



VIA EMAIL

December 26, 2023

Mr. Jeffrey Maxted
Alliant Energy
4902 North Biltmore Lane
Madison, WI 53718-2148

**Re: Hazard Potential Classification Assessment – Revision 2- §257.73(a)(2)
Alliant Energy – Interstate Power and Light Company
IPL – Burlington Generating Station
Burlington, Iowa**

Mr. Maxted,

Hard Hat Services completed Revision 2 to the hazard potential classification assessment for the existing CCR surface impoundments located at the Interstate Power and Light Company (IPL) Burlington Generating Station (BGS) in Burlington, Iowa.

Background Information

In accordance with the requirements set forth in §257.73(a)(2) of the CCR Rule, an owner or operator of an existing CCR surface impoundment must conduct initial and periodic hazard potential classification assessments of their CCR surface impoundment, except for those existing CCR surface impoundments that are incised. The owner or operator must determine each CCR surface impoundment hazard potential classification through a hazard potential classification assessment.

FEMA (FEMA Publication 333, Federal Guidelines for Dam Safety, Hazard Potential Classification System for Dams, April 2004) developed a “hazard potential” classification in order to classify surface impoundments based on the probable loss of human life, and the impacts on economic, environmental, and lifeline interests in the event of an unintentional release from a surface impoundment. Three hazard potential classification levels are used, as follows:

1. High Hazard Potential – Assigned to surface impoundments where failure or mis-operation will probably cause loss of human life.
2. Significant Hazard Potential – Assigned to surface impoundments where failure or mis-operation results in no probable loss of human life, but can cause economic loss,

environmental damage, or disruption of lifeline facilities or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

3. Low Hazard Potential – Assigned to surface impoundments where failure or mis-operation has no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner’s property.

Facility Specific Information

The IPL – Burlington Generating Station (BGS) is located at 4282 Sullivan Slough Road, Burlington, Iowa 52601. Figure 1 provides both a topographic map and an aerial of the BGS facility location, with the approximate property boundary of the facility identified. BGS has four existing CCR surface impoundments, which are identified as follows:

- BGS Ash Seal Pond
- BGS Main Ash Pond
- BGS Economizer Pond
- BGS Upper Ash Pond

Construction activities related to the closure of the BGS impoundments are substantially complete. Closure activities of the generally included consolidation of the CCR from the Ash Seal Pond and the BGS Upper Ash Pond into the BGS Economizer Pond and BGS Main Ash Pond areas, capping the CCR and sloping the final grade to drain stormwater into the surrounding ditches or the stormwater collection basin within the footprint of the BGS Upper Ash Pond.

BGS Ash Seal Pond

The BGS Ash Seal Pond was located south of the generating plant and east of the BGS Main Ash Pond (Figure 2). The CCR, in 1968, was originally managed by discharging into the BGS Ash Seal Pond for settling. The surface area of the BGS Ash Seal Pond was approximately 5.7 acres and had an embankment height of approximately 12 feet from the crest to the toe of the downstream slope. The interior storage depth of the BGS Ash Seal Pond was approximately 8.5 feet.

Presently, CCR has been removed from the BGS Ash Seal Pond and placed into either the BGS Main Ash Pond or the BGS Economizer Pond areas. The BGS Ash Seal Pond has been backfilled with aggregate, finished with topsoil, seeded, and graded to drain stormwater into the condenser discharge channel. There is no storage of stormwater or process water within the BGS Ash Seal Pond. The impoundment no longer impounds storm or process water.

BGS Main Ash Pond

The BGS Main Ash Pond was located southwest of the generating plant and west of the BGS Ash Seal Pond (Figure 2). The CCR, prior to being sluiced to the BGS Main Ash Pond, was originally managed in the BGS Ash Seal Pond in 1968. In 1971, BGS managed CCR in the BGS Upper Ash Pond. In 1980, the BGS Main Ash Pond became the primary receiver of CCR, with the BGS Upper Ash Pond becoming a downstream receiver of process water and storm water. The surface area of the BGS Main Ash Pond was approximately 18.7 acres and had an

embankment height of approximately 12 feet from the crest to the toe of the downstream slope. The interior storage depth of the BGS Main Ash Pond was approximately 8 feet.

