

Semiannual Progress Report Selection of Remedy – Lansing Generating Station

Lansing Generating Station
Lansing, Iowa

Prepared for:

Alliant Energy



SCS ENGINEERS

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1.0 INTRODUCTION AND PURPOSE

The Semiannual Progress Report for remedy selection at the Interstate Power and Light Company (IPL) Lansing Generating Station (LAN) was prepared to comply with U.S. Environmental Protection Agency (U.S. EPA) regulations regarding the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities [40 CFR 257.50-107], or the “CCR Rule” (Rule). Specifically, the selection of remedy process was initiated to fulfill the requirements of 40 CFR 257.97.

1.1 BACKGROUND

The Assessment of Corrective Measures (ACM) for the LAN Landfill and LAN Upper Ash Pond was completed on September 12, 2019. The ACM was completed in response to the detection of arsenic at a statistically significant level (SSL) above the Groundwater Protection Standard (GPS) in groundwater samples from downgradient monitoring well MW-302. An ACM addendum was completed on November 25, 2020.

This Semiannual Progress Report summarizes data collected and remedy evaluation progress made since the September 2019 ACM and November 2020 ACM Addendum No. 1, and outlines planned future activities. This semiannual progress report covers the 6-month period of March 2023 through August 2023.

IPL has continued to evaluate the source of the arsenic GPS exceedance since the November 2020 ACM was submitted and it appears that it is not associated with the CCR units. A second ACM addendum was completed in June 2023 for the current No-Action alternative. A selection of remedy report is being prepared as a continuation of the ACM process.

1.2 SITE INFORMATION AND MAPS

LAN is located along the west bank of the Mississippi River, south of the City of Lansing, in Allamakee County, Iowa. The address of the generating station is 2320 Power Plant Drive in Lansing, Iowa (**Figure 1**). The coal-fired generating plant at LAN ceased coal-fired electric generating activities at the end of 2022 and is currently being decommissioned. The facility also includes a CCR landfill (LAN Landfill) and a CCR settling pond (LAN Upper Ash Pond), which are currently being closed.

The two CCR units at the facility (LAN Landfill and LAN Upper Ash Pond) are monitored with a multi-unit groundwater monitoring system and are the subject of this Semiannual Progress Report. A map showing the CCR units and all background (or upgradient) and downgradient monitoring wells with identification numbers for the CCR groundwater monitoring program is provided as **Figure 2**.

Groundwater flow at the site is generally to the north-northwest, and the groundwater flow direction and water levels fluctuate seasonally due to the proximity to the river. Depth to groundwater as measured in the site monitoring wells historically varies from 1 to 107 feet below ground surface due to topographic variations across the facility and seasonal variations in water levels. However, these depths to water were measured when there was either ongoing sluicing to the ash pond or during dewatering activities for closure. Both sluicing and dewatering have been completed, so future water level measurements will not be affected by either.

2.0 SUMMARY OF WORK COMPLETED

Work completed to support remedy selection for the LAN Landfill and LAN Upper Ash Pond is summarized in **Table 1A**. Work completed on the landfill and impoundment closures is summarized in **Table 1B**. Activities completed within the 6-month period covered by this Semiannual Progress Report are discussed in more detail below.

2.1 MONITORING NETWORK CHANGES

There were no changes to the LAN monitoring well network between March 2023 and August 2023. The monitoring well locations are shown on **Figure 2**.

2.2 GROUNDWATER MONITORING

Since confirmation of the arsenic exceedance in MW-302, multiple groundwater samples have been collected from the site to understand the nature and extent of any arsenic release. Prior to this reporting period, IPL continued with assessment monitoring and also collected samples from eight delineation wells on site for groundwater quality parameters (dissolved arsenic, total and dissolved iron, magnesium, total and dissolved manganese, dissolved molybdenum, potassium, sodium, total, carbonate, and bicarbonate alkalinity). This and supporting data indicate that a source other than the CCR units is causing the exceedance, such as a change in the geochemistry immediately at or around monitoring well MW-302 due to the presence of organic carbon in the soil. Samples have also been collected from an additional monitoring well installed at the downgradient waste boundary, an underground intercept drain along the waste boundary, and nearby surface waters; additional samples indicate the CCR units are not the source of the arsenic concentrations above the GPS in groundwater samples from MW-302. Additional information is presented in **Section 2.5**.

Since the March 2023 semiannual update, groundwater samples were collected during one event in April 2023. The one event included the following:

- The April monitoring event was part of the routine semiannual assessment monitoring program.
- The wells sampled and water levels measured included the wells in the original monitoring program (MW-6, MW-301, MW-302, and MW-303) and eight additional wells (MW-302A, MW-304, MW-304A, MW-305, MW-306, MW-306A, MW-307, and MW-307A). Note that MW-303 was dry during the April 2023 event.

A full round of monitoring well and staff gauge measurements was also performed in April 2023. Both CCR Rule monitoring wells and state monitoring program wells were included.

