907	Long:92.552372 Datum: NAD 83
Soil Map Unit Name: Colo silty clay loam, 0 to 2 percent s	lopes, occasionally flooded NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significa	intly disturbed? Are "Normal Circumstances" present? Yes 🔽 No
Are Vegetation, Soil, or Hydrology naturally	y problematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map show	ing 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

Wetland Hydrology Present?
Remarks:

SP-4 is in PSS W-16. W-16 is surrounded completely by PEM W-2. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. The soil was significantly disturbed by the presence of rock/sand fill.

Yes 🖌 No \_\_\_\_\_

VEGETATION - Use scientific names of plants.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft r )	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				
3				Total Number of Dominant Species Across All Strata: 2 (B)
				Species Across Air Strata. $\underline{-}$ (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
Combiner/Charak Streture (Distring) 15 ft r		= Total Cov	/er	Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15 ft r )	45	~	OBL	
1. Salix nigra				Total % Cover of: Multiply by:
2				OBL species $\frac{55}{22}$ x 1 = $\frac{55}{122}$
3				FACW species 90 x 2 = 180
4				FAC species $0$ x 3 = $0$
5				FACU species 0 x 4 = 0
		= Total Cov	/er	UPL species <u>10</u> x 5 = <u>50</u>
Herb Stratum (Plot size: <u>5 ft r</u> )		i otai oo		Column Totals: 155 (A) 285 (B)
1. Phalaris arundinacea	90	~	FACW	
2. Brassica juncea	10		UPL	Prevalence Index = B/A = <u>1.8</u>
3. Salix nigra	10		OBL	Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				✓ 2 - Dominance Test is >50%
6				✓ 3 - Prevalence Index is $\leq 3.0^1$
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
9				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
10				
10.	110%	= Total Cov		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	11070		ver	be present, unless disturbed or problematic.
				the decode of a
1				Hydrophytic Vegetation
2		= Total Cov		Present? Yes No
Demeriles (include whete numbers have as an exercise			ver	
Remarks: (Include photo numbers here or on a separate Rapid test is met. Photograph C-4.	sneet.)			
napiu lest is mel. Filologiaph 0-4.				

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Midwest Region - Version 2.0

# SOIL

Profile Desc	cription: (Describe	to the dep	oth needed to docu	ment the	indicator	or confir	m the absence	of indicators.)		
Depth Matrix Redox Features										
(inches)	Color (moist)	%	Color (moist)	%	_Type <sup>1</sup>	_Loc <sup>2</sup>	Texture	Remarks		
0-8	10YR 3/1	75	7.5YR 4/4	15	<u>C</u>	PL	Clay loam			
0-8			10YR 5/3	10	С	М				
8-14								Rock/Sand fill layer		
12-16	10YR 3/1	75	10YR 2/1	15	<u>C</u>	М	Clay loam	Rock fill present		
12-16			7.5YR 4/4	10	<u>C</u>	М				
<sup>1</sup> Type: C=C	oncentration, D=De	pletion, RM	=Reduced Matrix, M	IS=Maske	d Sand Gr	ains.	<sup>2</sup> Location	: PL=Pore Lining, M=Matrix.		
Hydric Soil	Indicators:						Indicators	for Problematic Hydric Soils <sup>3</sup> :		
Histosol	(A1)		Sandy	Gleyed M	atrix (S4)		Coast I	Prairie Redox (A16)		
Histic E	pipedon (A2)			Redox (S			Dark S	urface (S7)		
Black H	istic (A3)		Strippe	d Matrix (	S6)		Iron-Ma	anganese Masses (F12)		
Hydroge	en Sulfide (A4)		Loamy	Mucky Mi	neral (F1)		Very S	hallow Dark Surface (TF12)		
	d Layers (A5)			Gleyed M				Explain in Remarks)		
1	uck (A10)			ed Matrix (						
	d Below Dark Surfa	ce (A11)		Dark Surf	, ,					
	ark Surface (A12)	( )		ed Dark S	. ,	)	<sup>3</sup> Indicators	of hydrophytic vegetation and		
	Aucky Mineral (S1)			Depressio	,	,		hydrology must be present,		
	ucky Peat or Peat (	33)	_		( /			disturbed or problematic.		
	Layer (if observed	,								
	ompact/Fill									
Depth (in	ches): <u>16.00</u>						Hydric Soil	Present? Yes 🦯 No		
Remarks:	,									
								m 8"-14", there was a layer of 16", but refusal was met below 16".		
HYDROLO	GY									
Wetland Hy	drology Indicators	:								
Primary Indi	cators (minimum of	one is requ	ired; check all that a	pply)			Seconda	ry Indicators (minimum of two required)		
	Water (A1)			ained Leav	/es (B9)		Surf	ace Soil Cracks (B6)		
	ater Table (A2)		Aquatic F		· /			nage Patterns (B10)		
Saturati	· · /		True Aqu					Dry-Season Water Table (C2)		
	larks (B1)		Hydrogen		. ,			rfish Burrows (C8)		
1			✓ Oxidized			ing Deat				
I —	nt Deposits (B2)					•	· / <u>—</u>	iration Visible on Aerial Imagery (C9)		
I —	posits (B3)		Presence					ited or Stressed Plants (D1)		
	at or Crust (B4)		Recent Ir			d Solls (C		morphic Position (D2)		
· - ·	posits (B5)		Thin Muc				FAC	-Neutral Test (D5)		
	on Visible on Aerial	••••	· _ •		` '					
Sparsel	y Vegetated Concav	ve Surface (	B8) Other (Ex	plain in R	emarks)					
Field Obser										
Surface Wat	er Present?	Yes	No Depth (ir	nches):		_				
Water Table	Present?	Yes	No Depth (ir	nches):		_				
Saturation P	resent? pillary fringe)	Yes	No Depth (ir	nches):		_   We	tland Hydrology	/ Present? Yes 🔽 No		
		n gauge, m	onitoring well, aerial	photos, p	revious ins	spections)	), if available:			
Remarks:										
Indicators ar	e met.									

Project/Site: Ottumwa Generating Station Pond Closure & Wa	stewater Treatment	Project C	ity/County:	Wapello	County	Sampling Date:	2020-05-27	
Applicant/Owner: Interstate Power and Lig					State: Iowa		-	
			Section, Township, Range: S26 T73N R15W					
Landform (hillslope, terrace, etc.): Hillslope					concave, convex, none):			
							3	
Soil Map Unit Name: Colo silty clay loam, 0								
Are climatic / hydrologic conditions on the site typ								
Are Vegetation, Soil, or Hydrolog							No	
Are Vegetation, Soil, or Hydrolog					eded, explain any answer			
SUMMARY OF FINDINGS – Attach s						,	atures, etc.	
Hydrophytic Vegetation Present? Yes _	No	<ul> <li></li> </ul>						
	No			e Sampled				
	No	<u> </u>	withi	n a Wetlan	d? Yes	No		
Remarks: SP-5 is an upland sample plot adjacent to PEM moist conditions at the time of sampling. Soil ir								
VEGETATION – Use scientific names of	of plants.							
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u> ) 1	%	bsolute Cover	Dominant Species?		Dominance Test works Number of Dominant Sp That Are OBL, FACW, o	ecies	(A)	
2					Total Number of Domine			
3					Total Number of Domina Species Across All Strat	0	(B)	
4					Percent of Dominant Sp	ocios		
5					That Are OBL, FACW, o		(A/B)	
Sapling/Shrub Stratum (Plot size: 15 ft r	, –		= Total Cov	ər	Prevalence Index work	sheet.		
1	)				Total % Cover of:	Multiply	v by:	
2					OBL species 0	x 1 = 0		
3.					FACW species			
4					FAC species 60			
5.					FACU species 55			
			= Total Cov	er	UPL species 0	x 5 = 0		
<u>Herb Stratum</u> (Plot size: <u>5 ft r</u> ) 1 Poa pratensis	-	50	V	FAC	Column Totals: 115	(A) <u>400</u>	(B)	
2. Schedonorus arundinaceus		50	~	FACU	Prevalence Index	= B/A = 3.5		
3. Rubus allegheniensis		-		FACU	Hydrophytic Vegetatio			
4					1 - Rapid Test for H		ation	
5					2 - Dominance Test			
6					3 - Prevalence Inde			
7					4 - Morphological A		ide supporting	
8						or on a separate	·	
9					Problematic Hydrop	hytic Vegetation <sup>1</sup>	(Explain)	
10					1			
Woody Vine Stratum (Plot size: 30 ft r	)	15% =	= Total Cov	er	<sup>1</sup> Indicators of hydric soil be present, unless distu			
1					Hydrophytic			
2			= Total Cov	er	Vegetation Present? Yes	No	<u>~</u>	
Remarks: (Include photo numbers here or on a No test is met. Photograph C-5.	separate she	et.)						

# SOIL

Profile Desc	ription: (Describe	to the dep	th needed to docum	nent the	indicator	or confirm	n the absence	of indicators.)		
Depth	Matrix			Feature						
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
0-4	10YR 4/1	95	10YR 4/2	5	<u>D</u>	<u>M</u>	Clay loam			
4 - 10	10YR 4/1	100					Clay loam	Fill present		
-										
					·					
					·					
-										
-										
_										
	oncentration D=De	nletion RM:		=Masker	d Sand Gr	ains	<sup>2</sup> Location	PL=Pore Lining, M=Matrix.		
Hydric Soil			-rteduced matrix, mc	-waskey		anis.		for Problematic Hydric Soils <sup>3</sup> :		
Histosol			Sandy G	leved Ma	atrix (S4)			Prairie Redox (A16)		
	oipedon (A2)			edox (S5				urface (S7)		
· ·	istic (A3)			Matrix (				anganese Masses (F12)		
Hydroge	en Sulfide (A4)		Loamy N	lucky Mi	neral (F1)		Very S	hallow Dark Surface (TF12)		
Stratified	d Layers (A5)		Loamy C	Bleyed M	atrix (F2)		Other (	Other (Explain in Remarks)		
	uck (A10)			d Matrix (						
· ·	d Below Dark Surfa	ce (A11)		ark Surfa	. ,		2			
	ark Surface (A12)				urface (F7	)		of hydrophytic vegetation and		
·	Aucky Mineral (S1)	221	Redox L	epressio)	ns (F8)			d hydrology must be present, disturbed or problematic.		
	ucky Peat or Peat (S Layer (if observed						uniess	disturbed of problematic.		
Type: R		,.								
	ches): <u>10.00</u>						Hydric Soil	Present? Yes No		
	cries)10.00									
Remarks:	a are mat Everyot	ion holow 1	O" provented by real	/fill moto	rial					
No indicator	s are met. Excavat	I woisd noi	0" prevented by rock	/iii mate	mai.					
	<u></u>									
HYDROLO										
-	drology Indicators									
Primary India	cators (minimum of	one is requi	red; check all that ap					ry Indicators (minimum of two required)		
	Water (A1)		Water-Stai		, ,			ace Soil Cracks (B6)		
	ater Table (A2)		Aquatic Fa				Drainage Patterns (B10)			
Saturatio	on (A3)		True Aquat					Season Water Table (C2)		
	larks (B1)		Hydrogen		• •			/fish Burrows (C8)		
	nt Deposits (B2)		Oxidized R					iration Visible on Aerial Imagery (C9)		
· - ·	posits (B3)		Presence of					nted or Stressed Plants (D1)		
	at or Crust (B4)		Recent Iro			d Soils (C		morphic Position (D2)		
· ·	posits (B5)		Thin Muck				FAC	-Neutral Test (D5)		
	on Visible on Aerial		, <u> </u>							
<u> </u>	y Vegetated Conca	/e Surface (	B8) Other (Exp	ain in Re	emarks)					
Field Obser										
Surface Wat			No Depth (inc							
Water Table			No Depth (inc							
Saturation P		Yes	No 🔽 Depth (inc	:hes):		_   Wet	land Hydrology	y Present? Yes No		
(includes ca Describe Re		n daude mo	onitoring well, aerial p	hotos n	revious ins	pections)	if available:			
2000/100 110			entering tren, dendi p		011000110	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Remarks:										
No indicators	are met									

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello County	Sampling Date: 2020-05-27
Applicant/Owner: Interstate Power and Light Company	<sub>State:</sub> lowa	
Investigator(s): O. Haney, J. Maine	Section, Township, Range: S26 T73N R	
Landform (hillslope, terrace, etc.): Depression	Local relief (concave, convex, no	
Slope (%): 5.00 Lat: 41.103133	Long: -92.550658	Datum: NAD 83
Soil Map Unit Name: Colo silty clay loam, 0 to 2 percent slop	es, occasionally flooded NWI clas	ssification: N/A
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No (If no, explain	in Remarks.)
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Normal Circumstance	es" present? Yes 🔽 No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed, explain any an	swers 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	Is the Sampled Area		
Wetland Hydrology Present?	Yes 🖌	No	within a Wetland?	Yes 🔽	No

Remarks:

SP-6 is in PSS W-3. There is no upland sample plot taken adjacent to this wetland. The southern boundary of the wetland borders intermittent Stream (S)-3 and the northern boundary borders an unvegetated, actively maintained agricultural field. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling.

VEGETATION - Use scientific names of plants.

20.44 r	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft r</u> )		Species?		Number of Dominant Species
1. Salix nigra	10	<u> </u>	OBL	That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3				Species Across All Strata: 3 (B)
4				、
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)
···	10%	= Total Cov		That Are OBL, FACW, or FAC: <u>67</u> (A/B)
Sapling/Shrub Stratum (Plot size: 15 ft r )	1070	- Total Cov		Prevalence Index worksheet:
1. Salix nigra	65	~	OBL	Total % Cover of: Multiply by:
				OBL species         85         x 1 = 85
2				FACW species $10$ $x = 20$
3				
4				
5				FACU species $\frac{50}{2}$ x 4 = $\frac{200}{2}$
the second se	65%	= Total Cov	ver	UPL species <u>0</u> x 5 = <u>0</u>
Herb Stratum (Plot size: <u>5 ft r</u> )	50	~	FACU	Column Totals: <u>155</u> (A) <u>335</u> (B)
1. Galium aparine				
2. Ambrosia trifida	10		FAC	Prevalence Index = B/A = 2.2
3. Boehmeria cylindrica	10		OBL	Hydrophytic Vegetation Indicators:
4. Conium maculatum	5		FACW	1 - Rapid Test for Hydrophytic Vegetation
5. Vitis riparia	5		FACW	✓ 2 - Dominance Test is >50%
6				✓ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
7				data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
30 ft r	80%	= Total Cov	ver	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				
1				Hydrophytic
2				Vegetation Present? Yes <u>Ves</u> No
		= Total Cov	/er	
Remarks: (Include photo numbers here or on a separate	sheet.)			
Dominance test is met. Photograph C-6.				