Historically, the BGS Main Ash Pond received bottom ash that was sluiced from the generating plant to the northeast corner of the BGS Main Ash Pond where the majority of the bottom ash settled out. The bottom ash was recovered for beneficial reuse or landfilling. Hydrated fly ash was also stored within the Main Ash Pond area prior to being sold as aggregate material for beneficial reuse. The water used to sluice the bottom ash into the BGS Main Ash Pond was routed towards the west end of the BGS Main Ash Pond. From that point, the water flowed to the west along the north side of a road constructed out of bottom ash through the center of the BGS Main Ash Pond. It flowed along the north side of the road until it reached the west end where it transitioned into a ponded area in the northwest corner of the BGS Main Ash Pond. The water in the northwest corner of the BGS Main Ash Pond flowed through two corrugated metal culverts under the generating plant entrance road where it discharged into a small channel in the southwest corner of the BGS Upper Ash Pond located north of the generating plant entrance road.

Immediately south of the BGS Main Ash Pond the U.S. Fish and Wildlife Service National Wetlands Inventory has identified a “Freshwater Forested/Shrub Wetland” with Classification Codes: PF01A (135 acres) and PF01C (559 acres). The October 29, 2020 Location Restriction Compliance Demonstration identifies that the BGS Main Ash Pond was not located in wetlands as defined by 40 CFR 232.2.

Presently, the CCR has been leveled, graded, capped, finished with topsoil, and seeded. Stormwater sheet drains overland toward the west where it is discharged into the western ditch line. There is no storage of stormwater or process water within the BGS Main Ash Pond. The impoundment no longer impounds storm or process water.

BGS Economizer Pond

The BGS Economizer Pond was located northwest of the generating plant and north of the BGS Main Ash Pond (Figure 2). In 1986, BGS constructed the BGS Economizer Pond in the southern and eastern portion of the original footprint of the BGS Upper Ash Pond. The pond has resulted from economizer ash that has been deposited since 1986, which created the economizer ash pile. The total surface area of the BGS Economizer Pond and economizer ash pile was approximately 11 acres and has an embankment height of approximately 13 feet from the crest to the toe of slope. The interior storage depth of the top of the economizer ash pile to the bottom of the original footprint of the BGS Upper Ash Pond was approximately 27 feet.

Historically, BGS collected storm water from the parking areas which drained into a pump vault located at the toe of the downstream slope of the east embankment of the BGS Economizer Pond. Additionally, plant process water flowed through an oil/water separator and received influent flows from the plant floor drains and water treatment process water. After the oil/water separator, the process water also discharged into the pump vault. The storm water and process water were pumped from the vault up to the BGS Economizer Pond storm water channel where it combined with the economizer sluice water. The BGS Economizer Pond received economizer ash and sluice water. The economizer ash was sluiced from the generating plant to the east end

of the BGS Economizer Pond via a 10-inch diameter polyvinyl chloride pipe. The economizer ash settled out through the water column of the BGS Economizer Pond while the water flows to the west. The water discharged from the BGS Economizer Pond through an 18-inch diameter high-density polyethylene pipe into a storm water and process water channel located along the south side of the economizer ash pile. The storm water channel flowed to the west along the south side of the economizer ash pile until it discharged through an 18-inch diameter high-density polyethylene pipe located in the southwest corner of the economizer ash pile. The water from the storm water channel discharged into a small channel located west of the economizer ash pile and north of the generating plant entrance road. The water in the channel flowed to the west along the north side of the generating plant entrance road. The water was then routed to the north along the east side of Sullivan Slough Road, and along the south side of the gravel dike of the BGS Upper Ash Pond until it discharged into the southwest corner of the BGS Upper Ash Pond.