A summary of groundwater samples collected since submittal of the ACM is provided in **Table 2**.

2.3 STATISTICAL EVALUATION

Statistical evaluation of sampling results during the period covered by this update will be discussed in the 2023 Annual Groundwater Monitoring and Corrective Action Report, due on January 31, 2024.

2.4 LANDFILL AND ASH POND CLOSURE

IPL has worked to close the LAN Landfill in 2023 by placing a final cover over the remaining active area in accordance with the written Closure Plan issued in September 2016. Additionally, IPL has worked to close the LAN Upper Ash Pond in 2023 by a combination of CCR removal, consolidation within the CCR surface impoundment limits, and in-place closure with a cap. Closure by removal has been performed in the North Pond Closure Area (northern portion of the LAN Upper Ash Pond) and consolidated to the South Pond Closure Area (southern portion of the LAN Upper Ash Pond). In-place CCR and consolidated CCR, coal, and coal-impacted soil were placed in the South Pond Closure Area. After the planned decommission/closure activities, the LAN Upper Ash Pond was capped with a low-permeability soil cover as described in the November 13, 2020, Closure Plan for Existing CCR Surface Impoundment – Amendment No. 2. Key closure activities completed during the reporting period included:

- Removal of the elevated walkway and former outfall structure at the north end of the LAN Upper Ash Pond.
- Received Iowa Department of Natural Resources (DNR) Flood Plain Development Permit.
- Received Sovereign Lands Construction Permit from Iowa DNR and Flood Plain Development Permit from Allamakee County.
- Abandoned groundwater dewatering wells.
- Received Joint Permit Application Approval from the U.S. Army Corps of Engineers (USACE).
- LAN Landfill Closure
 - Final Cover system construction over the remaining CCR within the unit was initiated. The final cover consists of the following:
 - 24-inch thick infiltration layer constructed of select clay. Placement and testing of the select clay material for the infiltration layer in accordance with the Closure Plan and Construction Quality Assurance (CQA) Plan was completed.
 - 6-inch thick rooting zone layer constructed of dredged sand from the USACE dredge sand stockpile. Placement and testing of the rooting zone material for the final cover construction in accordance with the Closure Plan and CQA Plan was completed.
 - 6-inch thick erosion layer construction of topsoil. Topsoil placement for the erosion layer will continue into the next semiannual reporting period.
 - Restoration activities including post-closure stormwater conveyance feature installation, seeding, fertilizing, and mulching were initiated and will continue into the next semiannual reporting period.
- LAN Upper Ash Pond Closure
 - Excavated CCR materials from the north half of the LAN Upper Ash Pond and placed materials into the South Pond Closure Area.

- Excavated coal and coal-impacted soils from the coal yard and placed it in the LAN Landfill and South Pond Closure Area.
- Placed and compacted imported general fill in the north half of the LAN Upper Ash Pond where CCR was removed for closure.
- Final Cover system constructed over the remaining CCR within the unit was initiated. The final cover consists of the following:
 - 18-inch thick infiltration layer constructed of low permeability soil. Placement and testing of the low permeability soil for the infiltration layer in accordance with the Closure Plan and CQA Plan was completed.
 - 6-inch thick erosion layer construction of topsoil. Topsoil placement for the erosion layer will continue into the next semiannual reporting period.
- Restoration activities including post-closure stormwater conveyance feature installation was initiated and will continue into the next semiannual reporting period.

A summary of the CCR unit closure activities completed during the current reporting period is provided in **Table 1B**.

2.5 EVALUATION OF CORRECTIVE MEASURE ALTERNATIVES

A qualitative assessment of potential Corrective Measure Alternatives using the selection criteria in 40 CFR 257.97(b) and (c) was provided in the September 2019 ACM and revised in the November 2020 ACM Addendum No. 1.

The ACM Report and ACM Addendum No. 1 were originally prepared based on the potential relationship of the arsenic impacts to the disposal of CCR. Based on continued assessment of the nature and extent of arsenic, the source of the arsenic is unrelated to the LAN Landfill and LAN Upper Ash Pond. This additional assessment is summarized in the ACM Addendum No. 2, which was completed in June 2023 and the contents of this updated progress report were discussed at the public meeting in July.

Several activities have been completed since the initial arsenic GPS exceedances to enhance IPL's understanding of arsenic concentrations downgradient of the CCR units:

- Installation and sampling of the monitoring well nest MW-307 and MW-307A directly between the arsenic-impacted well MW-302 and the CCR units.
- Installation of water level wells MW-308 and MW-309 to the north of well MW-302.
- Four rounds of groundwater sampling at monitoring wells MW-307/MW-307A.
- Re-evaluation of horizontal and vertical groundwater flow conditions after the installation of the new MW-307/MW-307A wells and water level wells MW-308 and MW-309.
- Two rounds of surface water sampling results from the surface water outfall adjacent to impacted monitoring well MW-302.