# SOIL

SOIL								Sampling Point: 01 -0
Profile Desc	ription: (Describe	to the dep	th needed to docur	nent the	indicator	or confirn	n the absence o	of indicators.)
Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	_Loc <sup>2</sup>	Texture	Remarks
0-24	10YR 3/1	90	10YR 4/4	10	С	PL/M	Silty clay loam	
-								
——								
-								
-								
- <u>-</u>								
-								
		oletion, RM	=Reduced Matrix, M	S=Maske	d Sand Gr	ains.		PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators f	or Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy (	Gleyed Ma	atrix (S4)		Coast P	rairie Redox (A16)
Histic Ep	pipedon (A2)		Sandy F	Redox (S5	5)		Dark Su	Irface (S7)
Black Hi	. ,			d Matrix (S	,			nganese Masses (F12)
	n Sulfide (A4)				neral (F1)			allow Dark Surface (TF12)
	d Layers (A5)			Gleyed M			Other (E	Explain in Remarks)
	ıck (A10)			d Matrix (				
· — ·	d Below Dark Surfac	æ (A11)		Dark Surfa			3	
	ark Surface (A12)				urface (F7	)		of hydrophytic vegetation and
· — ·	lucky Mineral (S1)	2)	Redox I	Depressio	ons (F8)			hydrology must be present,
	icky Peat or Peat (S Layer (if observed)	-						disturbed or problematic.
	Layer (II observed)	•						
Type:							Hvdric Soil F	Present? Yes 🖌 No
Depth (ind	ches):						-	
Remarks:								
Indicator F6	is met.							
HYDROLO	GY							
Wetland Hyd	drology Indicators:	:						
-			red: check all that ap	(vlac			Secondar	y Indicators (minimum of two required)
	Water (A1)		Water-Sta					ce Soil Cracks (B6)
	iter Table (A2)		Aquatic Fa		, ,			age Patterns (B10)
				•	,			<b>e</b>
	on (A3)		True Aqua					Season Water Table (C2)
	arks (B1)		Hydrogen					ish Burrows (C8)
	nt Deposits (B2)		Oxidized F			-		ration Visible on Aerial Imagery (C9)
I — ·	posits (B3)		Presence			,		ed or Stressed Plants (D1)
	at or Crust (B4)		Recent Iro	n Reduct	ion in Tille	d Soils (C6	·	norphic Position (D2)
Iron Dep	oosits (B5)		Thin Muck	Surface	(C7)		FAC-	Neutral Test (D5)
Inundation	on Visible on Aerial	Imagery (B	7) Gauge or	Well Data	(D9)			
Sparsely	Vegetated Concav	e Surface (	B8) Other (Exp	olain in Re	emarks)			
Field Obser								
Surface Wate			No Depth (in					
Water Table	Present? Y	′es	No 🔽 Depth (in	ches):		_		
Saturation P			No 🔽 Depth (in				and Hydrology	Present? Yes 🖌 No
(includes cap	oillary fringe)							
Describe Re	corded Data (stream	n gauge, mo	onitoring well, aerial	pnotos, pr	revious ins	spections),	it available:	

Remarks:

Indicators are met.

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater	Treatment Project	City/County:	Wapello	County	Sampling Date:	2020-05-27
Applicant/Owner: Interstate Power and Light Con	er: Interstate Power and Light Company					SP-7
Investigator(s): O. Haney, J. Maine		Section, Township, Range: S26 T73N R15W				
Landform (hillslope, terrace, etc.): Depression				(concave, convex, none):		
Slope (%): 0.00 Lat: 41.095438		Long: <u>-92.</u>	552512		Datum: NAD 8	3
Soil Map Unit Name: Ladoga silt loam, terrace, 2				NWI classific	ation: N/A	
Are climatic / hydrologic conditions on the site typical for	this time of ye	ar? Yes	No	(If no, explain in Re	emarks.)	
Are Vegetation, Soil, or Hydrology		disturbed?	Are "	Normal Circumstances" p	resent? Yes	No
Are Vegetation, Soil, or Hydrology	naturally pro	oblematic?	(lf ne	eded, explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach site ma	ap showing	sampling	g point l	ocations, transects	, important fe	atures, etc.
Hydrophytic Vegetation Present? Yes	No					
Hydric Soil Present? Yes 🔽	No		e Sampled			
	No	with	in a Wetlar	nd? Yes	No	-
Remarks: SP-7 is in PEM W-4. An upland sample plot was not	akon adiacon	t to this wet	and The w	etland basin was surrou	nded by spoils pi	
roads. According to the Palmer Drought Severity Inde sample was not taken.						
· · ·	ato					
VEGETATION – Use scientific names of plan	Absolute	Dominant	Indicator	Dominance Test works	aboot	
Tree Stratum (Plot size: <u>30 ft r</u> )		Species?		Number of Dominant Sp		
1				That Are OBL, FACW, o		(A)
2				Total Number of Domina		
3				Species Across All Stra	ta: <u>2</u>	(B)
4		·		Percent of Dominant Sp		
5		= Total Cov		That Are OBL, FACW, o	or FAC: 100	(A/B)
Sapling/Shrub Stratum (Plot size: 15 ft r	)	10tai 00v		Prevalence Index work	ksheet:	
1				Total % Cover of:		y by:
2					$x_1 = \frac{15}{100}$	<u> </u>
3				FACW species <u>60</u>		
4		·		FAC species 0 FACU species 0		
5		= Total Cov		UPL species 0		
Herb Stratum (Plot size: <u>5 ft r</u> )		10tai 00v		75	(A) 135	
1. Phragmites australis	60	<ul> <li>✓</li> </ul>	FACW			(=/
2. Eleocharis obtusa	15	· _ /	OBL	Prevalence Index		
3				Hydrophytic Vegetatio		
4				<ul> <li>✓ 1 - Rapid Test for H</li> <li>✓ 2 - Dominance Test</li> </ul>		ation
5				✓ 3 - Prevalence Inde		
6 7				4 - Morphological A		ide supporting
8					or on a separate	
9				Problematic Hydrop	phytic Vegetation <sup>1</sup>	(Explain)
10				1		
20 ft r	75%	= Total Cov	ver	<sup>1</sup> Indicators of hydric soil be present, unless distu		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft r</u> )						
1				Hydrophytic Vegetation		
£		= Total Cov	/er	Present? Yes	s 🖌 No	
Remarks: (Include photo numbers here or on a separa	ate sheet.)			1		
Rapid test is met. Photograph C-7.						

Profile Description: (Des	cribe to the depth	needed to docu	ment the i	ndicator	or confirm	the absence of	indicators.)
Depth Ma	itrix	Red	ox Feature	S			
(inches) Color (moi	st) %	Color (moist)		4	Loc <sup>2</sup>	Texture	Remarks
-							
<u> </u>							
-							
		- due - d Martain M				21	
<sup>1</sup> Type: C=Concentration, E Hydric Soil Indicators:	Depletion, RM=R	educed Matrix, M	IS=Masked	Sand Gra	ains.		PL=Pore Lining, M=Matrix. r Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)		Sondy	Cloved Me	triv (CA)			airie Redox (A16)
Histic Epipedon (A2)			Gleyed Ma Redox (S5			Dark Surf	
Black Histic (A3)			ed Matrix (S				ganese Masses (F12)
Hydrogen Sulfide (A4)			Mucky Mir				llow Dark Surface (TF12)
Stratified Layers (A5)			Gleyed Ma				(plain in Remarks)
2 cm Muck (A10)			ed Matrix (I				. ,
Depleted Below Dark S	Surface (A11)	Redox	Dark Surfa	ice (F6)			
Thick Dark Surface (A	,		ed Dark Su				hydrophytic vegetation and
Sandy Mucky Mineral (	,	Redox	Depressio	ns (F8)			ydrology must be present,
5 cm Mucky Peat or Pe						unless dis	sturbed or problematic.
Restrictive Layer (if obse							
Туре:		_				Hydric Soil Pr	resent? Yes 🖌 No
Depth (inches):						Inyune Son Pr	
Remarks:							
A soil sample was not take	en. Soil is assumed	to be hydric due	e to the pre	evalence o	of wetland	hydrology indica	tors and hydrophytic vegetation.
HYDROLOGY							
Wetland Hydrology Indica	ators:						
Primary Indicators (minimu	m of one is required	d: check all that a	(vlaa			Secondary	Indicators (minimum of two required)
Surface Water (A1)			ained Leav	es (B9)			e Soil Cracks (B6)
High Water Table (A2)			auna (B13	, ,			ge Patterns (B10)
Saturation (A3)			atic Plants	,			eason Water Table (C2)
Water Marks (B1)			Sulfide O	. ,			sh Burrows (C8)
Sediment Deposits (B2	2)	_ , ,	Rhizosphe	. ,	ing Roots		tion Visible on Aerial Imagery (C9)
Drift Deposits (B3)	-/		of Reduce		•	· / <u>—</u>	d or Stressed Plants (D1)
Algal Mat or Crust (B4)			on Reducti				orphic Position (D2)
Iron Deposits (B5)			k Surface (			·	eutral Test (D5)
Inundation Visible on A	erial Imagery (B7)		Well Data				
Sparsely Vegetated Co	••••	_ •	plain in Re	. ,			
Field Observations:				markoj			
Surface Water Present?		Depth (ir		0			
					-		
Water Table Present?		Depth (ir			-		
Saturation Present? (includes capillary fringe)	Yes No	Depth (ir	nches): 0.0	0	_   Wetl	and Hydrology P	Present? Yes V No
Describe Recorded Data (s	tream gauge, moni	toring well, aerial	photos, pr	evious ins	pections).	if available:	
					. ,,		
Remarks:							
Indicators are met.							

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello C	ounty	Sampling Date: 2020-05-27
Applicant/Owner: Interstate Power and Light Company		State: Iowa	Sampling Point: SP-8
Investigator(s): O. Haney, J. Maine	Section, Township, Range		
Landform (hillslope, terrace, etc.): Depression		ncave, convex, none):	
Slope (%): 0.00 Lat: 41.095695	Long: -92.552161		Datum: NAD 83
Soil Map Unit Name: Ladoga silt loam, terrace, 2 to 5 percen	t slopes	NWI classific	cation: <u>N</u> /A
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No	(If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "No	rmal Circumstances"	present? Yes 🖌 No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If need	ed, explain any answe	ers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes No No	
Hydric Soil Present?	Yes V No	Is the Sampled Area
Wetland Hydrology Present?	Yes 🖌 No	within a Wetland? Yes <u>V</u> No
		1

Remarks:

SP-8 is in PEM W-5. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.

**VEGETATION** – Use scientific names of plants.

00.4	Absolute		Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft r</u> )	<u>% Cover</u>	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
		= Total Co		That Are OBL, FACW, or FAC: 100 (A/B)
Sapling/Shrub Stratum (Plot size: 15 ft r )		- 10(a) 00	Vei	Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species 35 x 1 = 35
				FACW species 60 x 2 = 120
3				FAC species $0 \times 3 = 0$
4				FACU species $0 \times 4 = 0$
5				UPL species $0$ x 5 = $0$
Herb Stratum (Plot size: <u>5 ft r</u> )		= Total Co	ver	
1 Phragmites australis	50	~	FACW	Column Totals: <u>95</u> (A) <u>155</u> (B)
2. Eleocharis acicularis	35	~	OBL	Prevalence Index = B/A = <u>1.6</u>
3 Echinochloa crus-galli	10		FACW	Hydrophytic Vegetation Indicators:
· · ·				<ul> <li>1 - Rapid Test for Hydrophytic Vegetation</li> </ul>
4				✓ 2 - Dominance Test is >50%
5				✓ 3 - Prevalence Index is $\leq 3.0^{1}$
6				
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: _30 ft r)	95%	= Total Co	ver	be present, unless disturbed or problematic.
1			·	Hydrophytic Vegetation
2				Present? Yes No
		= Total Co	ver	
Remarks: (Include photo numbers here or on a separate	sheet.)			
Rapid test is met. Photograph C-8.				

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Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)						
Depth Matrix	Redox Features					
(inches) Color (moist) %	Color (moist)%Type <sup>1</sup> _ l	_oc <sup>2</sup> Texture Remarks				
-						
· · · · · · · · · · · · · · · · · · ·						
-						
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Re	educed Matrix, MS=Masked Sand Grains					
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :				
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)				
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)				
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)				
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)				
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	✓ Other (Explain in Remarks)				
2 cm Muck (A10)	Depleted Matrix (F3)					
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	<sup>3</sup> Indiastors of hydrophytic vegetation and				
Thick Dark Surface (A12) Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7) Redox Depressions (F8)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present,				
5 cm Mucky Peat or Peat (S3)		unless disturbed or problematic.				
Restrictive Layer (if observed):						
Type:						
	—	Hydric Soil Present? Yes No				
Depth (inches):						
Remarks:						
A soil sample was not taken. Soil is assumed	to be hydric due to the prevalence of w	vetland hydrology indicators and hydrophytic vegetation.				
HYDROLOGY						
Wetland Hydrology Indicators:						
Primary Indicators (minimum of one is required	: check all that apply)	Secondary Indicators (minimum of two required)				
Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)				
High Water Table (A2)	Aquatic Fauna (B13)	✓ Drainage Patterns (B10)				
Saturation (A3)	True Aquatic Plants (B14)	Dry-Season Water Table (C2)				
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Sediment Deposits (B2)	Oxidized Rhizospheres on Living					
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)				
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled S					
Alga Mat of Crust (B4) Iron Deposits (B5)	Thin Muck Surface (C7)	✓ FAC-Neutral Test (D5)				
Inundation Visible on Aerial Imagery (B7)	Gauge or Well Data (D9)	► PAC-Neutral Test (D5)				
	<b></b> •					
Sparsely Vegetated Concave Surface (B8)	) Other (Explain in Remarks)					
Field Observations:						
	Depth (inches):					
	Depth (inches):					
	Depth (inches):	Wetland Hydrology Present? Yes No				
(includes capillary fringe) Describe Recorded Data (stream gauge, monit	toring well aerial photos, previous inspec	tions) if available:				
Beechbe Recorded Bata (Stream gauge, Monit						
Demortes						
Remarks:						
Indicators are met.						