The October 29, 2020 Location Restriction Compliance Demonstration identifies that the BGS Economizer Pond is not located in wetlands as defined by 40 CFR 232.2.

Presently, the footprint of the BGS Economizer Ash Pond has increased in size and height due to the consolidation of CCR materials from the BGS Upper Ash Pond and the BGS Ash Seal Pond and no longer contains impounded water. The CCR materials were graded, capped, finished with topsoil, and seeded. Stormwater runoff is shed into a newly constructed stormwater basin within the BGS Upper Ash Pond area. The stormwater from the stormwater and process water pump vault has been rerouted to directly discharge into the BGS Lower Pond. The impoundment no longer impounds storm or process water.

BGS Upper Ash Pond

The BGS Upper Ash Pond was located northwest of the generating plant and north of the BGS Main Ash Pond. In 1971, BGS began managing CCR in the BGS Upper Ash Pond (Figure 2). In 1980, the BGS Main Ash Pond became the primary receiver of CCR and the BGS Upper Ash Pond became a downstream receiver of the BGS Main Ash Pond. The total surface area of the BGS Upper Ash Pond was approximately 13.3 acres and had an embankment height of approximately 10 feet from the crest to the toe of the downstream slope. The interior storage depth of the BGS Upper Ash Pond was approximately 7 feet.

Historically, the BGS Upper Ash Pond received influent flows from the BGS Main Ash Pond, BGS Economizer Pond, which also received storm water and process water flow from the generating plant. The influent flows all discharged into a small channel located in the southwest corner of the BGS Upper Ash Pond. The water in the channel routed along the south side of the gravel dike of the BGS Upper Ash Pond until it discharged into the southwest corner of the water body within the BGS Upper Ash Pond. The water flow continued through the BGS Upper Ash Pond water body to the northeast towards a 24-inch wide precast concrete Parshall flume which discharged into a concrete catch basin. The water in the catch basin flowed through a 15-inch diameter polyvinyl chloride pipe and discharged into the BGS Lower Pond. The discharge from the concrete catch basin entered the BGS Lower Pond. The Lower Pond contains the facility's National Pollution Discharge Elimination System (NPDES) Outfall 001.

Immediately north of the BGS Upper Ash Pond the U.S. Fish and Wildlife Service National Wetlands Inventory has identified several wetlands that are “Freshwater Forested/Shrub Wetland” and “Freshwater Emergent Wetland” with Classification Codes: PEMFx (0.84 acres) and PF01Cx (1.5 acres). The October 29, 2020 Location Restriction Compliance Demonstration identifies that the BGS Upper Ash Pond is not located in wetlands as defined by 40 CFR 232.2.

Presently, the footprint of the BGS Upper Ash Pond has decreased in size due to the increase of footprint of the BGS Economizer Ash Pond. The CCR has been removed from the majority of the BGS Upper Ash Pond and consolidated into the BGS Economizer Ash Pond and the BGS Main Ash Pond. The remaining area of the BGS Upper Ash Pond is now a storm water detention pond which has been reinforced with rip rap on the upstream and downstream embankments. The Parshall flume discharge structure remains in place.

Hazard Potential Classification

Each existing CCR surface impoundment has been assigned a hazard potential classification, as identified below.

BGS Ash Seal Pond

BGS Ash Seal Pond closure construction activities are substantially complete and therefore no longer operates as an impoundment as it doesn't have the potential to impound water. The FEMA Federal Guidelines for Dam Safety, April 2004 states that, *“This hazard potential classification system should be utilized with the understanding that the failure of any dam or water-retaining structure, no matter how small, could represent a danger to downstream life and property. Whenever there is an uncontrolled release of stored water, there is the possibility of someone, regardless of how unexpected, being in its path.”* The FEMA guidance does not apply to the BGS Ash Seal Pond because it no longer acts like a dam or water-retaining structure and no longer has the potential for an uncontrolled release of stored water. Because there isn't a “No Potential” option “under the FEMA guidelines, the BGS Ash Seal Pond has been assigned a **Low Hazard Potential** classification.