- A review of the CCR well boring logs to identify variations in soil and presence of natural sources of organic carbon.
- Water sample analysis from the Upper Ash Pond.
- Evaluation of the interceptor drain located between the Upper Ash Pond and well MW-302.
- Evaluation of the construction and closure history of the Lower Ash Pond located between the CCR units and well MW-302.
- A geochemical assessment of arsenic in groundwater by ReSolution Partners LLC.

The site conceptual model has been revised to incorporate information from the activities listed above and are included in the ACM Addendum No. 2.

Arsenic occurs naturally in the environment but is also commonly present in CCRs. The LAN CCR Units do not appear to be the source of the arsenic GPS exceedances. Supporting evidence includes 1) consistently low arsenic concentrations in laboratory tests of groundwater samples from the monitoring well nest installed between the CCR Units and the well where arsenic concentrations exceed the GPS, and 2) arsenic concentrations below the GPS from a sample of the groundwater interceptor drain installed between the Upper Ash Pond and the well where arsenic concentrations exceeded the GPS.

One line of evidence supporting an alternate source of arsenic GPS exceedances observed anoxic reducing conditions that can result in increased arsenic concentrations in a localized area near the well with arsenic GPS exceedances. Anoxic conditions may be caused by the organic material described in the boring log of the well with arsenic GPS exceedances, which was absent in other site monitoring wells.

2.6 PUBLIC MEETING

In accordance with 40 CFR 257.96(e), IPL held a public meeting to discuss the ACM Addendum No. 2 on July 17, 2023. The meeting was open to interested and affected parties, and, due to the COVID-19 pandemic, was held virtually using an interactive online meeting platform.

3.0 PLANNED ACTIVITIES

Planned activities within the next reporting period include the following:

- Continue semiannual assessment monitoring for the existing monitoring well network and new monitoring wells.
- Continue evaluation of groundwater flow and groundwater quality.
- Update conceptual site model based on findings of the ongoing groundwater sampling.
- Complete the Selection of Remedy report.

Planned activities related to the CCR unit closure process include the following:

- LAN Landfill
 - Complete access road construction.
 - Complete storm water conveyance installation.
 - Complete seeding and erosion mat placement.
- LAN Upper Ash Pond
 - Finish topsoil placement for the final cover erosion layer.
 - Finish topsoil placement for the restoration of the North Upper Ash Pond.
 - Complete access road construction.
 - Complete storm water conveyance installation.
 - Complete seeding and erosion mat placement.
- Complete project cleanup/substantial completion.
- Obtain certification by a qualified professional engineer that closure was completed in accordance with the Closure Plan per 40 CFR 257.102(f)(3).
- Prepare a notification of closure for the two CCR units per 40 CFR 257.102(h).
- Record deed notations and prepare corresponding notifications for the Upper Ash Pond and Landfill in accordance with 40 CFR 257.102(i).
- Submit Construction Documentation Report to the Iowa DNR.

Tables

- 1A Timeline for Completed Groundwater Sampling and Corrective Action Work – Selection of Remedy
- 1B Timeline for Closure Related Work – Selection of Remedy
- 2 CCR Rule Groundwater Samples Summary

**Table 1A. Timeline for Completed Groundwater Sampling and Corrective Action Work
Selection of Remedy
Lansing Generating Station / SCS Engineers Project #25220082.00**

Date	Activity
Activities Completed During Previous Semiannual Reporting Periods	
May 2019	Installed additional monitoring wells to investigate nature and extent (MW-304, MW-305, and MW-306).
June 2019	Sampled new monitoring wells (MW-304, MW-305, and MW-306).
September 2019	Completed ACM.
September 2019	Completed the Well Documentation Report for new wells.
October/November 2019	Planned field investigation for extent and quantity of source areas and geotechnical properties for remedy evaluation.
October to December 2019	Planning, permitting, and access arrangements for three additional monitoring wells (piezometers) to investigate the vertical extent of impacts.
December 2019	Installed additional monitoring wells (piezometers) to investigate vertical groundwater flow and groundwater quality.
December 2019	Sampled assessment well MW-306.
January 2020	Completed Statistical Evaluation of October 2019 groundwater monitoring results.
January 2020	Completed 2019 Annual Groundwater Monitoring and Corrective Action Report.
February 2020	Sampled assessment well MW-306.
March 2020	Completed Semiannual Progress Report for the Selection of Remedy.
July 2020	Sampled new piezometers 302A, 304A, and 306A.
August 2020	Initiated planning for the public ACM meeting.
August 2020	Completed annual landfill Inspection.
September 2020	Completed Semiannual Progress Report for the Selection of Remedy.
October 2020	Held public ACM meeting.
November 2020	Submitted application to EPA for a site-specific alternative deadline to initiate closure of the Upper Ash Pond.
November 2020	Completed ACM Addendum No. 1.
December 2020	Completed additional LAN Upper Ash Pond CCR sampling for bench scale testing.