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello Count	У	Sampling Date: 2020-05-27
Applicant/Owner: Interstate Power and Light Company		<sub>itate:</sub> Iowa	Sampling Point: SP-9
Investigator(s): O. Haney, J. Maine	Section, Township, Range: S2		
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concav		-
Slope (%): 5.00 Lat: 41.095794	Long: -92.551273		Datum: NAD 83
Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent	slopes	NWI classific	cation: <u>N</u> /A
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No (	f no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Normal	Circumstances"	present? Yes 🔽 No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed, e	xplain any answe	ers in Remarks.)
			to a set of the strength of the

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

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

Remarks:

SP-9 is an upland sample plot adjacent to PEM W-5. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.

**VEGETATION** – Use scientific names of plants.

00.4	Absolute		Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft r</u> )	% Cover			Number of Dominant Species
1				That Are OBL, FACW, or FAC: $\underline{0}$ (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)
		= Total Co	ver	
Sapling/Shrub Stratum (Plot size: 15 ft r )				Prevalence Index worksheet:
1				Total % Cover of:Multiply by:
2				OBL species 0 x 1 = 0
3.				FACW species 0 x 2 = 0
4				FAC species 10 x 3 = 30
5				FACU species 65 x 4 = 260
ö		= Total Co	ver	UPL species 30 x 5 = 150
Herb Stratum (Plot size: <u>5 ft r</u> )		- 10(a) 00	401	Column Totals: 105 (A) 440 (B)
1. Bromus inermis	60	~	FACU	
2. Brassica juncea	30	~	UPL	Prevalence Index = B/A = <u>4.2</u>
3. Poa pratensis	10		FAC	Hydrophytic Vegetation Indicators:
4 Dipsacus fullonum	5		FACU	1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10	105%	= Total Co		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	10376	= Total Co	ver	be present, unless disturbed or problematic.
1,				I hadron shouting
2				Hydrophytic Vegetation
2		= Total Co		Present? Yes No
Remarks: (Include photo numbers here or on a separate s		- Total Co	ver	
No test is met. Photograph C-9.	sneet.)			

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Profile Description: (Describe to the dep	th needed to document the ir	dicator or confirm	the absence of indi	cators )
Depth Matrix	Redox Features			54(6)(5))
(inches) Color (moist) %	Color (moist) %	Type <sup>1</sup> Loc <sup>2</sup>	Texture	Remarks
-				
· · · · · · · · · · · · · · · · · · ·				
-				
<u> </u>				
<u> </u>				
<sup>1</sup> Type: C=Concentration, D=Depletion, RM	=Reduced Matrix, MS=Masked	Sand Grains.		ore Lining, M=Matrix.
Hydric Soil Indicators:				blematic Hydric Soils <sup>3</sup> :
Histosol (A1)	Sandy Gleyed Mat		Coast Prairie F	. ,
Histic Epipedon (A2) Black Histic (A3)	Sandy Redox (S5) Stripped Matrix (S6		Dark Surface (	se Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Min	,		Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Ma		Other (Explain	
2 cm Muck (A10)	Depleted Matrix (F			, , , , , , , , , , , , , , , , , , , ,
Depleted Below Dark Surface (A11)	Redox Dark Surfac	ce (F6)		
Thick Dark Surface (A12)	Depleted Dark Sur	face (F7)	<sup>3</sup> Indicators of hydr	ophytic vegetation and
Sandy Mucky Mineral (S1)	Redox Depression	s (F8)	-	ogy must be present,
5 cm Mucky Peat or Peat (S3)			unless disturb	ed or problematic.
Restrictive Layer (if observed):				
Туре:			Hydric Soil Presen	t? Yes No
Depth (inches):				
Remarks:				
A soil sample was not taken. Soil is not as	sumed to be hydric due to the	lack of wetland hyd	rology indicators and	hydrophytic vegetation.
HYDROLOGY				
Wetland Hydrology Indicators:				
Primary Indicators (minimum of one is requ	red; check all that apply)		Secondary Indic	ators (minimum of two required)
Surface Water (A1)	Water-Stained Leave	s (B9)	Surface Soi	
High Water Table (A2)	Aquatic Fauna (B13)	, ,	Drainage Pa	, ,
Saturation (A3)	True Aquatic Plants (			Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Od	,	Crayfish Bu	rrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospher	es on Living Roots (		/isible on Aerial Imagery (C9)
Drift Deposits (B3)	Presence of Reduced	d Iron (C4)	Stunted or S	Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction	n in Tilled Soils (C6)	) Geomorphic	Position (D2)
Iron Deposits (B5)	Thin Muck Surface (0	27)	FAC-Neutra	l Test (D5)
Inundation Visible on Aerial Imagery (B	7) Gauge or Well Data (	D9)		
Sparsely Vegetated Concave Surface (	B8) Other (Explain in Rer	narks)		
Field Observations:				
Surface Water Present? Yes	No Depth (inches):			
	No Depth (inches):			
	No Depth (inches):		nd Hydrology Prese	nt? Yes No
(includes capillary fringe)				
Describe Recorded Data (stream gauge, m	onitoring well, aerial photos, pre	vious inspections), i	f available:	
1				
Remarks:				
Remarks: No indicators are met.				

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello Co	unty	Sampling Date:	2020-05-28
Applicant/Owner: Interstate Power and Light Company			Sampling Point:	
Investigator(s): O. Haney, J. Maine	Section, Township, Range:			
Landform (hillslope, terrace, etc.): Depression		cave, convex, none):		
Slope (%): 1.00 Lat: 41.095862	Long: -92.550942		Datum: NAD 8	33
Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent	slopes	NWI classific		
Are climatic / hydrologic conditions on the site typical for this time of ye	ear?YesNo	_ (If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Norn	nal Circumstances" p	oresent? Yes	✓ No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed	l, explain any answe	rs in Remarks.)	

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

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

SP-10 is an upland sample plot adjacent to PEM W-5. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.

VEGETATION - Use scientific names of plants.

00 (	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft r )	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)
		= Total Cov	/er	、
Sapling/Shrub Stratum (Plot size: 15 ft r )				Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species 0 x 1 = 0
3				FACW species 0 x 2 = 0
4				FAC species 0 x 3 = 0
5				FACU species 150 x 4 = 600
		= Total Cov		UPL species 10 x 5 = 50
Herb Stratum (Plot size: <u>5 ft r</u> )		10101 00		Column Totals: 160 (A) 650 (B)
1. Erigeron canadensis	45	<u> </u>	FACU	
2. Trifolium repens	40	~	FACU	Prevalence Index = B/A = 4.1
3. Thlaspi arvense	25		FACU	Hydrophytic Vegetation Indicators:
4. Medicago lupulina	20		FACU	1 - Rapid Test for Hydrophytic Vegetation
5. Solidago altissima	20		FACU	2 - Dominance Test is >50%
6. Pastinaca sativa	10		UPL	3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
9				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
10	160%	= Total Cov		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	10070		ver	be present, unless disturbed or problematic.
1				Hydrophytic
2				Vegetation
		= Total Cov	/er	Present? Yes No V
Remarks: (Include photo numbers here or on a separate s	sheet.)			
No test is met. Photograph C-10.				

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Profile Description: (Describe to the depth	needed to document the indicator or o	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	<u>Color (moist)</u> <u>%</u> <u>Type<sup>1</sup> l</u>	Loc <sup>2</sup> Texture Remarks
-		
-		
\   \  \qquad   \  \qquad  \   \  \qquad  \qquad  \   \  \qquad  \  \qquad  \  \qquad  \qquad \qquad \qquad \qquad		
·		
-		
·		
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=R	educed Matrix, MS=Masked Sand Grains	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and
Thick Dark Surface (A12) Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7) Redox Depressions (F8)	wetland hydrology must be present,
5 cm Mucky Peat or Peat (S3)		unless disturbed or problematic.
Restrictive Layer (if observed):		
Type:		
	—	Hydric Soil Present? Yes No
Depth (inches):	—	
Remarks:		and hydrology indicators and hydrophytic vegetation.
HYDROLOGY		
Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required	d; check all that apply)	Secondary Indicators (minimum of two required)
Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Drainage Patterns (B10)
Saturation (A3)	True Aquatic Plants (B14)	Dry-Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living	
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled S	
Iron Deposits (B5)	Thin Muck Surface (C7)	FAC-Neutral Test (D5)
Inundation Visible on Aerial Imagery (B7)	Gauge or Well Data (D9)	
Sparsely Vegetated Concave Surface (B8	•	
Field Observations:	, <u> </u>	
	Depth (inches):	
	Depth (inches):	
Saturation Present? Yes No (includes capillary fringe) Describe Recorded Data (stream gauge, moni	o Depth (inches):	Wetland Hydrology Present? Yes No
Remarks:		
Indicator D2 is met.		

Project/Site:Ottumwa Generating Station Pond Closure & Wastewater Treatm	nent Project	City/County	: Wapello	County	Sampling Date: 2	2020-05-28
Applicant/Owner: Interstate Power and Light Compa				State: Iowa		SP-11
Investigator(s): O. Haney, J. Maine		Section, To	wnship, Ra	nge: <u>S26 T73N R15W</u>	/	
Landform (hillslope, terrace, etc.): Depression				(concave, convex, none):		
Slope (%): 0.00 Lat: 41.096471		Long: <u>-92</u>	.551375		Datum: NAD 83	
Soil Map Unit Name: Givin silt loam, benches, 2 to 5				NWI classific	ation: <u>N/A</u>	
Are climatic / hydrologic conditions on the site typical for this	time of ye	ar? Yes	No	<ul> <li>(If no, explain in R</li> </ul>	emarks.)	
Are Vegetation, Soil, or Hydrology si	ignificantly	disturbed?	Are "	Normal Circumstances" p	oresent?Yes 🗹	No
Are Vegetation, Soil, or Hydrology n	aturally pro	blematic?	(lf ne	eded, explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point le	ocations, transects	, important fea	atures, etc.
Hydrophytic Vegetation Present? Yes No	o					
Hydric Soil Present? Yes V			e Sampled			
Wetland Hydrology Present? Yes <u>V</u> No	o	with	iin a Wetlar	nd? Yes	No	
Remarks: SP-11 is in PEM W-7. An upland sample plot was not tak	en adiacer	nt to this we	etland. beca	use the wetland was bo	rdered by PUB W-	6 and spoils
piles. According to the Palmer Drought Severity Index the sample was not taken.						
VEGETATION – Use scientific names of plants.						
VEGETATION – Ose scientific names of plants.	Absolute	Dominant	Indicator	Dominance Test work	shoot.	
Tree Stratum (Plot size: 30 ft r )		Species?		Number of Dominant Sp		
1				That Are OBL, FACW,		(A)
2				Total Number of Domin	ant	
3				Species Across All Stra	ta: <u>1</u>	(B)
4				Percent of Dominant Sp		
5		= Total Co		That Are OBL, FACW, o	or FAC: 100	(A/B)
Sapling/Shrub Stratum (Plot size: 15 ft r )		- 10tal C0	Vei	Prevalence Index wor	ksheet:	
1				Total % Cover of:		by:
2					x 1 = 0	
3				FACW species 75		
4					x 3 = 0	
5				FACU species 0		
Herb Stratum (Plot size: <u>5 ft r</u> )		= Total Co	ver	75	$x 5 = \frac{0}{(A)}$ 150	(P)
1. Phragmites australis	75	~	FACW		(A) <u>100</u>	(B)
2.				Prevalence Index	= B/A = <u>2.0</u>	
3				Hydrophytic Vegetatio	on Indicators:	
4				L 1 - Rapid Test for ⊢		tion
5				2 - Dominance Tes		
6				3 - Prevalence Inde		
7				4 - Morphological A	daptations' (Provie s or on a separate s	
8				Problematic Hydrop		
9					,	(
10	75%			<sup>1</sup> Indicators of hydric soi		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	1370	= Total Co	ver	be present, unless distu	irbed or problemati	ic.
1				Hydrophytic		
2				Vegetation	<b>v</b>	
		= Total Co	ver	Present? Yes	s No	_
Remarks: (Include photo numbers here or on a separate s Rapid test is met. Photograph C-11.	heet.)					

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)						
Depth <u>Matrix</u>	Redox Features	- 2				
(inches) Color (moist) %	<u>Color (moist)</u> % <u>Type<sup>1</sup></u>	Loc <sup>2</sup> Texture	Remarks			
-						
-						
	RM=Reduced Matrix, MS=Masked Sand Grain		Pore Lining, M=Matrix.			
Hydric Soil Indicators:			roblematic Hydric Soils <sup>3</sup> :			
Histosol (A1)	Sandy Gleyed Matrix (S4)		e Redox (A16)			
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surfac	. ,			
Black Histic (A3) Hydrogen Sulfide (A4)	Stripped Matrix (S6) Loamy Mucky Mineral (F1)		nese Masses (F12) v Dark Surface (TF12)			
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	✓ Other (Explanation)	· ·			
2 cm Muck (A10)	Depleted Matrix (F3)		in in Kemarkay			
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)					
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	<sup>3</sup> Indicators of hy	drophytic vegetation and			
Sandy Mucky Mineral (S1)	Redox Depressions (F8)	wetland hydr	ology must be present,			
5 cm Mucky Peat or Peat (S3)		unless distu	rbed or problematic.			
Restrictive Layer (if observed):						
Туре:		Hydric Soil Pres	ent? Yes 🖌 No			
Depth (inches):		Hydric Soli Fres				
Remarks:		· · · ·				
HYDROLOGY						
Wetland Hydrology Indicators:						
Primary Indicators (minimum of one is re	quired; check all that apply)	Secondary Inc	licators (minimum of two required)			
Surface Water (A1)	Water-Stained Leaves (B9)	Surface S	oil Cracks (B6)			
High Water Table (A2)	Aquatic Fauna (B13)	💆 Drainage	Patterns (B10)			
Saturation (A3)	True Aquatic Plants (B14)	Dry-Seas	on Water Table (C2)			
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish E	Burrows (C8)			
Sediment Deposits (B2)	Oxidized Rhizospheres on Living	g Roots (C3) Saturation	v Visible on Aerial Imagery (C9)			
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Stunted o	r Stressed Plants (D1)			
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled \$	Soils (C6) 🛛 🖌 Geomorp	hic Position (D2)			
Iron Deposits (B5)	Thin Muck Surface (C7)	Y FAC-Neu	tral Test (D5)			
Inundation Visible on Aerial Imagery	(B7) Gauge or Well Data (D9)					
Sparsely Vegetated Concave Surfac	e (B8) Other (Explain in Remarks)					
Field Observations:	_					
	_ No Depth (inches):					
Water Table Present? Yes	_ No Depth (inches):					
	_ No _ Cepth (inches):	Wetland Hydrology Pres	sent? Yes 🖌 No			
(includes capillary fringe)	monitoring well, aerial photos, previous inspe	octions) if available:				
Describe Recorded Data (stream gauge,	monitoring weil, aenai priotos, previous inspe	cuons), il avallable.				
Remarks:						
Indicators are met.						