BGS Main Ash Pond

BGS Main Ash Pond closure construction activities are substantially complete and therefore no longer operates as an impoundment as it doesn't have the potential to impound water. The FEMA Federal Guidelines for Dam Safety, April 2004 states that, *“This hazard potential classification system should be utilized with the understanding that the failure of any dam or water-retaining structure, no matter how small, could represent a danger to downstream life and property. Whenever there is an uncontrolled release of stored water, there is the possibility of someone, regardless of how unexpected, being in its path.”* The FEMA guidance does not apply to the BGS Main Ash Pond because it no longer acts like a dam or water-retaining structure and no longer has the potential for an uncontrolled release of stored water. Because there isn't a “No Potential” option under the FEMA guidelines, the BGS Main Ash Pond has been assigned a **Low Hazard Potential** classification.

BGS Economizer Pond

BGS Economizer Pond closure construction activities are substantially complete and therefore no longer operates as an impoundment as it doesn't have the potential to impound water. The

FEMA Federal Guidelines for Dam Safety, April 2004 states that, *“This hazard potential classification system should be utilized with the understanding that the failure of any dam or water-retaining structure, no matter how small, could represent a danger to downstream life and property. Whenever there is an uncontrolled release of stored water, there is the possibility of someone, regardless of how unexpected, being in its path.”* The FEMA guidance does not apply to the BGS Economizer Pond because it no longer acts like a dam or water-retaining structure and no longer has the potential for an uncontrolled release of stored water. Because there isn’t a “No Potential” option under the FEMA guidelines, the BGS Economizer Pond has been assigned a **Low Hazard Potential** classification.


BGS Upper Ash Pond

BGS Upper Ash Pond closure construction activities are substantially complete, and the footprint is currently comprised of a storm water detention pond. Mis-operation or failure will likely not result in loss of life as there are no occupied buildings or residences located in the immediate vicinity of the CCR surface impoundment. There is a minimal potential to disrupt a lifeline as there are no local streets or county roads located near the storm water impoundment. A release to the north has the potential to disturb the identified wetland area PF01Cx located north of the BGS Lower Pond but would likely be limited to the facility property. Therefore low economic losses and environmental damages would likely be limited to the facility property. BGS Upper Ash Pond has been assigned a **Low Hazard Potential** classification.

Qualified Professional Engineer Certification

To meet the requirements of 40 CFR 257.73(a)(2)(ii), I Mark W. Loerop hereby certify that I am a licensed Professional Engineer in the State of Iowa; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in 40 CFR 257.73(a)(2).