**Table 1A. Timeline for Completed Groundwater Sampling and Corrective Action Work
Selection of Remedy
Lansing Generating Station / SCS Engineers Project #25220082.00**

Date	Activity
January 2021	Completed 2020 Annual Groundwater Monitoring and Corrective Action Report.
February 2021	Sampled MW-304A and MW-306 for selected parameters.
March 2021	Completed Semiannual Progress Report for the Selection of Remedy.
June 2021	Sampled both plant water supply wells for molybdenum.
June 2021	Installed three additional monitoring wells and a piezometer to provide additional information on vertical and horizontal groundwater flow, as well as target groundwater quality parameters.
July 2021	Sampled MW-304A, MW-306, MW-307, and MW-307A for selected parameters.
August 2021	Performed research on regional molybdenum concentrations in bedrock.
August 2021	Completed Well Documentation Report for monitoring wells MW-307, MW-307A, MW-308, and MW-309.
August 2021	Completed additional sampling event at MW-307 and MW-307A.
September 2021	Completed Semiannual Progress Report for the Selection of Remedy.
October 2021	Completed semiannual assessment monitoring event, including additional groundwater quality parameters.
January 2022	Completed Statistical Evaluation of October 2021 groundwater monitoring results.
January 2022	Completed 2021 Annual Groundwater and Monitoring and Corrective Action Report.
October 2021 - February 2022	Updated arsenic in groundwater evaluation and site conceptual model.
February 2022	Measured water levels in all site monitoring wells.
February 2022	Collected additional sample from combined outfall 001 and surface water near well MW-302.
March 2022	Completed Semiannual Progress Report for Selection of Remedy.
April 2022	Conducted semiannual assessment monitoring event.
May 2022	Complete Abandonment of MW-20, a non-CCR network well used to assess groundwater elevations and groundwater quality between the LAN Landfill and LAN Upper Ash Pond. The well was abandoned to make way for closure activities.
June 2022	Completed Statistical Evaluation of February 2022 groundwater monitoring results.
September 2022	Completed Semiannual Progress Report for the Selection of Remedy.
September 2022	Met with EPA to discuss format of an ASD/ACM Addendum, or SOR that permits moving forward with no planning corrective actions for an arsenic SSL.
October 2022	Completed semiannual assessment monitoring event, including additional groundwater quality parameters.

**Table 1A. Timeline for Completed Groundwater Sampling and Corrective Action Work
Selection of Remedy
Lansing Generating Station / SCS Engineers Project #25220082.00**

Date	Activity
December 2022	Received feedback from EPA on the process for documenting nature and extent analysis within an ACM addendum and the SOR report.
December 2022- February 2023	Prepared draft ACM Addendum No. 2 that provides evidence of no SSLs related to the CCR Units
January 2023	Completed Statistical Evaluation of October 2022 groundwater monitoring results.
January 2023	Completed 2022 Annual Groundwater and Monitoring and Corrective Action Report.
February 2023	Completed the October 2022 Groundwater Results Report
Activities Completed During the Current Semiannual Reporting Period	
March 2023	Completed of Semiannual Progress Report - Selection of Remedy
April 2023	Conducted Semiannual groundwater monitoring event
June 2023	ACM Addendum No. 2 Report completed.
July 2023	Public meeting held July 17, 2023.
July - August 2023	Dewatering well abandonments.
August 2023	Completion of April 2023 Sampling Results report.

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**Table 1B. Timeline for Closure Related Work
Selection of Remedy
Lansing Generating Station / SCS Engineers Project #25220082.00**