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello Co	unty	Sampling Date:	2020-05-28
Applicant/Owner: Interstate Power and Light Company			Sampling Point:	
Investigator(s): O. Haney, J. Maine	Section, Township, Range:			
Landform (hillslope, terrace, etc.): Hillslope		cave, convex, none):	-	
Slope (%): 2.00 Lat: 41.095387	Long: -92.550681		Datum: NAD 8	3
Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent	slopes	NWI classific	ation: N/A	
Are climatic / hydrologic conditions on the site typical for this time of ye	ear?Yes No 🔽	_ (If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Norn	nal Circumstances" p	oresent? Yes	✓ No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed	l, explain any answe	rs in Remarks.)	
		_		

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

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

Remarks:

SP-12 is an upland sample plot adjacent to PEM W-5. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.

VEGETATION - Use scientific names of plants.

00.4	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft r</u> )		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)
		= Total Cov	/er	
Sapling/Shrub Stratum (Plot size: 15 ft r )				Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species <u>0</u> x 1 = <u>0</u>
3				FACW species $0 \times 2 = 0$
4				FAC species 0 x 3 = 0
5				FACU species 110 x 4 = 440
		= Total Cov		UPL species $5$ x 5 = $25$
Herb Stratum (Plot size: 5 ft r)		- 10(a) 000		Column Totals: 115 (A) 465 (B)
1. Schedonorus arundinaceus	80	~	FACU	
2. Trifolium repens	20		FACU	Prevalence Index = B/A = 4.0
3. Poa annua	10		FACU	Hydrophytic Vegetation Indicators:
4 Pastinaca sativa	5		UPL	1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
				data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft r)	115%	= Total Cov	/er	be present, unless disturbed or problematic.
				Hadaadada
1				Hydrophytic Vegetation
2				Present? Yes No
Remarks: (Include photo numbers here or on a separate		= Total Cov	ler	
No test is met. The sample plot is within a mowed drivew	,	ranh C-12		
The test is met. The sample plot is within a mowed driver	ay. 1 110100	μαρί 0-12.		

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Profile Descripti	ion: (Describe	to the depth	needed to doc	ument the i	indicator	or confirm	n the absence o	f indicators.)	
Depth	Matrix			dox Feature					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	_Loc <sup>2</sup>	Texture	Remar	ks
					·				
-									
-									
-									
					·				
<sup>1</sup> Type: C=Conce Hydric Soil India		pletion, RM=R	Reduced Matrix, I	MS=Masked	d Sand Gra	ains.		PL=Pore Lining, M= or Problematic Hyd	
Histosol (A1)			Sandy	Gleyed Ma	atrix (SA)			rairie Redox (A16)	ne sons .
Histic Epiped				Redox (S5				rface (S7)	
Black Histic				ed Matrix (S				nganese Masses (F1	2)
Hydrogen Sι	ulfide (A4)		Loam	y Mucky Mir	neral (F1)			allow Dark Surface (	
Stratified Lay				y Gleyed Ma			Other (E	xplain in Remarks)	
2 cm Muck (	,	- (0.1.1)		ted Matrix (					
	low Dark Surfac Surface (A12)	ce (A11)		ເ Dark Surfa ted Dark Sເ	. ,		<sup>3</sup> Indicators of	of hydrophytic vegeta	ation and
	y Mineral (S1)			C Depressio				hydrology must be p	
·	Peat or Peat (S	3)	_					listurbed or problema	
Restrictive Laye	er (if observed)	:							
Туре:							Hydric Soil P	Procont? Voc	No
Depth (inches	s):						Hydric Soli P	resent? Yes	NO
Remarks:									
A soil sample wa	as not taken. S	oil is not assu	imed to be hydri	c due to the	e lack of w	etland hy	drology indicato	rs and hydrophytic v	regetation.
HYDROLOGY Wetland Hydrold									
-	07		di abaak all that	annlu)			Secondar	Indiactora (minimu	m of two required)
Primary Indicator		one is require						y Indicators (minimu	<u>n oi two required)</u>
Surface Water	. ,			tained Leav Fauna (B13	, ,			ce Soil Cracks (B6) age Patterns (B10)	
Saturation (A	. ,			uatic Plants	,			eason Water Table	(C2)
Water Marks	,			n Sulfide O	. ,			ish Burrows (C8)	(02)
Sediment De				Rhizosphe	• •	ing Roots		ation Visible on Aeria	al Imagery (C9)
Drift Deposit				e of Reduce				ed or Stressed Plant	
Algal Mat or	Crust (B4)		Recent I	ron Reducti	ion in Tille	d Soils (C	6) Geom	norphic Position (D2)	
Iron Deposits	s (B5)		Thin Mu	ck Surface (	(C7)		FAC-I	Neutral Test (D5)	
Inundation V	isible on Aerial	Imagery (B7)	Gauge o	r Well Data	(D9)				
Sparsely Veg	getated Concav	e Surface (B8	3) Other (E	xplain in Re	emarks)				
Field Observation			~						
Surface Water Pr			Depth (			_			
Water Table Pres			Depth (						
Saturation Prese (includes capillar		res No	Depth (	inches):		_   Wet	land Hydrology	Present? Yes	No
Describe Record		n gauge, mon	itoring well, aeria	l photos, pr	revious ins	pections),	, if available:		
	-		- 1						
Remarks:									
No indicators are	met.								

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello Cou	unty	Sampling Date:	2020-05-28
Applicant/Owner: Interstate Power and Light Company		State: Iowa	Sampling Point:	
Investigator(s): O. Haney, J. Maine	Section, Township, Range:	S26 T73N R15V		
Landform (hillslope, terrace, etc.): Depression		ave, convex, none)		
Slope (%): 0.00 Lat: 41.095417	Long: -92.550910	-	Datum: NAD 8	33
Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent	slopes	NWI classifie	cation: N/A	
Are climatic / hydrologic conditions on the site typical for this time of ye	ear?Yes No 🗹	_ (If no, explain in F	Remarks.)	
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Norm	al Circumstances"	present? Yes	✓ No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed	, explain any answe	ers in Remarks.)	

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

Hydric Soil Present?       Yes       V       No       Is the Sampled Area         Wetland Hydrology Present?       Yes       V       No       within a Wetland?       Yes       No	Hydrophytic Vegetation Present?	Yes No	
Wetland Hydrology Present? Yes 🖌 No within a Wetland? Yes _ No	Hydric Soil Present?	Yes No	Is the Sampled Area
	Wetland Hydrology Present?	Yes 🔽 No	within a Wetland? Yes Ves No

Remarks:

SP-13 is in PEM W-5. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.

VEGETATION - Use scientific names of plants.

00 # -	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft r )		Species?		Number of Dominant Species
1. Salix nigra	_ 10	<u> </u>	OBL	That Are OBL, FACW, or FAC: <u>3</u> (A)
2				
3.				Total Number of Dominant Species Across All Strata: 3 (B)
4				Percent of Dominant Species
5	100/			That Are OBL, FACW, or FAC: 100 (A/B)
Sapling/Shrub Stratum (Plot size: 15 ft r )	10%	= Total Co	ver	Prevalence Index worksheet:
1				
2				
3				FACW species 90 x 2 = 180
4				FAC species 0 x 3 = 0
5				FACU species 2 x 4 = 8
		= Total Co		UPL species 0 x 5 = 0
Herb Stratum (Plot size: <u>5 ft r</u> )		- 10(a) 00	401	Column Totals: 102 (A) 198 (B)
Phalaris arundinacea	50	~	FACW	
2. Phragmites australis	40	<ul> <li>✓</li> </ul>	FACW	Prevalence Index = B/A = <u>1.9</u>
3. Asclepias syriaca	2		FACU	Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
				✓ 2 - Dominance Test is >50%
5				✓ 3 - Prevalence Index is $\leq 3.0^{1}$
6				
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10				
aa //	92%	= Total Co	ver	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 30 ft r )				
1				Hydrophytic
2				Vegetation
		= Total Co	ver	Present? Yes No
Remarks: (Include photo numbers here or on a separate	sheet.)			
Rapid test is met. Photograph C-13.	-			
· • •				

SUL								Sampling Point: Or 10
Profile Descriptio	on: (Describe	to the depth n	eeded to docur	nent the ind	icator or c	onfirm	the absence of	of indicators.)
Depth	Matrix		Redo	x Features				
(inches) C	olor (moist)	%	Color (moist)		Гуре <sup>1</sup>	.oc <sup>2</sup>	Texture	Remarks
-								
-								
-								
-								
<sup>1</sup> Type: C=Concent		etion, RM=Re	duced Matrix, M	S=Masked Sa	and Grains			PL=Pore Lining, M=Matrix.
Hydric Soil Indica	ators:						Indicators 1	for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)			Sandy (	Gleyed Matrix	(S4)		Coast F	Prairie Redox (A16)
Histic Epipedo				Redox (S5)				urface (S7)
Black Histic (A	,			d Matrix (S6)				anganese Masses (F12)
<ul> <li>Hydrogen Sulf</li> </ul>				Mucky Minera				nallow Dark Surface (TF12)
Stratified Laye				Gleyed Matri			Other (I	Explain in Remarks)
2 cm Muck (A	,	( ) ( )		d Matrix (F3)				
Depleted Belo		e (A11)		Dark Surface d Dark Surfa	. ,		3 malia atawa	of hydrophytic vegetation and
Thick Dark Su Sandy Mucky				Depressions	· · /			hydrology must be present,
5 cm Mucky P	· · ·	0		Depressions	(10)			disturbed or problematic.
Restrictive Layer							uncoo	distarbed of problemate.
Type:	(11 00301 100).							
			-				Hydric Soil I	Present? Yes No
Depth (inches):			-					
Remarks:								
Indicator A4 is me	et. A soil sampl	e was not take	en.					
HYDROLOGY								
Wetland Hydrolog	av Indicators:							
Primary Indicators		ne is required <sup>.</sup>	check all that ar	(vla			Seconda	ry Indicators (minimum of two required)
✓ Surface Water		<u>ne is required,</u>			(BO)			
				ined Leaves	(09)			ace Soil Cracks (B6)
High Water Ta				auna (B13)			_	nage Patterns (B10)
Saturation (A3				tic Plants (B				Season Water Table (C2)
Water Marks (	,		Hydrogen		. ,			fish Burrows (C8)
Sediment Dep	. ,			Rhizospheres		Roots (C		ration Visible on Aerial Imagery (C9)
Drift Deposits	. ,			of Reduced I				ted or Stressed Plants (D1)
Algal Mat or C			Recent Irc	n Reduction	in Tilled So	oils (C6)		morphic Position (D2)
Iron Deposits	(B5)			Surface (C7			FAC-	-Neutral Test (D5)
	ible on Aerial I	••••	_ •	Well Data (D	,			
	etated Concave	Surface (B8)	Other (Exp	olain in Rema	arks)			
Field Observation								
Surface Water Pre	sent? Y	es 🖍 No _	Depth (in	ches): <u>3.00</u>				
Water Table Prese	ent? Y	es 🖌 No _	Depth (in	ches): <u>0.00</u>				
Saturation Present			Depth (in			Wetlar	nd Hydroloav	Present? Yes No
(includes capillary	fringe)							
Describe Recorded	d Data (stream	gauge, monito	ring well, aerial	photos, previ	ous inspec	tions), if	available:	

Remarks:

Indicators are met.

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello County	Sampling Date: 2020-05-28				
Applicant/Owner: Interstate Power and Light Company	State: Iowa	Sampling Point: SP-14				
Investigator(s): O. Haney, J. Maine	Section, Township, Range: S26 T73N R15W					
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, none):					
Slope (%): 8.00 Lat: 41.097059		Datum: NAD 83				
Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent	slopes NWI classific	ation: N/A				
Are climatic / hydrologic conditions on the site typical for this time of ye	re 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" p	resent? Yes 🖌 No				
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed, explain any answe	rs in Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present? Yes No						

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

Remarks:

SP-14 is an upland sample plot adjacent to PEM W-9. The sample plot is located on an overgrown berm with abandoned railroad tracks. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r ) $\%$ Cover Species? Status       Number of Dominant Species         1.
2.
3.
3.
4.
5.
Sapling/Shrub Stratum (Plot size: 15 ft r )     = Total Cover       1. Juniperus virginiana     5     ✓       2     GBL species     0
Sapling/Shrub Stratum (Plot size: 15 π r )       5       ✓       FACU       Prevalence Index worksheet:         1. Juniperus virginiana       5       ✓       FACU       Total % Cover of: OBL species       Multiply by: x 1 = 0
1.     Juniperus virginiana     5     ✓     FACU     Total % Cover of:     Multiply by:       2.
3 FACW species 0 x 2 = 0
Harb Obstance (Distained 5 ft r
$\frac{\text{Herb Stratum}}{1. \text{ Pastinaca sativa}} (\text{Plot size: } \frac{3 \text{ tr}}{1. \text{ Pastinaca sativa}} ) $ $45  \checkmark  \text{UPL}  \begin{bmatrix} \text{Column Totals: } \frac{120}{1. \text{ (A)}} & \frac{525}{1. \text{ (B)}} \end{bmatrix} $
2. Ambrosia artemisiifolia 20 ✓ FACU Prevalence Index = B/A = 4.4
3. Galium aparine 20 V FACU Hydrophytic Vegetation Indicators:
Poa annua     T5     FACU     1 - Rapid Test for Hydrophytic Vegetation
5. Schedonorus arundinaceus 15 FACU 2 - Dominance Test is >50%
data in Remarks or on a separate sheet)
8 Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9
10 115% 115% 116% 116% 10% 116% 10% 116% 10% 116% 10% 116% 10% 116% 10% 116%116%
10.70 = 10 dial Cover he present unless disturbed or problematic
Woody Vine Stratum (Plot size: 30 ft r )
1 Hydrophytic
2 Vegetation Present? Yes No
Remarks: (Include photo numbers here or on a separate sheet.)
No test is met. Photograph C-14.