By: 
Name: MARK W. LOEROP
Date: DEC 26, 2023

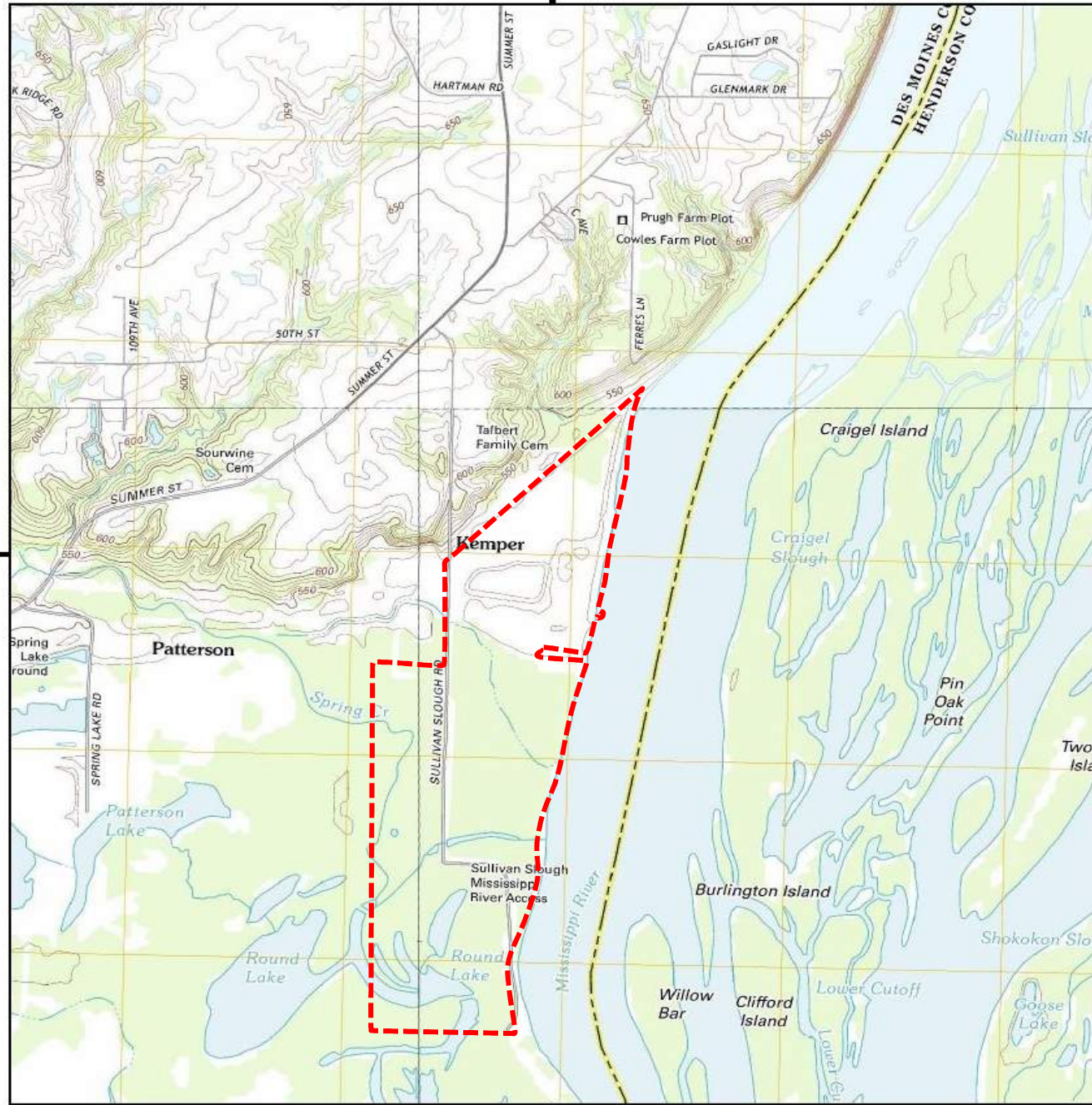
cc: Robin Nelson, IPL – Burlington Generating Station

att: Figure 1 – Site Location
Figure 2 – Wetland Location Map

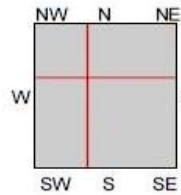
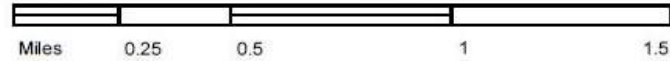
MWL/mwl/RAS
<https://hardhatinc.sharepoint.com/Shared Documents/Projects/154 - Alliant Energy/154.018 - CCR Projects/026 - 2023 CCR Work/001 - BGS/Haz Pot Class/BGS Haz Pot Rev 2 2023 - FINAL.docx>

Historical Topo Map

2012, 2013



This report includes information from the following map sheet(s).