Date	Activity
Activities Completed During Previous Semiannual Reporting Periods	
May 2020	Completed hydrographic survey of the LAN Upper Ash Pond and LAN Landfill topographic survey.
June 2020	Completed field phase of a geotechnical study of the CCR surface impoundment.
January 2021	Completed benchtop dredge test and laboratory testing of residual CCR.
March 2021	Issued a Request for Proposal (RFP) to landfill and pond closure contractors to conduct pre-construction services.
July 2021	Selected a contractor to provide preconstruction services for ash pond and landfill closures.
August 2021	Conducted design reviews and site visits with pond and landfill closure preconstruction services contractor and evaluated permitting needs for preconstruction field testing. Initiated field testing.
August 2021	Performed test pits in and around the LAN Landfill and LAN Upper Ash Pond to evaluate site conditions and CCR behavior during excavation, moisture conditioning, and placement.
August - September 2021	Performed test fills on the CCR in the LAN Upper Ash Pond. Installed geotechnical monitoring instruments including settlement plates and vibrating wire piezometers in the test fills and underlying CCR.
October 2021	Installed four groundwater dewatering pilot test wells along the west side of the LAN Upper Ash Pond and completed a pump test to evaluate the design of a groundwater dewatering system for the closure of the LAN Upper Ash Pond.
October 2021	Pilot-tested in-situ stabilization of CCR using portland cement grout within the LAN Upper Ash Pond.
October - November 2021	Pilot-tested CCR dredging and geotextile tube dewatering of dredged materials at the LAN Upper Ash Pond.
November 2021 - February 2022	Incorporated preconstruction testing into LAN Upper Ash Pond closure design (ongoing effort).
January - February 2022	Developed Upper Ash Pond closure permit applications (ongoing effort).
February 2022	Completed evaluation of potential off-site general fill material for use in LAN Upper Ash Pond closure.
February 2022	Evaluated groundwater dewatering pump test discharge data (ongoing effort).
March 2022	Repaired the Upper Ash Pond West Berm Piezometer.
March 2022	The remaining bridge lift platform construction across the LAN Upper Ash Pond was completed.
May 2022	Ash pond closure contractor was mobilized.
May 2022	Preparation gravel placement and grading of contractor laydown area in the Closed Lower Pond area.
May - June 2022	The closure contractor dewatered the southern end of the Upper Ash Pond.
June - July 2022	Scour protection grading preparation and installation began in the LAN Upper Ash Pond - South Pond Closure Area. Drainage trenches developed and the placement of the 40-mil geomembrane.
June - July 2022	Hauled, placed, and conditioned some CCR from the LAN Upper Ash Pond up to the LAN Landfill.

**Table 1B. Timeline for Closure Related Work
Selection of Remedy
Lansing Generating Station / SCS Engineers Project #25220082.00**

Date	Activity
June - August 2022	Installed the In-Situ Stabilization (ISS) wall. Installed ISS wall through middle of bridge lift platform.
May - August 2022	Installed two dewatering wells and pumping begins at the west end of the LAN Upper Ash Pond for ISS Wall work.
May - August 2022	The closure contractor installed submersible pumps in two previously installed dewatering wells and began pumping at the west end of the LAN Upper Ash Pond to supply water for In-Situ Stabilization (ISS) wall construction.
August 2022	North Pond water level allowed to rise for dredging. Prior to late July, the water level was drawn down for ISS work.
August 2022	Dredged the Upper Ash Pond North Pond closure area and filling geotextile dewatering tubes in the prepared scour protection layer area in the South Pond Closure Area.
September 2022 - October 2022	Dredged the Upper Ash Pond North Pond closure area and filled geotextile dewatering tubes in the prepared scour protection layer area in the South Pond Closure Area. Hauled coal and soil impacted with coal from the Coal Yard to the South Pond Closure Area.
September 2022	Submitted a Temporary and Limited (T&L) Antidegradation request to the IDNR for the addition of the polymers/coagulant used in the dredging and geotube dewatering process on September 14, 2022. The IDNR issued the T&L Antidegradation approval on September 16, 2022.
November 2022	Excavated CCR from the Upper Ash Pond North Pond closure area and placed it in the South Pond Closure Area. Hauled coal and soil impacted with coal from the Coal Yard to the South Pond Closure Area.
November 2022	Completed and submitted an application to the Allamakee County Board of Health for drilling remaining temporary groundwater dewatering wells at the Upper Ash Pond. Permit coverage was granted on November 30, 2022.
November 2022	Submitted the state sanitary disposal project closure permit applications for the LAN Landfill and LAN Upper Ash Pond.
November 2022	Issued the annual progress report required by 40 CFR 257.103(f)(2)(x), Annual Progress Report – Site-Specific Alternative Deadline to Initiate Closure of CCR Surface Impoundments.
December 2022	All sluicing of CCR to the pond has permanently ended. The only remaining discharges to the LAN Upper Ash Pond are limited to freeze protection and runoff that includes landfill contact water.
December 2022	Received an updated state sanitary disposal project permit for the LAN Landfill incorporating the closure plan.
December 2022	Submitted a Joint Permit Application for Upper Ash Pond closure and decommissioning activities that may impact navigable waterways and the floodplain in the vicinity of the LAN facility.
December 2022	Coal-fired electrical generating activities ceased as of December 31, 2022. No significant CCR unit closure-related construction work was completed in December 2022.
January 2023	Completed updates to the Water Well Pollution Prevention Plan (WWPPP) to obtain INDR NPDES GP#6 coverage for temporary groundwater dewatering well construction. Temporary groundwater dewatering wells installed around the north half of the Upper Ash Pond.
January 2023	Prepared an Antidegradation Alternatives Analysis for temporary groundwater dewatering discharges to surface water.
February 2023	Published a public notice initiating the public review/comment period for the Antidegradation Alternatives Analysis for temporary groundwater dewatering discharges to surface water. Permit coverage by IDNR NPDES GP9 for these surface water discharges will be covered following the public review/comment period, development of a Dewatering Pollution Prevention Plan (DWPPP), and electronic Notice of Intent (eNOI).
February 2023	Submitted responses to agency review questions on the state sanitary disposal project closure permit application.
February 2023	Received approval of the state sanitary disposal project closure permit for the LAN Upper Ash Pond.