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Profile Description: (Describe to the depth	needed to document the indicator or	confirm the absence of indicators.)	
Depth <u>Matrix</u>	Redox Features		
(inches) Color (moist) %	Color (moist) % Type <sup>1</sup>	_oc <sup>2</sup> Texture Remarks	
·			
-			
·			
-			
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=F	Reduced Matrix, MS=Masked Sand Grains	s. <sup>2</sup> Location: PL=Pore Lining, M=Matrix	
Hydric Soil Indicators:		Indicators for Problematic Hydric So	
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)	
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)	
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)	
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)	
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)	
2 cm Muck (A10) Depleted Below Dark Surface (A11)	Depleted Matrix (F3) Redox Dark Surface (F6)		
Depleted Below Dark Surface (ATT)	Redox Dark Surface (F6) Depleted Dark Surface (F7)	<sup>3</sup> Indicators of hydrophytic vegetation a	nd
Sandy Mucky Mineral (S1)	Redox Depressions (F8)	wetland hydrology must be present	
5 cm Mucky Peat or Peat (S3)	_	unless disturbed or problematic.	,
Restrictive Layer (if observed):			
Туре:			
Depth (inches):		Hydric Soil Present? Yes	No
Remarks:			
HYDROLOGY			
Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is require	d; check all that apply)	Secondary Indicators (minimum of tw	vo required)
Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)	
High Water Table (A2)	Aquatic Fauna (B13)	Drainage Patterns (B10)	
Saturation (A3)	True Aquatic Plants (B14)	Dry-Season Water Table (C2)	
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)	
Sediment Deposits (B2)	Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imag	jery (C9)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)	
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled S	oils (C6) Geomorphic Position (D2)	
Iron Deposits (B5)	Thin Muck Surface (C7)	FAC-Neutral Test (D5)	
Inundation Visible on Aerial Imagery (B7)			
Sparsely Vegetated Concave Surface (B8	<ol><li>Other (Explain in Remarks)</li></ol>		
Field Observations:			
	o Depth (inches):		
Water Table Present? Yes No	o Depth (inches):		
Saturation Present? Yes No (includes capillary fringe)	o Depth (inches):	Wetland Hydrology Present? Yes	No
Describe Recorded Data (stream gauge, mon	itoring well, aerial photos, previous inspec	ctions), if available:	
Remarks:			
No indicators are met.			

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello Co	unty	Sampling Date:	2020-05-28
Applicant/Owner: Interstate Power and Light Company			Sampling Point:	
Investigator(s): O. Haney, J. Maine	Section, Township, Range:			
Landform (hillslope, terrace, etc.): Depression		cave, convex, none):		
Slope (%): 0.00 Lat: 41.097103	Long: -92.552106		Datum: NAD 8	3
Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent	slopes	NWI classific	ation: N/A	
Are climatic / hydrologic conditions on the site typical for this time of ye	ear?Yes No	_ (If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Norm	nal Circumstances" p	oresent? Yes	✓ №
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed	l, explain any answe	rs 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	Is the Sampled Area
Wetland Hydrology Present?	Yes 🖌 No	within a Wetland? Yes Ves No

Remarks:

SP-15 is in PEM W-9. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.

VEGETATION - Use scientific names of plants.

20.4	Absolute		Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft r</u> )	<u>% Cover</u>	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
		= Total Co		That Are OBL, FACW, of FAC: 100 (AVB)
Sapling/Shrub Stratum (Plot size: 15 ft r )		- 10(a) 00	Vei	Prevalence Index worksheet:
1. Fraxinus pennsylvanica	15	~	FACW	Total % Cover of:Multiply by:
2				OBL species 0 x 1 = 0
3				FACW species 85 x 2 = 170
				FAC species $0 \times 3 = 0$
4				FACU species $10 \times 4 = 40$
5	450/			UPL species $0$ $x 5 = 0$
Herb Stratum (Plot size: <u>5 ft r</u> )	15%	= Total Co	ver	
1 Phragmites australis	55	~	FACW	Column Totals: <u>95</u> (A) <u>210</u> (B)
2. Fraxinus pennsylvanica	15		FACW	Prevalence Index = $B/A = 2.2$
O alliver an arise	10		FACU	Hydrophytic Vegetation Indicators:
				✓ 1 - Rapid Test for Hydrophytic Vegetation
4				✓ 2 - Dominance Test is >50%
5				$\checkmark$ 3 - Prevalence Index is $\leq 3.0^{1}$
6				
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10				
20.4 -	80%	= Total Co	ver	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 30 ft r )				
1				Hydrophytic
2				Vegetation Present? Yes <u>Ves</u> No
		= Total Co	ver	Present? Yes No No
Remarks: (Include photo numbers here or on a separate	sheet.)			
Rapid test is met. Photograph C-15.				

								Sampling Point:
Profile Descri	ption: (Describe	o the depth n	eeded to docun	nent the indic	ator or co	nfirm the	absence	e of indicators.)
Depth	Matrix		Redo	x Features				
(inches)	Color (moist)	%	Color (moist)	%Ty	rpe <sup>1</sup> Loo	с <sup>2</sup> Т	exture	Remarks
-								
								·
-								
<sup>1</sup> Type: C=Cor	centration, D=Depl	etion. RM=Re	duced Matrix. MS	S=Masked Sar	d Grains.		<sup>2</sup> Locatio	n: PL=Pore Lining, M=Matrix.
Hydric Soil In						li		s for Problematic Hydric Soils <sup>3</sup> :
Histosol (A	A1)		Sandv 0	Bleyed Matrix (	(S4)		Coast	t Prairie Redox (A16)
	bedon (A2)			Redox (S5)	()	-		Surface (S7)
Black Hist				Matrix (S6)		_		Manganese Masses (F12)
<ul> <li>Hydrogen</li> </ul>	Sulfide (A4)		Loamy I	Aucky Mineral	(F1)			Shallow Dark Surface (TF12)
Stratified I	Layers (A5)		Loamy (	Gleyed Matrix	(F2)	_	_ Other	(Explain in Remarks)
2 cm Muc	· /		Deplete	d Matrix (F3)				
Depleted	Below Dark Surface	e (A11)	Redox [	ark Surface (l	F6)			
	k Surface (A12)			d Dark Surface		3		s of hydrophytic vegetation and
	cky Mineral (S1)		Redox [	epressions (F	8)			nd hydrology must be present,
	ky Peat or Peat (S3	-					unles	s disturbed or problematic.
Restrictive La	yer (if observed):							
Туре:			-					il Present? Yes 🖌 No
Depth (inch	ies):		_			n;	yaric Soi	Present? Tes NO
Remarks:								
Indicator A4 is	s met. A soil sampl	e was not take	en.					
IYDROLOG	iΥ							
Wetland Hydr	ology Indicators:							
Primary Indica	tors (minimum of o	ne is required;	check all that ap	ply)			Second	lary Indicators (minimum of two required)
Surface W	/ater (A1)		Water-Stai	ned Leaves (E	39)		Su	rface Soil Cracks (B6)
	er Table (A2)		Aquatic Fa		,			ainage Patterns (B10)
	Aquatic Fadic (A2) Aquatic Fadia (B10)						/-Season Water Table (C2)	
	Water Marks (B1)						ayfish Burrows (C8)	
	Deposits (B2)			hizospheres c	,	oote (C3)		turation Visible on Aerial Imagery (C9)
Sediment Drift Depo	,			of Reduced Iro		5013 (03)		inted or Stressed Plants (D1)
	or Crust (B4)			n Reduction in		e (CE)		
_ •	. ,		—		Theu Soll	5 (00)		omorphic Position (D2)
Iron Depo	. ,			Surface (C7)			FA	C-Neutral Test (D5)
	Visible on Aerial I		_ •	Well Data (D9)				
	Vegetated Concave	Surface (B8)	Other (Exp	lain in Remarl	(S)			
Field Observa			1					
Surface Water	Present? Ye	es No	Depth (ind)	ches):				

Water Table Present?

Saturation Present? (includes capillary fringe)

Remarks: Indicators are met. Wetland Hydrology Present? Yes \_\_\_\_ No \_\_\_

Yes \_\_\_\_\_ No \_\_\_\_ Depth (inches): \_\_\_\_\_

Yes \_\_\_\_\_ No 🔽 Depth (inches): \_\_\_

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

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello Co	unty	Sampling Date: 2020-05-28
Applicant/Owner: Interstate Power and Light Company		State: Iowa	
Investigator(s): O. Haney, J. Maine	Section, Township, Range:	S26 T73N R	
Landform (hillslope, terrace, etc.): Depression			one): Concave
Slope (%): 0.00 Lat: 41.096663	Long: -92.552020		Datum: <u>NAD 83</u>
Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent	slopes	NWI cla	ssification: <u>N/A</u>
Are climatic / hydrologic conditions on the site typical for this time of ye	ear?Yes No 🗹	_ (If no, explair	n in Remarks.)
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Norn	nal Circumstand	ces" present? Yes 🔽 No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed	l, explain any a	nswers 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	Is the Sampled Area
Wetland Hydrology Present?	Yes 🖌 No	within a Wetland? Yes <u>V</u> No
		4

Remarks:

SP-16 is in PEM W-9. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.

VEGETATION - Use scientific names of plants.

00.4	Absolute		Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft r )		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: _1 (A)
2				Total Number of Dominant
3				Species Across All Strata: 1(B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
		= Total Co	ver	
Sapling/Shrub Stratum (Plot size: 15 ft r )				Prevalence Index worksheet:
1				Total % Cover of:Multiply by:
2				OBL species 0 x 1 = 0
3				FACW species <u>100</u> x 2 = <u>200</u>
4				FAC species 0 x 3 = 0
5				FACU species 0 x 4 = 0
		= Total Co	ver	UPL species 0 x 5 = 0
Herb Stratum (Plot size: <u>5 ft r</u> )				Column Totals: 100 (A) 200 (B)
1. Phragmites australis	100	<u> </u>	FACW	(-, )
2				Prevalence Index = B/A = 2.0
3				Hydrophytic Vegetation Indicators:
4				✓ 1 - Rapid Test for Hydrophytic Vegetation
5				✓ 2 - Dominance Test is >50%
6				✓ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10	100%	= Total Co		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	10070	= Total Co	ver	be present, unless disturbed or problematic.
1				Hudronbutio
2				Hydrophytic Vegetation
<b>-</b>		= Total Co	Ver	Present? Yes No
Remarks: (Include photo numbers here or on a separate		- 10(a) 00	VCI	
Rapid test is met. Photograph C-16.	,			

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SOL	Sampling Point: Or 10
Profile Description: (Describe to the depth needed to document the indicator	or confirm the absence of indicators.)
Depth Matrix Redox Features	
(inches) Color (moist) % Color (moist) % Type <sup>1</sup>	Loc <sup>2</sup> Texture Remarks
-	
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·	
·	
·	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Gr	ains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1) Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2) Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3) Stripped Matrix (S6)	Iron-Manganese Masses (F12)
✓ Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5) Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10) Depleted Matrix (F3)	
Depleted Below Dark Surface (A11) Redox Dark Surface (F6)	2
Thick Dark Surface (A12) Depleted Dark Surface (F7)	
Sandy Mucky Mineral (S1) Redox Depressions (F8)	wetland hydrology must be present,
5 cm Mucky Peat or Peat (\$3)	unless disturbed or problematic.
Restrictive Layer (if observed):	
Туре:	Hydric Soil Present? Yes 🗹 No
Depth (inches):	
Remarks:	
Indicator A4 is met. A soil sample was not taken.	
HYDROLOGY	
Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
Surface Water (A1) Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2) Aquatic Fauna (B13)	Drainage Patterns (B10)
✓ Saturation (A3) True Aquatic Plants (B14)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Liv	ing Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4	<ol> <li>Stunted or Stressed Plants (D1)</li> </ol>
Algal Mat or Crust (B4) Recent Iron Reduction in Tille	d Soils (C6) 🖉 Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	FAC-Neutral Test (D5)
Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9)	
Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks)	
Field Observations:	
Surface Water Present? Yes <u>Ves</u> No <u>Depth</u> (inches): <u>4.00</u>	
Water Table Present? Yes <u>V</u> No Depth (inches): 0.00	-
Saturation Present? Yes <u>Ves</u> No <u>Depth</u> (inches): <u>0.00</u>	Wetland Hydrology Present? Yes No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous ins	pections), if available:

Remarks:

Indicators are met.

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello Co	unty	Sampling Date:	2020-05-28
Applicant/Owner: Interstate Power and Light Company		State: Iowa	Sampling Point:	SP-17
Investigator(s): O. Haney, J. Maine	Section, Township, Range:			
Landform (hillslope, terrace, etc.): Depression		ave, convex, none):		
Slope (%): 4.00 Lat: 41.095516	Long: -92.552718		Datum: NAD 8	3
Soil Map Unit Name: Ladoga silt loam, terrace, 2 to 5 percen	t slopes	NWI classific	ation: N/A	
Are climatic / hydrologic conditions on the site typical for this time of ye	ear?YesNo_	_ (If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Norm	nal Circumstances" p	oresent? Yes	✓ No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed	l, explain any answe	rs in Remarks.)	

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

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

Remarks:

SP-17 is an upland sample plot adjacent to PEM W-9. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.

VEGETATION - Use scientific names of plants.