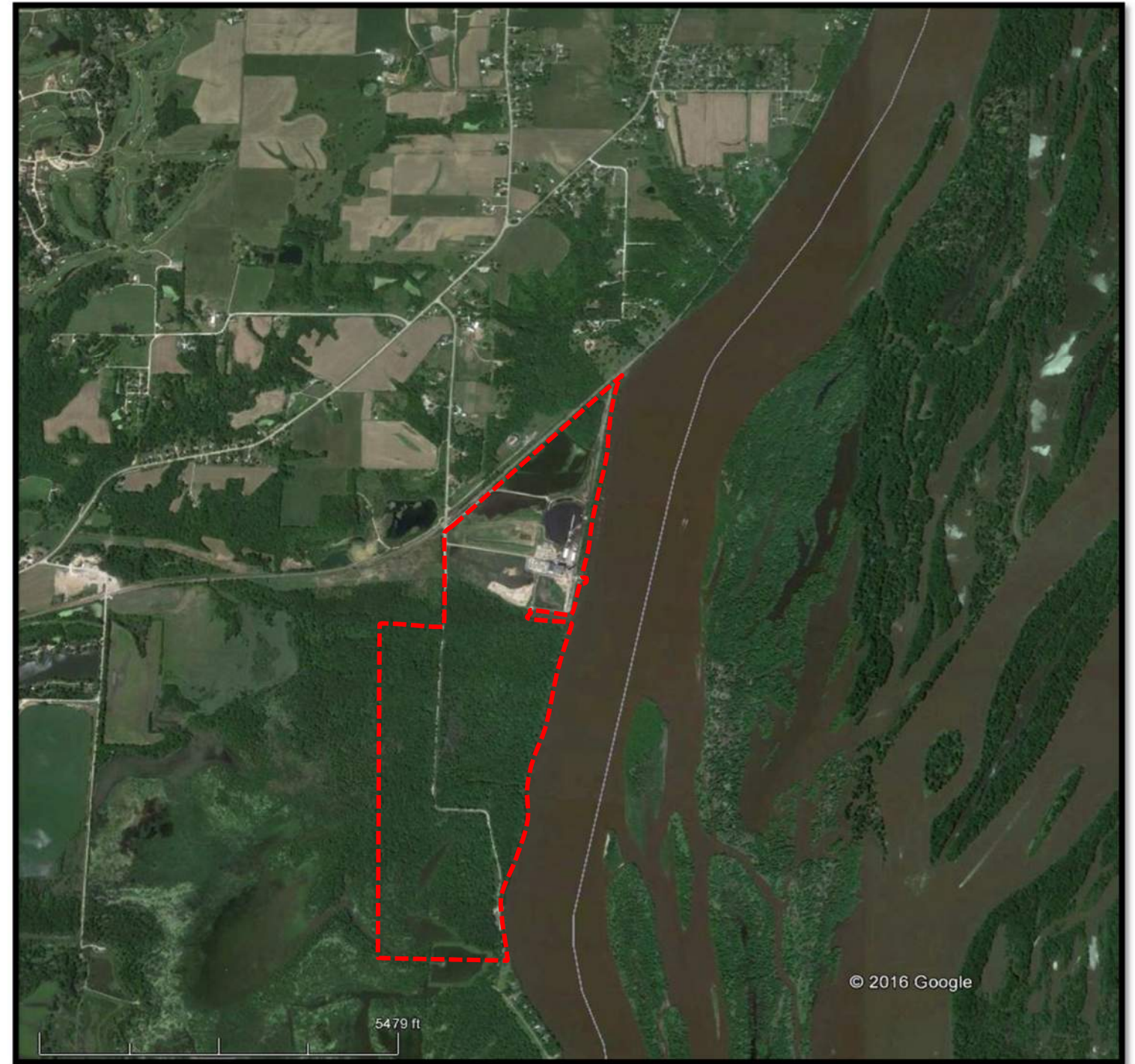


TP, Lomax, 2012, 7.5-minute
 NE, Burlington, 2013, 7.5-minute
 SW, Dallas City, 2012, 7.5-minute
 NW, West Burlington, 2013, 7.5-minute

SITE NAME: Burlington Generating Station
 ADDRESS: 4282 Sullivan Slough Road
 Burlington, IA 52601
 CLIENT: Environmental Site Assessors