**Table 1B. Timeline for Closure Related Work
Selection of Remedy
Lansing Generating Station / SCS Engineers Project #25220082.00**

Date	Activity
February 2023	Submitted a request for and received a Temporary and Limited Degradation Approval for the use of a flocculant and acid during treatment and surface water discharges of water from the Upper Ash Pond during closure construction.
February 2023	Temporary groundwater dewatering wells installed around the north half of the Upper Ash Pond. Excavation, hauling, and placement of CCR from the northeast limits of the Upper Ash Pond to the South Pond Closure Area. Construction of a dewatering treatment system laydown pad with imported soil fill at the northeast limits of the Upper Ash Pond.
Activities Completed During the Current Semiannual Reporting Period	
March to April 2023	Operated groundwater dewatering wells and treatment system to remove surface water from the north half of the Upper Ash Pond.
April 2023	Removed elevated walkway and old outfall structure in the north half of the Upper Ash Pond.
April 2023	Received Iowa DNR Flood Plain Development Permit.
April to May 2023	Excavated CCR from the north half of the Upper Ash Pond and placed it in the South Pond Closure Area.
May 2023	Received Sovereign Lands Construction Permit from IDNR and Flood Plain Development Permit from Allamakee County.
May 2023 - August 2023	Placed and compacted imported general fill in the north half of the Upper Ash Pond.
May 2023 - August 2023	Excavated coal and coal impacted soils from the coal yard and placed in the Ash Landfill and South Pond Closure Area.
June 2023 - July 2023	Placed imported select clay cover layer on the Ash Landfill.
July 2023 - August 2023	Placed imported low permeability soil layer in South Pond Closure Area.
August 2023	Placed imported topsoil in coal yard and closure areas.
July - August 2023	Abandoned groundwater dewatering wells.
August 2023	Received Joint Permit Application Approval from USACE.

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**Table 2. CCR Rule Groundwater Samples Summary
Lansing Generating Station / SCS Engineers Project #25220082.00**

Sample Dates	Background Well	Downgradient Wells												
	MW-6	MW-301	MW-302	MW-302A	MW-303	MW-304	MW304A	MW-305	MW-306	MW-306A	MW-307	MW-307A	MW-308	MW-309
10/2/2019	A	A	A	NI	A	A	NI	A	A	NI	NI	NI	NI	NI
12/5/2019	--	--	--	NI	--	--	NI	--	Add.	NI	NI	NI	NI	NI
2/5/2020	--	--	--	--	--	--	--	--	Add.	--	NI	NI	NI	NI
5/20/2020	A	A	A	A	A	A	A	A	A	A	NI	NI	NI	NI
7/6/2020	--	--	--	A	--	--	A	--	--	A	NI	NI	NI	NI
8/18/2020	Add.	Add.	Add.	Add.	Add.	Add.	Add.	Add.	Add.	Add.	NI	NI	NI	NI
10/19-20/2020	A	A	A	A	A	A	A	A	A	A	NI	NI	NI	NI
2/23/2021	--	--	--	--	--	--	Add.	--	Add.	--	NI	NI	NI	NI
4/7-9/2021	A	A	A	A	A	A	A	A	A	A	NI	NI	NI	NI
7/12/2021	--	--	--	--	--	--	Add.	--	Add.	--	A	A	--	--
8/13/2021	--	--	--	--	--	--	--	--	--	--	A	A	--	--
10/25-27/2021	A	A	A	A	A	A	A	A	A	A	A	A	--	--
4/4-6/2022	A	A	A	A	A	A	A	A	A	A	A	A	WL	WL
10/17-19/2022	A	A	A	A	A	A	A	A	A	A	A	A	WL	WL
4/10-11/2023	A	A	A	A	DRY	A	A	A	A	A	A	A	WL	WL
Total Samples	9	9	9	9	8	9	11	9	13	9	6	6	N/A	N/A

Abbreviations:

A = Samples analyzed for assessment monitoring parameters
Add. = Additional sampling event for selected parameters

-- = Not Sampled
NI = Not Installed
AB = abandoned well

N/A= not applicable
WL = Water level measurement only

Notes:

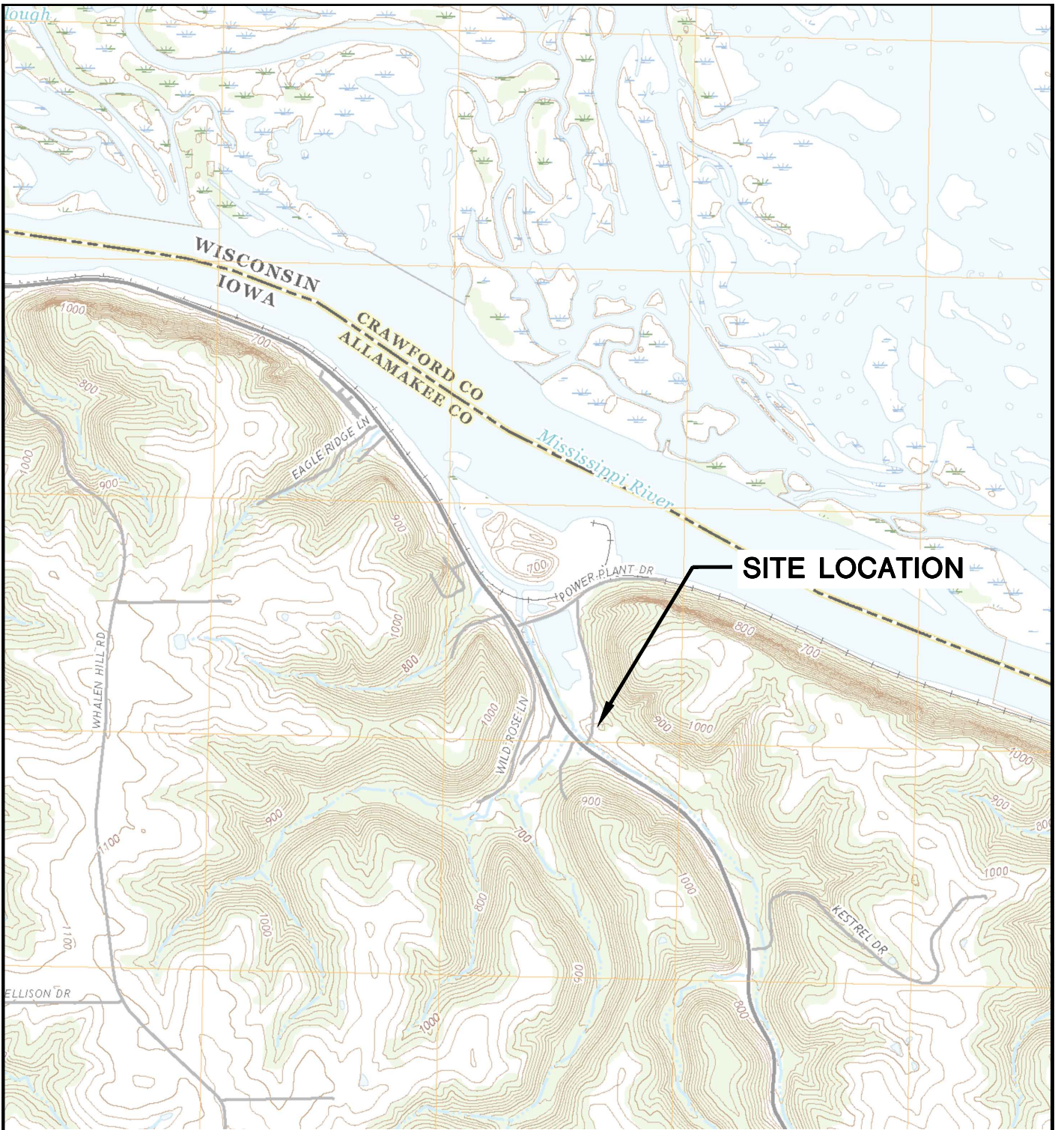
Monitoring wells MW-308 and MW309 were installed for horizontal groundwater flow and sample collection is not currently planned for these two wells.

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Checked by: RM Date: 8/29/2023

I:\25220082.00\Deliverables\2023 Semiannual - Remedy Selection\2023 September Semiannual Update\Tables\[Table 2_GW_Samples_Summary_Table_LAN.xlsx]GW Summary