00 # -	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft r )	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Deminent
3				Total Number of Dominant Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: <u>20</u> (A/B)
Sapling/Shrub Stratum (Plot size: 15 ft r )		= Total Cov	/er	Prevalence Index worksheet:
1. Elaeagnus umbellata	15	~	UPL	
				Total % Cover of: Multiply by:
2. Acer negundo	10	<u> </u>	FAC	OBL species $\frac{0}{2}$ x 1 = $\frac{0}{2}$
3				FACW species <u>0</u> x 2 = <u>0</u>
4				FAC species <u>35</u> x 3 = <u>105</u>
5				FACU species 120 x 4 = 480
	25%	= Total Cov	/er	UPL species 30 x 5 = 150
Herb Stratum (Plot size: <u>5 ft r</u> )		rotar oor		Column Totals: 185 (A) 735 (B)
1. Medicago lupulina	45	~	FACU	
2. Galium aparine	25	~	FACU	Prevalence Index = $B/A = 4.0$
3. Ambrosia artemisiifolia	20	~	FACU	Hydrophytic Vegetation Indicators:
4. Carex sp.*	15		FAC	1 - Rapid Test for Hydrophytic Vegetation
5. Pastinaca sativa	15		UPL	2 - Dominance Test is >50%
6. Schedonorus arundinaceus	15		FACU	3 - Prevalence Index is ≤3.0 <sup>1</sup>
7. Solidago altissima	15		FACU	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8. Rumex crispus	10		FAC	data in Remarks or on a separate sheet)
9				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
10				
		= Total Cov		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft r</u> )		- 10(a) COV		be present, unless disturbed or problematic.
1				Hydrophytic
2.				Vegetation
		= Total Cov	/er	Present? Yes No
Remarks: (Include photo numbers here or on a separate s				1
No test is met. Photograph C-17. *The Carex could not b	,	to species	; it was ass	sumed to be FAC since most Carex species in the area

No test is met. Photograph C-17. \*The Carex could not be identified to species; it was assumed to be FAC since most Carex species in the area are FAC or wetter.

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Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)						
Depth <u>Matrix</u>	Redox Features					
(inches) Color (moist) %	Color (moist) % Type <sup>1</sup> L	oc <sup>2</sup> <u>Texture</u>	Remarks			
-						
-						
·						
- <u> </u>						
-						
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Re	duced Matrix. MS=Masked Sand Grains	<sup>2</sup> Location: PL=P	ore Lining, M=Matrix.			
Hydric Soil Indicators:			blematic Hydric Soils <sup>3</sup> :			
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie F	Redox (A16)			
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (	(S7)			
Black Histic (A3)	Stripped Matrix (S6)		se Masses (F12)			
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)		Dark Surface (TF12)			
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain	in Remarks)			
2 cm Muck (A10)	Depleted Matrix (F3)					
Depleted Below Dark Surface (A11) Thick Dark Surface (A12)	Redox Dark Surface (F6) Depleted Dark Surface (F7)	<sup>3</sup> Indicators of hydr	ophytic vegetation and			
Sandy Mucky Mineral (S1)	Redox Depressions (F8)	-	ogy must be present,			
5 cm Mucky Peat or Peat (S3)		-	ed or problematic.			
Restrictive Layer (if observed):						
Туре:						
Depth (inches):	_	Hydric Soil Presen	t? Yes No			
Remarks:	_					
A soil sample was not taken. Soil is not assun	ned to be hydric due to the lack of wetla	nd hydrology indicators and	hydrophytic vegetation.			
	2	, ,	, , , , , ,			
HYDROLOGY						
Wetland Hydrology Indicators:						
Primary Indicators (minimum of one is required:	check all that apply)	Secondary Indic	ators (minimum of two required)			
			I Cracks (B6)			
Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)		atterns (B10)			
Saturation (A3)	True Aquatic Plants (B14)		Water Table (C2)			
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Bu	( )			
Sediment Deposits (B2)	Oxidized Rhizospheres on Living		/isible on Aerial Imagery (C9)			
Drift Deposits (B3)	Oxidized Rinzospheres on Elving Presence of Reduced Iron (C4)		Stressed Plants (D1)			
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled So		· · /			
Iron Deposits (B5)	Thin Muck Surface (C7)	FAC-Neutra				
Inundation Visible on Aerial Imagery (B7)	Gauge or Well Data (D9)					
Sparsely Vegetated Concave Surface (B8)						
Field Observations:						
	Depth (inches):					
	Depth (inches):					
		Wetland Underslam, Drass				
Saturation Present? Yes No (includes capillary fringe)	Depth (inches):	Wetland Hydrology Prese	ht? fes No			
Describe Recorded Data (stream gauge, monitor	oring well, aerial photos, previous inspec	tions), if available:				
Remarks:						
Indicator D2 is met.						

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello Cour	nty	Sampling Date: 2020-05-28
Applicant/Owner: Interstate Power and Light Company			Sampling Point: SP-18
Investigator(s): O. Haney, J. Maine	Section, Township, Range: S		
Landform (hillslope, terrace, etc.): Depression	Local relief (conca		
Slope (%): 0.00 Lat: 41.0981744	Long: -92.553065		Datum: NAD 83
Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent	slopes	NWI classific	ation: N/A
Are climatic / hydrologic conditions on the site typical for this time of ye	ear?Yes No 🗹	(If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Norma	l Circumstances" p	oresent? Yes 🖌 No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed, o	explain any answei	rs 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	Is the Sampled Area
Wetland Hydrology Present?	Yes 🖌 No	within a Wetland? Yes <u>V</u> No
		4

Remarks:

SP-18 is in PEM W-12. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.

VEGETATION - Use scientific names of plants.

00 # -	Absolute		Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft r</u> )		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata:(B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
		= Total Co	ver	
Sapling/Shrub Stratum (Plot size: 15 ft r )				Prevalence Index worksheet:
1				Total % Cover of:Multiply by:
2				OBL species 0 x 1 = 0
3				FACW species <u>90</u> x 2 = <u>180</u>
4				FAC species 0 x 3 = 0
5				FACU species 0 x 4 = 0
		= Total Co	ver	UPL species 0 x 5 = 0
Herb Stratum (Plot size: <u>5 ft r</u> )		rotar oo		Column Totals: 90 (A) 180 (B)
1. Phragmites australis	90	<u> </u>	FACW	
2				Prevalence Index = B/A = 2.0
3				Hydrophytic Vegetation Indicators:
4.				✓ 1 - Rapid Test for Hydrophytic Vegetation
5				✓ 2 - Dominance Test is >50%
6				✓ 3 - Prevalence Index is $\leq 3.0^1$
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
				data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10	90%			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft r )	3070	= Total Co	ver	be present, unless disturbed or problematic.
1/				Undrandurtia
2				Hydrophytic Vegetation
£		= Total Co	vər	Present? Yes No
Remarks: (Include photo numbers here or on a separate		- 10(a) 00	Vei	
Rapid test is met. Photograph C-18.				

301L					Sampling Point:
Profile Description: (Describe	to the depth n	eeded to document the indicator or	confirm	the absence of	indicators.)
Depth Matrix		Redox Features			
(inches) Color (moist)	%0	Color (moist)%Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
-					
-					
<u> </u>					
	pletion, RM=Rec	duced Matrix, MS=Masked Sand Grain	IS.		PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:				Indicators fo	r Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)		Sandy Gleyed Matrix (S4)			airie Redox (A16)
Histic Epipedon (A2)		Sandy Redox (S5)		Dark Sur	. ,
Black Histic (A3)		Stripped Matrix (S6)			ganese Masses (F12)
✓ Hydrogen Sulfide (A4)		Loamy Mucky Mineral (F1)			llow Dark Surface (TF12)
Stratified Layers (A5) 2 cm Muck (A10)		Loamy Gleyed Matrix (F2) Depleted Matrix (F3)			plain in Remarks)
Depleted Below Dark Surface	ce (A11)	Redox Dark Surface (F6)			
Thick Dark Surface (A12)	20 (((1))	Depleted Dark Surface (F7)		<sup>3</sup> Indicators of	hydrophytic vegetation and
Sandy Mucky Mineral (S1)		Redox Depressions (F8)			ydrology must be present,
5 cm Mucky Peat or Peat (S	33)				sturbed or problematic.
Restrictive Layer (if observed)	):				· · · · · ·
Туре:		_			
Depth (inches):				Hydric Soil Pr	esent? Yes 🦯 No
Remarks:					
Indicator A4 is met. A soil same	ole was not take	en.			
HYDROLOGY					
Wetland Hydrology Indicators					
Primary Indicators (minimum of		check all that apply)		Secondary	Indicators (minimum of two required)
	Sile is required,				
Surface Water (A1) High Water Table (A2)		Water-Stained Leaves (B9) Aquatic Fauna (B13)			e Soil Cracks (B6) ge Patterns (B10)
Fight Water Table (A2) Saturation (A3)				_	• • • •
		True Aquatic Plants (B14)			eason Water Table (C2)
Water Marks (B1)		Hydrogen Sulfide Odor (C1)	n Daata (C		sh Burrows (C8)
Sediment Deposits (B2)		Oxidized Rhizospheres on Living	g Roots (C	·	tion Visible on Aerial Imagery (C9)
✓ Drift Deposits (B3)		Presence of Reduced Iron (C4)			d or Stressed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron Reduction in Tilled S	50115 (CB)		orphic Position (D2)
Iron Deposits (B5)	(D7)	Thin Muck Surface (C7)		FAC-N	eutral Test (D5)
Inundation Visible on Aerial		Gauge or Well Data (D9)			
Sparsely Vegetated Concav	e Surrace (B8)	Other (Explain in Remarks)			
Field Observations:		Y - man			
		Depth (inches):	·		
	Yes No _				
Saturation Present?	/es No _	Depth (inches):	Wetlar	nd Hydrology F	Present? Yes 🦯 No

Remarks:

Indicators are met.

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

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello Co	unty	Sampling Date: 2020-05-28
Applicant/Owner: Interstate Power and Light Company			Sampling Point: SP-19
Investigator(s): O. Haney, J. Maine	Section, Township, Range:		
Landform (hillslope, terrace, etc.): Depression		cave, convex, none):	
Slope (%): 0.00 Lat: 41.098220	Long: -92.551950		Datum: NAD 83
Soil Map Unit Name: Ladoga silt loam, terrace, 5 to 9 percen	t slopes	NWI classific	ation: N/A
Are climatic / hydrologic conditions on the site typical for this time of ye	ear?Yes No	_ (If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Norm	nal Circumstances" p	oresent? Yes 🖌 No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed	l, explain any answe	rs in Remarks.)
		-	

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No <u>v</u> No <u>v</u> No <u>v</u>	ls the Sampled Area within a Wetland?	Yes	No
Pomarke:					

Remarks:

SP-19 is an upland sample plot adjacent to PEM W-12. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.

VEGETATION - Use scientific names of plants.

00 (	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft r )	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: $\underline{0}$ (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)
		= Total Cov	ver	
Sapling/Shrub Stratum (Plot size: 15 ft r )				Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species x 1 =
3				FACW species $0 \times 2 = 0$
4				FAC species 0 x 3 = 0
5				FACU species 95 x 4 = 380
		= Total Cov		UPL species $5$ $x 5 = 25$
Herb Stratum (Plot size: <u>5 ft r</u> )		- 10(a) 00	461	Column Totals: 100 (A) 405 (B)
1. Medicago lupulina	65	~	FACU	
2. Erigeron canadensis	25	~	FACU	Prevalence Index = $B/A = 4.1$
3. Pastinaca sativa	5		UPL	Hydrophytic Vegetation Indicators:
4 Solidago altissima	5		FACU	1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
7				data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft r)	100%	= Total Cov	ver	be present, unless disturbed or problematic.
1				Hydrophytic Vegetation
2				Present? Yes No
		= Total Cov	ver	
Remarks: (Include photo numbers here or on a separate s No test is met. Photograph C-19.	sneet.)			
no test is met. Fliolograph 0-13.				