Historical Aerial Photo 6/12/2014

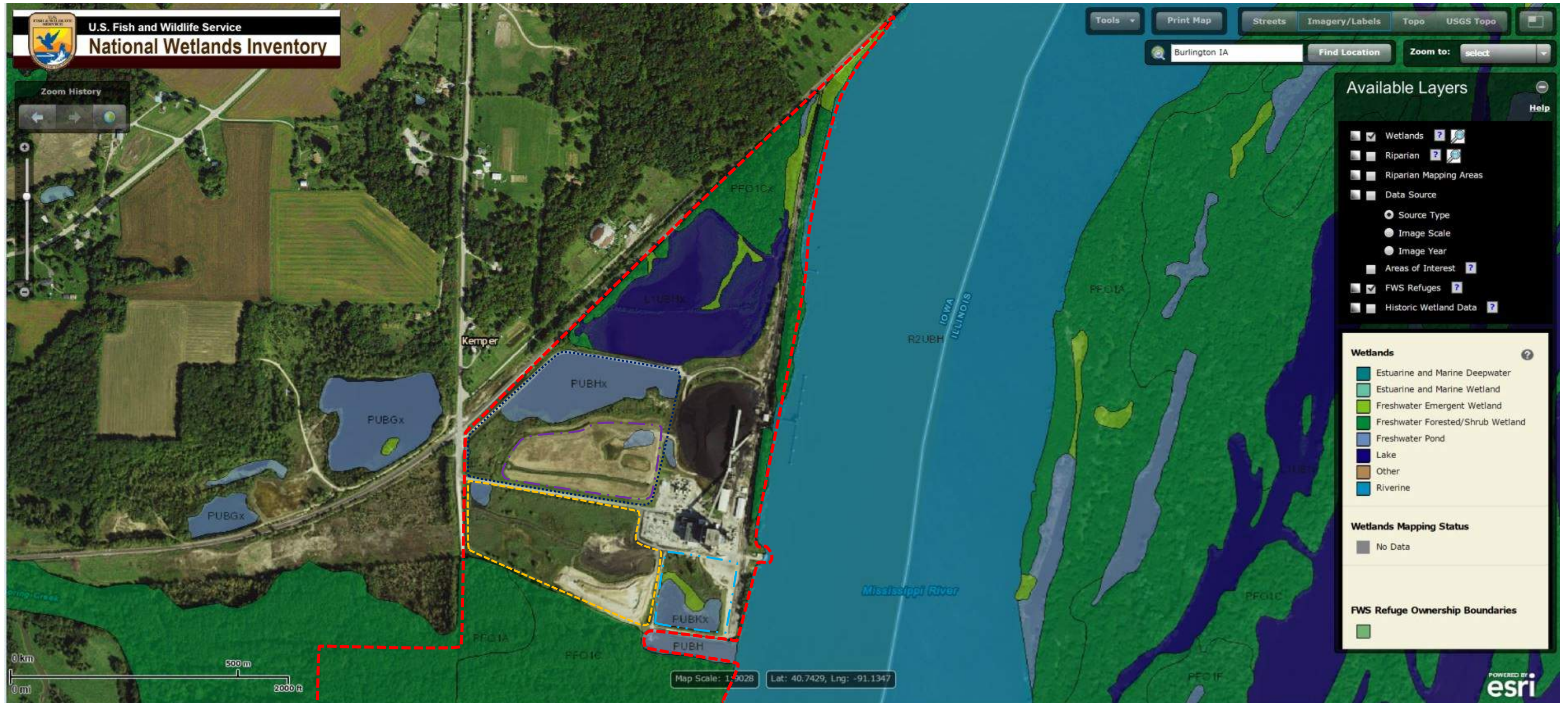


----- Approximate Property Boundary



Site Location
 Burlington Generating Station
 Intersate Power and Light Company

Drawing
 Figure 1
 Date
 5/25/2016



- - - - - Approximate Property Boundary
- . . . - BGS Ash Seal Pond
- - - - - BGS Main Ash Pond
- . . . - BGS Upper Ash Pond
- . . . - BGS Economizer Pond



Wetland Location Map
 Burlington Generating Station
 Intersate Power and Light Company

Drawing
 Figure 2
 Date
 5/25/2016