1	pth needed to document the indicator or (	confirm the absence of indicators.)	
Depth Matrix	Redox Features		
(inches) Color (moist) %	Color (moist) % Type <sup>1</sup>	Loc <sup>2</sup> Texture Remarks	_
			_
-			
-			-
			-
			-
			_
			_
-			
<sup>1</sup> Type: C=Concentration, D=Depletion, R	/=Reduced Matrix, MS=Masked Sand Grains	s. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.	-
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :	
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)	
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)	
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)	
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)	
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)	
2 cm Muck (A10)	Depleted Matrix (F3)		
Depleted Below Dark Surface (A11) Thick Dark Surface (A12)	Redox Dark Surface (F6) Depleted Dark Surface (F7)	<sup>3</sup> Indicators of hydrophytic vegetation and	
Sandy Mucky Mineral (S1)	Redox Depressions (F8)	wetland hydrology must be present,	
5 cm Mucky Peat or Peat (S3)		unless disturbed or problematic.	
Restrictive Layer (if observed):			
Туре:			
Depth (inches):		Hydric Soil Present? Yes No	-
Remarks:			
A soil sample was not taken. Soil is not a	ssumed to be hydric due to the lack of wetl	and hydrology indicators and hydrophytic vegetation.	
HYDROLOGY			
HYDROLOGY Wetland Hydrology Indicators:			
	uired; check all that apply)	Secondary Indicators (minimum of two required	)
Wetland Hydrology Indicators:	uired: check all that apply) Water-Stained Leaves (B9)	Surface Soil Cracks (B6)	)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is req			D
Wetland Hydrology Indicators:           Primary Indicators (minimum of one is req	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)	D
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req         Surface Water (A1)         High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6) Drainage Patterns (B10)	<u>D</u>
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req         Surface Water (A1)         High Water Table (A2)         Saturation (A3)	<ul> <li>Water-Stained Leaves (B9)</li> <li>Aquatic Fauna (B13)</li> <li>True Aquatic Plants (B14)</li> </ul>	<ul> <li>Surface Soil Cracks (B6)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Crayfish Burrows (C8)</li> </ul>	D
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	<ul> <li>Water-Stained Leaves (B9)</li> <li>Aquatic Fauna (B13)</li> <li>True Aquatic Plants (B14)</li> <li>Hydrogen Sulfide Odor (C1)</li> </ul>	<ul> <li>Surface Soil Cracks (B6)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Crayfish Burrows (C8)</li> </ul>	<u>D</u>
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	<ul> <li>Water-Stained Leaves (B9)</li> <li>Aquatic Fauna (B13)</li> <li>True Aquatic Plants (B14)</li> <li>Hydrogen Sulfide Odor (C1)</li> <li>Oxidized Rhizospheres on Living</li> </ul>	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)	D
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	<ul> <li>Water-Stained Leaves (B9)</li> <li>Aquatic Fauna (B13)</li> <li>True Aquatic Plants (B14)</li> <li>Hydrogen Sulfide Odor (C1)</li> <li>Oxidized Rhizospheres on Living</li> <li>Presence of Reduced Iron (C4)</li> </ul>	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)	D
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	<ul> <li>Water-Stained Leaves (B9)</li> <li>Aquatic Fauna (B13)</li> <li>True Aquatic Plants (B14)</li> <li>Hydrogen Sulfide Odor (C1)</li> <li>Oxidized Rhizospheres on Living</li> <li>Presence of Reduced Iron (C4)</li> <li>Recent Iron Reduction in Tilled S</li> <li>Thin Muck Surface (C7)</li> </ul>	<ul> <li>Surface Soil Cracks (B6)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Crayfish Burrows (C8)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Stunted or Stressed Plants (D1)</li> <li>Geomorphic Position (D2)</li> </ul>	L)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	<ul> <li>Water-Stained Leaves (B9)</li> <li>Aquatic Fauna (B13)</li> <li>True Aquatic Plants (B14)</li> <li>Hydrogen Sulfide Odor (C1)</li> <li>Oxidized Rhizospheres on Living</li> <li>Presence of Reduced Iron (C4)</li> <li>Recent Iron Reduction in Tilled S</li> <li>Thin Muck Surface (C7)</li> <li>B7)</li> <li>Gauge or Well Data (D9)</li> </ul>	<ul> <li>Surface Soil Cracks (B6)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Crayfish Burrows (C8)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Stunted or Stressed Plants (D1)</li> <li>Geomorphic Position (D2)</li> </ul>	D
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	<ul> <li>Water-Stained Leaves (B9)</li> <li>Aquatic Fauna (B13)</li> <li>True Aquatic Plants (B14)</li> <li>Hydrogen Sulfide Odor (C1)</li> <li>Oxidized Rhizospheres on Living</li> <li>Presence of Reduced Iron (C4)</li> <li>Recent Iron Reduction in Tilled S</li> <li>Thin Muck Surface (C7)</li> <li>B7)</li> <li>Gauge or Well Data (D9)</li> <li>(B8)</li> <li>Other (Explain in Remarks)</li> </ul>	<ul> <li>Surface Soil Cracks (B6)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Crayfish Burrows (C8)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Stunted or Stressed Plants (D1)</li> <li>Geomorphic Position (D2)</li> </ul>	<u>D</u>
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	<ul> <li>Water-Stained Leaves (B9)</li> <li>Aquatic Fauna (B13)</li> <li>True Aquatic Plants (B14)</li> <li>Hydrogen Sulfide Odor (C1)</li> <li>Oxidized Rhizospheres on Living</li> <li>Presence of Reduced Iron (C4)</li> <li>Recent Iron Reduction in Tilled S</li> <li>Thin Muck Surface (C7)</li> <li>B7) Gauge or Well Data (D9)</li> <li>(B8) Other (Explain in Remarks)</li> <li>No </li> </ul>	<ul> <li>Surface Soil Cracks (B6)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Crayfish Burrows (C8)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Stunted or Stressed Plants (D1)</li> <li>Geomorphic Position (D2)</li> </ul>	D
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	<ul> <li>Water-Stained Leaves (B9)</li> <li>Aquatic Fauna (B13)</li> <li>True Aquatic Plants (B14)</li> <li>Hydrogen Sulfide Odor (C1)</li> <li>Oxidized Rhizospheres on Living</li> <li>Presence of Reduced Iron (C4)</li> <li>Recent Iron Reduction in Tilled S</li> <li>Thin Muck Surface (C7)</li> <li>B7)</li> <li>Gauge or Well Data (D9)</li> <li>(B8)</li> <li>Other (Explain in Remarks)</li> </ul>	<ul> <li>Surface Soil Cracks (B6)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Crayfish Burrows (C8)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Stunted or Stressed Plants (D1)</li> <li>Geomorphic Position (D2)</li> </ul>	
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	<ul> <li>Water-Stained Leaves (B9)</li> <li>Aquatic Fauna (B13)</li> <li>True Aquatic Plants (B14)</li> <li>Hydrogen Sulfide Odor (C1)</li> <li>Oxidized Rhizospheres on Living</li> <li>Presence of Reduced Iron (C4)</li> <li>Recent Iron Reduction in Tilled S</li> <li>Thin Muck Surface (C7)</li> <li>B7) Gauge or Well Data (D9)</li> <li>(B8) Other (Explain in Remarks)</li> <li>No </li> </ul>	<ul> <li>Surface Soil Cracks (B6)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Crayfish Burrows (C8)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Stunted or Stressed Plants (D1)</li> <li>Geomorphic Position (D2)</li> </ul>	<u></u>
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	Water-Stained Leaves (B9)     Aquatic Fauna (B13)     True Aquatic Plants (B14)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres on Living     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled S     Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)  No      Depth (inches):     Depth (inches):     Depth (inches):     Depth (inches):		<u></u>
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	Water-Stained Leaves (B9)     Aquatic Fauna (B13)     True Aquatic Plants (B14)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres on Living     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled S     Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No      Popth (inches):     Depth (inches):		<u> </u>
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	Water-Stained Leaves (B9)     Aquatic Fauna (B13)     True Aquatic Plants (B14)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres on Living     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled S     Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)  No      Depth (inches):     Depth (inches):     Depth (inches):     Depth (inches):		D
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	Water-Stained Leaves (B9)     Aquatic Fauna (B13)     True Aquatic Plants (B14)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres on Living     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled S     Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)  No      Depth (inches):     Depth (inches):     Depth (inches):     Depth (inches):		<u>-</u>
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	Water-Stained Leaves (B9)     Aquatic Fauna (B13)     True Aquatic Plants (B14)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres on Living     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled S     Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)  No      Depth (inches):     Depth (inches):     Depth (inches):     Depth (inches):		
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is req	Water-Stained Leaves (B9)     Aquatic Fauna (B13)     True Aquatic Plants (B14)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres on Living     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled S     Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)  No      Depth (inches):     Depth (inches):     Depth (inches):     Depth (inches):		

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project	City/County: Wapello Co	unty	Sampling Date:	2020-05-28
Applicant/Owner: Interstate Power and Light Company		State: Iowa	Sampling Point:	
Investigator(s): O. Haney, J. Maine	Section, Township, Range:			
Landform (hillslope, terrace, etc.): Depression		cave, convex, none):		
Slope (%): 0.00 Lat: 41.097389	Long: -92.551080		Datum: NAD 8	33
Soil Map Unit Name: Ladoga silt loam, terrace, 2 to 5 percen	t slopes	NWI classific	ation: N/A	
Are climatic / hydrologic conditions on the site typical for this time of ye	ear?YesNo_	_ (If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Norn	nal Circumstances" p	present? Yes	✓ No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed	l, explain any answe	rs 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	Is the Sampled Area
Wetland Hydrology Present?	Yes 🖌 No	within a Wetland? Yes <u>V</u> No

Remarks:

SP-20 is in PEM W-5. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.

VEGETATION - Use scientific names of plants.

20.4 -	Absolute		Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft r )	<u>% Cover</u>			Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				
5				Percent of Dominant Species That Are OBL_FACW_or_FAC: 100 (A/B)
		= Total Co		That Are OBL, FACW, or FAC: 100 (A/B)
Sapling/Shrub Stratum (Plot size: 15 ft r )		- 10(a) 00	Vei	Prevalence Index worksheet:
1				Total % Cover of:Multiply by:
2				OBL species 15 x 1 = 15
3				FACW species 45 x 2 = 90
				FAC species $0 \times 3 = 0$
4				FACU species $0 \times 4 = 0$
5				UPL species $0$ x 5 = $0$
Herb Stratum (Plot size: 5 ft r)		= Total Co	ver	
1 Phragmites australis	45	~	FACW	Column Totals: <u>60</u> (A) <u>105</u> (B)
2. Salix nigra	15	~	OBL	Prevalence Index = B/A = <u>1.8</u>
3				Hydrophytic Vegetation Indicators:
4				<ul> <li>1 - Rapid Test for Hydrophytic Vegetation</li> </ul>
				✓ 2 - Dominance Test is >50%
5				✓ 3 - Prevalence Index is $\leq 3.0^1$
6				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
7				data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Manda Man Obstance (Distributed 30 ft r	60%	= Total Co	ver	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				
1				Hydrophytic
2				Vegetation Present? Yes <u>V</u> No
		= Total Co	ver	
Remarks: (Include photo numbers here or on a separate	sheet.)			
Rapid test is met. Photograph C-20.				

US Army Corps of Engineers

Depth <u>Matrix</u> (inches) <u>Color (moist)</u> %	Redox Features           Color (moist)         %         Type <sup>1</sup> Loc <sup>2</sup>	Texture Remarks
-		
-		
		21
vpe: C=Concentration, D=Depletion, RM dric Soil Indicators:	Reduced Matrix, MS=Masked Sand Grains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils <sup>3</sup> :
	Construction of Matrix (CA)	•
Histosol (A1) Histic Epipedon (A2)	Sandy Gleyed Matrix (S4) Sandy Redox (S5)	Coast Prairie Redox (A16) Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	,
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	
_ Thick Dark Surface (A12)	Depleted Dark Surface (F7)	<sup>3</sup> Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Redox Depressions (F8)	wetland hydrology must be present,
		unless disturbed or problematic
5 cm Mucky Peat or Peat (S3)		unless disturbed or problematic.
		uniess disturbed or problematic.
estrictive Layer (if observed): Type: Depth (inches): emarks:		Hydric Soil Present? Yes No
estrictive Layer (if observed): Type: Depth (inches): emarks:		
estrictive Layer (if observed): Type: Depth (inches): emarks: dicator A4 is met. A soil sample was not		
strictive Layer (if observed): Type: Depth (inches): marks: dicator A4 is met. A soil sample was not DROLOGY		
strictive Layer (if observed): Type: Depth (inches): marks: dicator A4 is met. A soil sample was not DROLOGY etland Hydrology Indicators:	taken.	Hydric Soil Present? Yes <u>V</u> No
	taken.	Hydric Soil Present? Yes <u>V</u> No
strictive Layer (if observed): Type: Depth (inches): marks: dicator A4 is met. A soil sample was not DROLOGY etland Hydrology Indicators: mary Indicators (minimum of one is requi _ Surface Water (A1)	taken. red: check all that apply)	Hydric Soil Present? Yes <u>V</u> No <u>Secondary Indicators (minimum of two requi</u>
strictive Layer (if observed): Type: Depth (inches): marks: dicator A4 is met. A soil sample was not  DROLOGY etland Hydrology Indicators: mary Indicators (minimum of one is requi _ Surface Water (A1) _ High Water Table (A2)	taken. red: check all that apply) Water-Stained Leaves (B9)	Hydric Soil Present? Yes No Secondary Indicators (minimum of two require Surface Soil Cracks (B6)
strictive Layer (if observed): Type: Depth (inches): marks: licator A4 is met. A soil sample was not DROLOGY etland Hydrology Indicators: mary Indicators (minimum of one is requi Surface Water (A1) High Water Table (A2)	taken. red: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13)	Hydric Soil Present? Yes <u>Ves</u> No <u>Secondary Indicators (minimum of two requi</u> Surface Soil Cracks (B6) <u>V</u> Drainage Patterns (B10)
strictive Layer (if observed): Type: Depth (inches): marks: licator A4 is met. A soil sample was not  DROLOGY etland Hydrology Indicators: mary Indicators (minimum of one is requi _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3)	taken. <u>red: check all that apply)</u> Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14)	Hydric Soil Present?       Yes No          Secondary Indicators (minimum of two requited in the second sec
strictive Layer (if observed): Type: Depth (inches): Depth (inches): Demarks: Dicator A4 is met. A soil sample was not DROLOGY etland Hydrology Indicators: mary Indicators (minimum of one is requi Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	taken.  red: check all that apply)  Water-Stained Leaves (B9)  Aquatic Fauna (B13)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)	Hydric Soil Present?       Yes No          Secondary Indicators (minimum of two requined in the second argument of two requined in the second argument of two requined in the second argument of the se
	taken. <u>red: check all that apply)</u> Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Roc	Hydric Soil Present?       Yes _ ✓ _ No No No
	taken. <u>red: check all that apply)</u> Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Roc Presence of Reduced Iron (C4)	Hydric Soil Present?       Yes No
	taken.  red: check all that apply)  Mater-Stained Leaves (B9)  Aquatic Fauna (B13)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roo  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7)	Hydric Soil Present?       Yes _ ✓ _ No No No
	taken.  red: check all that apply)  Water-Stained Leaves (B9)  Aquatic Fauna (B13)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roc  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils  Thin Muck Surface (C7)  7) Gauge or Well Data (D9)	Hydric Soil Present?       Yes No
strictive Layer (if observed): Type: Depth (inches): emarks: dicator A4 is met. A soil sample was not  DROLOGY  etland Hydrology Indicators: imary Indicators (minimum of one is requi _ 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 (B _ Sparsely Vegetated Concave Surface (	taken.  red: check all that apply)  Water-Stained Leaves (B9)  Aquatic Fauna (B13)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roo  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils  Thin Muck Surface (C7)  7)  Gauge or Well Data (D9)	Hydric Soil Present?       Yes No
	taken.  red: check all that apply)  Water-Stained Leaves (B9)  Aquatic Fauna (B13)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roo  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils  Thin Muck Surface (C7)  7) Gauge or Well Data (D9) B8) Other (Explain in Remarks)	Hydric Soil Present?       Yes No
astrictive Layer (if observed):         Type:         Depth (inches):         Depth (inches):         gemarks:         dicator A4 is met. A soil sample was not         DROLOGY         etland Hydrology Indicators:         imary Indicators (minimum of one is requited)         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 (B         Sparsely Vegetated Concave Surface (eld Observations:         urface Water Present?       Yes	taken.   red: check all that apply)	Hydric Soil Present?       Yes No
astrictive Layer (if observed):         Type:         Depth (inches):         bemarks:         dicator A4 is met. A soil sample was not         amarks:         dicator A4 is met. A soil sample was not         amarks:         dicator A4 is met. A soil sample was not         amarks:         dicator A4 is met. A soil sample was not         amarks:         dicator A4 is met. A soil sample was not         amarks:         dicator A4 is met. A soil sample was not         amarks:         dicator A4 is met. A soil sample was not         amarks:         dicator A4 is met. A soil sample was not         amarks:         dicator A4 is met. A soil sample was not         amarks:         dicator A4 is met. A soil sample was not         amarks:         dicator A4 is met. A soil sample was not         amarks:         amarks:         dicator A4 is met. A soil sample was not         '_ Surface Water Crust (B4)         Inon Deposits (B5)         '_ Inundation Visible on Aerial Imagery (B         Sparsely Vegetated Concave Surface (         eld Observations:         urface Water Present?       Yes         '_ ater Table Pr	taken.  red: check all that apply)      Water-Stained Leaves (B9)     Aquatic Fauna (B13)     True Aquatic Plants (B14)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres on Living Roc     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled Soils     Thin Muck Surface (C7) 7) Gauge or Well Data (D9) B8) Other (Explain in Remarks)  No Depth (inches): <u>4.00 No</u> Depth (inches): <u>0.00 </u>	Hydric Soil Present?       Yes No

Indicators are met.

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapel	lo County Sampling Date: 2020-05-28
Applicant/Owner: Interstate Power and Light Company	State: Iowa Sampling Point: SP-21
Investigator(s): O. Haney, J. Maine Section, Township, R	ange: S26 T73N R15W
	ef (concave, convex, none): <u>Concave</u>
Slope (%): 0.00 Lat: 41.098757 Long: -92.550932	Datum: NAD 83
Soil Map Unit Name: Ladoga silt loam, terrace, 5 to 9 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	e "Normal Circumstances" present? Yes 🔽 No
Are Vegetation, Soil, or Hydrology naturally problematic? (If r	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 <u>V</u> No Is the Sample	
Wetland Hydrology Present? Yes <u>V</u> No within a Wetla	and? Yes <u> </u>
Remarks: SP-21 is in PEM W-12. There is no upland sample plot adjacent to this wetland. The wet	tland is immediately bordered by groupl along the railroad
tracks and PUB W-13. According to the Palmer Drought Severity Index the area was exp sampling. A soil sample was not taken.	
VEGETATION – Use scientific names of plants.	
Absolute Dominant Indicator	
Tree Stratum         (Plot size: 30 ft r )         % Cover         Species?         Status           1.	- Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2	- Total Number of Dominant
3	_ Species Across All Strata: <u>1</u> (B)
4	<ul> <li>Percent of Dominant Species</li> <li>That Are OBL, FACW, or FAC: 100 (A/B)</li> </ul>
15 ft r = Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r )	Prevalence Index worksheet: Total % Cover of:Multiply by:
1	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
2	FACW species $80$ $x = 160$
4	FAC species $0$ $x 3 = 0$
5.	FACU species 0 x 4 = 0
= Total Cover	UPL species 0 x 5 = 0
Herb Stratum 1.(Plot size: 5 ft r Phragmites australis80✔FACW	Column Totals: 80 (A) 160 (B)
2	Prevalence Index = B/A = 2.0
3	Hydrophytic Vegetation Indicators:
4	✓ 1 - Rapid Test for Hydrophytic Vegetation
5	_ 2 - Dominance Test is >50%
6	$\_$ $\checkmark$ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
7	_ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
8	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9	
10	<sup>-</sup> <sup>1</sup> Indicators of hydric soil and wetland hydrology must
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft r</u> )	be present, unless disturbed or problematic.
1	_ Hydrophytic
2	Vegetation Present? Yes No No
= Total Cover	Present?         Yes         No
Remarks: (Include photo numbers here or on a separate sheet.) Rapid test is met.	
Photograph C-21.	

Depth Matrix	Redox Features	_
Depth         Matrix           (inches)         Color (moist)         %           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -	Redox Features           Color (moist)         %         Type <sup>1</sup> Loc <sup>2</sup>	Texture         Remarks
<sup>1</sup> Type: C=Concentration D=Depletion RM	=Reduced Matrix, MS=Masked Sand Grains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	-Reduced Matrix, MO-Masked Gard Grans.	Indicators for Problematic Hydric Soils <sup>3</sup> :
<ul> <li>Histosol (A1)</li> <li>Histic Epipedon (A2)</li> <li>Black Histic (A3)</li> <li>✓ Hydrogen Sulfide (A4)</li> <li>Stratified Layers (A5)</li> <li>2 cm Muck (A10)</li> </ul>	<ul> <li>Sandy Gleyed Matrix (S4)</li> <li>Sandy Redox (S5)</li> <li>Stripped Matrix (S6)</li> <li>Loamy Mucky Mineral (F1)</li> <li>Loamy Gleyed Matrix (F2)</li> <li>Depleted Matrix (F3)</li> </ul>	<ul> <li>Coast Prairie Redox (A16)</li> <li>Dark Surface (S7)</li> <li>Iron-Manganese Masses (F12)</li> <li>Very Shallow Dark Surface (TF12)</li> <li>Other (Explain in Remarks)</li> </ul>
<ul> <li>Depleted Below Dark Surface (A11)</li> <li>Thick Dark Surface (A12)</li> <li>Sandy Mucky Mineral (S1)</li> <li>5 cm Mucky Peat or Peat (S3)</li> </ul>	<ul> <li>Redox Dark Surface (F6)</li> <li>Depleted Dark Surface (F7)</li> <li>Redox Depressions (F8)</li> </ul>	<sup>3</sup> 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 <u>V</u> No
Remarks: Indicator A4 is met. A soil sample was not	taken.	
HYDROLOGY		
Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is requi	red; check all that apply)	Secondary Indicators (minimum of two required)
Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Drainage Patterns (B10)
Saturation (A3)	True Aquatic Plants (B14)	Dry-Season Water Table (C2)
Water Marks (B1)	<ul> <li>Hydrogen Sulfide Odor (C1)</li> </ul>	Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Root	s (C3) Saturation Visible on Aerial Imagery (C9)

Saturation	Visible	on Aerial	Imagery	(C9)

Stunted or	Stressed	Plants	(D1)
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~	Geomorphic	Position	(D2
---	------------	----------	-----

Algal Mat or Crust (B4)		Recent Iron Reduction in Tilled Soils (C6) ✓ Geomorphic Position (D2)			
	Iron Deposits (B5)	Thin Muck Surface (C7) FAC-Neutral Test (D5)			
	Inundation Visible on Aerial Imagery (B7)	Gauge or Well Data (D9)			
	Sparsely Vegetated Concave Surface (B8)	Other (Explain in Remarks)			
ľ	Field Observations:				
	Surface Water Present? Yes No	Depth (inches):			
	Water Table Present? Yes No	Depth (inches):			
	Saturation Present? Yes No _ (includes capillary fringe)	_ Depth (inches): Wetland Hydrology Present? Yes _ V	No		
ľ	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				
ľ	Remarks:				
	Indicators are met.				
l					

\_\_\_\_ Presence of Reduced Iron (C4)

US Army Corps of Engineers

✓ Drift Deposits (B3)

**APPENDIX C - SITE PHOTOGRAPHS** 



Photograph C-1: View of Sample Plot (SP)-1 in PEM Wetland (W)-1, facing south.



Photograph C-2: View of upland SP-2, facing northwest.

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Photograph C-5: View of upland SP-5, facing north.



Photograph C-6: View of SP-6 in PSS W-3, facing southwest.





Photograph C-7: View of SP-7 in PEM W-4, facing east. A soil sample was not collected.



Photograph C-8: View of SP-8 in PEM W-5, facing east. A soil sample was not collected.





Photograph C-9: View of upland SP-9, facing southwest. A soil sample was not collected.



Photograph C-10: View of upland SP-10, facing northwest. A soil sample was not collected.





Photograph C-11: View of SP-11 in PEM W-7, facing east. A soil sample was not collected.



Photograph C-12: View of upland SP-12, facing west. A soil sample was not collected.





Photograph C-13: View of SP-13 in PEM W-5, facing east. A soil sample was not collected.



Photograph C-14: View of upland SP-14, facing north. A soil sample was not collected.





Photograph C-15: View of SP-15 in PEM W-9, facing north. A soil sample was not collected.



Photograph C-16: View of SP-16 in PEM W-9, facing west. A soil sample was not collected.





Photograph C-17: View of upland SP-17, facing northeast. A soil sample was not collected.



Photograph C-18: View of SP-18 in PEM W-9, facing south. A soil sample was not collected.

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Photograph C-19: View of upland SP-19, facing west. A soil sample was not collected.



Photograph C-20: View of SP-20 in PEM W-5, facing northeast. A soil sample was not collected.





Photograph C-21: View of SP-21 in PEM W-12, facing east. A soil sample was not collected.



Photograph C-22: View of PUB W-6, facing northeast.





Photograph C-23: View of PUB W-10, facing west.



Photograph C-24: View of PUB W-11, facing west.





Photograph C-25: View of PUB W-13, facing north.



Photograph C-26: View of PUB W-14, facing northwest.

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Photograph C-27: View of PUB W-15, facing northwest.



Photograph C-28: View of perennial Stream (S)-1, Middle Avery Creek, looking upstream (west).

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Photograph C-29: View of perennial S-2, Des Moines River, looking downstream (southeast).



Photograph C-30: View of intermittent S-3, looking upstream (northwest).

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Photograph C-31: View of ephemeral S-4, looking downstream (northeast).



Photograph C-32: View of ephemeral S-5, looking downstream (east).





Photograph C-33: View of representative upland forested area at Photograph Point (PP)-1, facing north.



Photograph C-34: View of representative upland fallow field at PP-2, facing southwest.





Photograph C-35: View of existing outfall feeding intermittent S-3 at PP-5, facing north.



Photograph C-36: View of representative upland, maintained lawn at PP-7, facing north.





PP-11, facing west.



Appendix B

Fault Location Map

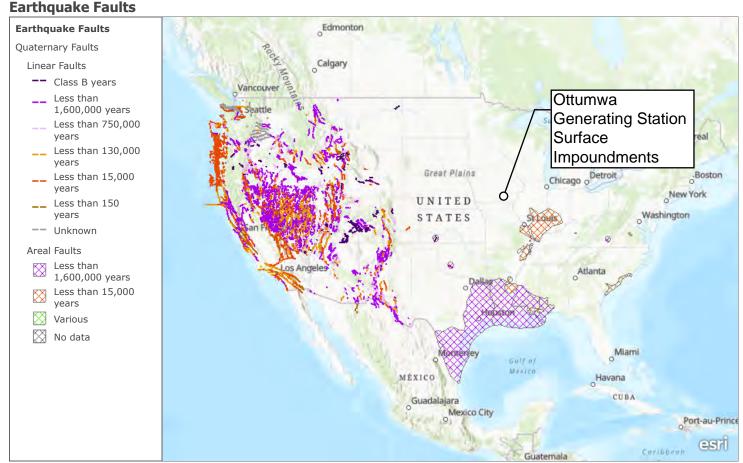
Location Restriction Compliance Demonstration

www.scsengineers.com

10/20/2020 - Classification: Internal - ECRM7775251

9/16/2020

## ArcGIS - Earthquake Faults



This map layer, utilizing data from the U.S. Geological Survey's (USGS) Earthquake Hazards Program (EHP), details known faults and folds in the U.S.

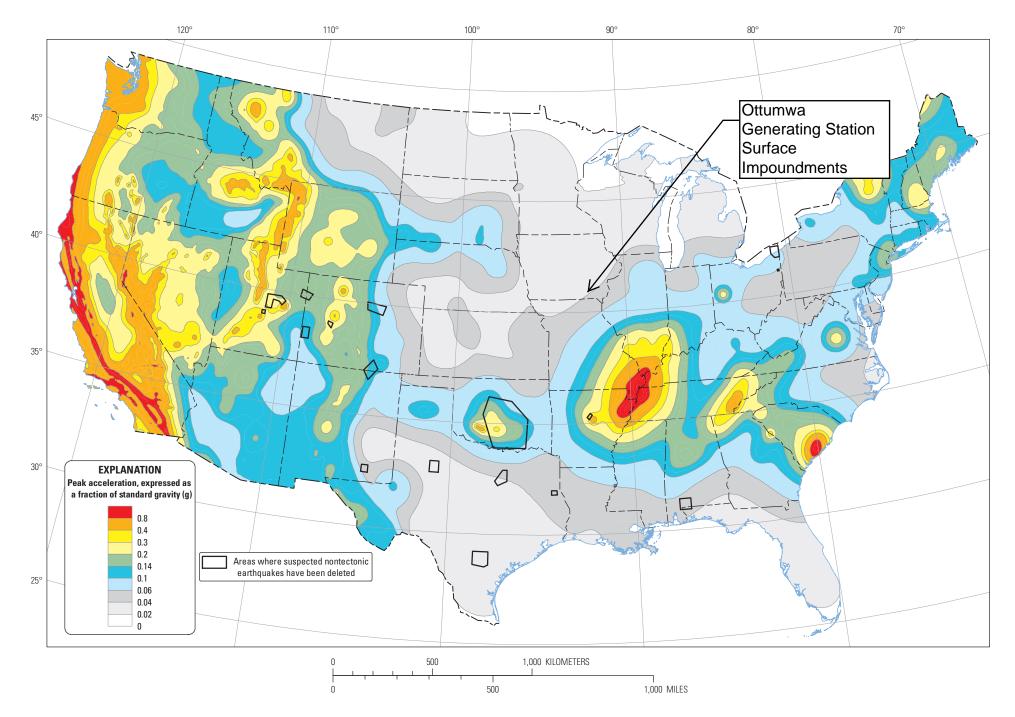
Esri, USGS | Esri, HERE, Garmin, FAO, NOAA, USGS, EPA | Acknowledgment of the Quaternary Faults and Fold Database, the U.S. Geological Survey, and (or) the National Atlas of the United States of America would be appreciated in products derived from these data. Appendix C

Seismic Hazard Map

Location Restriction Compliance Demonstration

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Two-percent probability of exceedance in 50 years map of peak ground acceleration