Figures

- 1 Site Location Map
- 2 Site Plan and Monitoring Well Locations

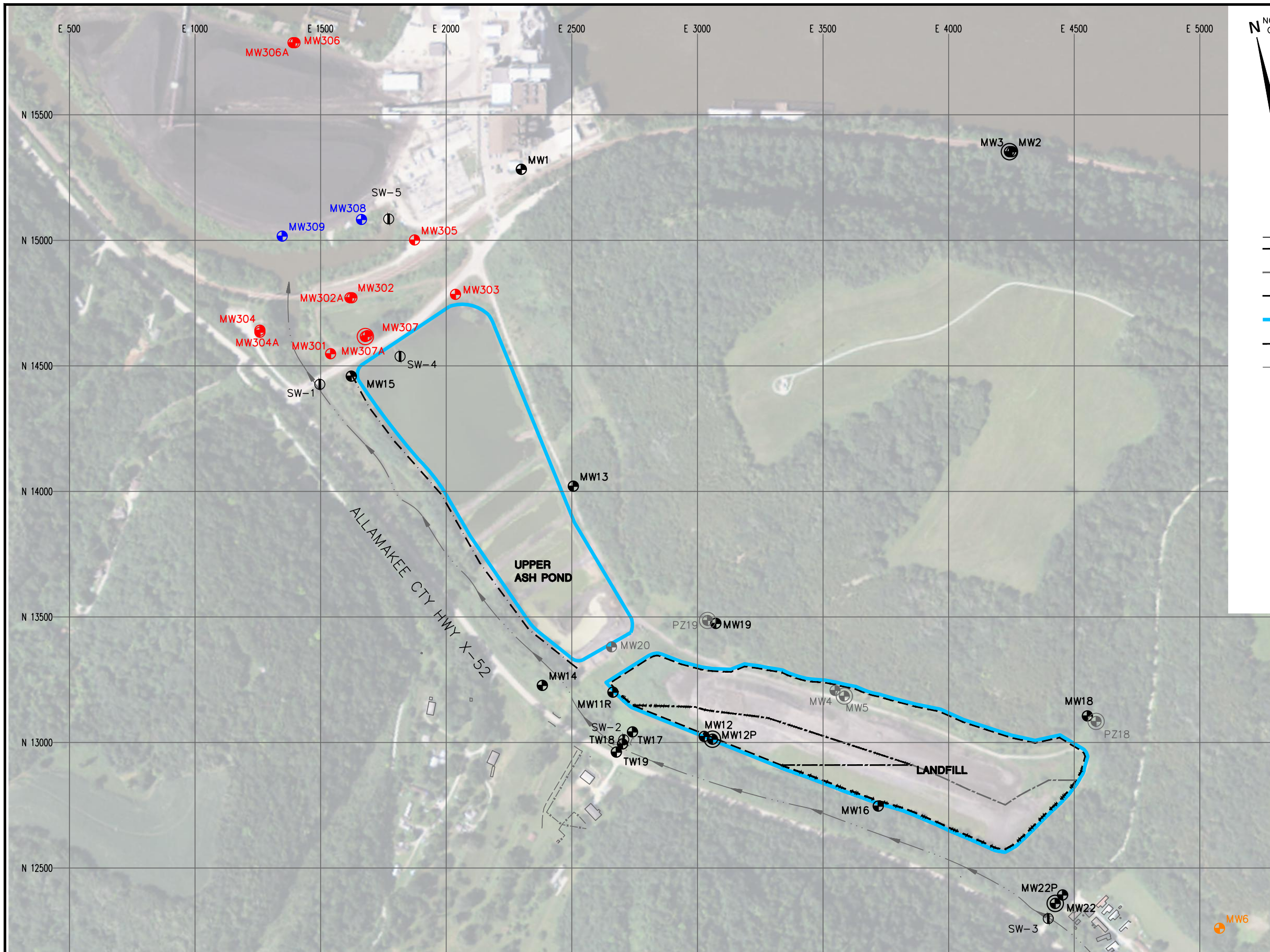


LANSING QUADRANGLE
 IOWA-ALLAMAKEE CO.
 7.5 MINUTE SERIES (TOPOGRAPHIC)
 2018
 SCALE: 1" = 2,000'



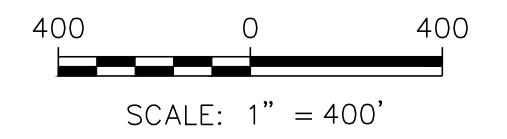
CLIENT	INTERSTATE POWER AND LIGHT 2320 POWER PLANT DRIVE LANSING, IA 52151-9733		SITE	ALLIANT ENERGY LANSING GENERATING STATION LANSING, IOWA		ENGINEER	SITE LOCATION MAP	
	PROJECT NO.	25219070.00		DRAWN BY:	BSS		SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE
DRAWN:	11/27/2019	CHECKED BY:	MDB	APPROVED BY:	TK 01/30/2020			
REVISED:	11/27/2019							

I:\25219070.00\Drawings\CCR 2019 Annual Report\Site Location Map.dwg, 1/30/2020 3:31:40 PM



LEGEND	
	APPROVED LIMITS OF WASTE
	LIMITS OF PHASE 1 FINAL COVER
	LIMITS OF PHASE 2 FINAL COVER
	CCR LIMITS
	SLURRY WALL
	EXISTING STREAM
	SW-1 EXISTING STAFF GAUGE
	MW17 EXISTING MONITORING WELL
	MW12P EXISTING PIEZOMETER
	MW4 ABANDONED MONITORING WELL
	MW5 ABANDONED PIEZOMETER
	MW301 CCR MONITORING WELL
	MW6 CCR BACKGROUND MONITORING WELL
	MW308 WATER LEVEL WELL (NOT PART OF CCR RULE MONITORING SYSTEM)

- NOTES:
1. MONITORING WELL LOCATIONS AND CCR UNIT LIMITS ARE APPROXIMATE.
 2. MONITORING WELL MW20 WAS ABANDONED ON MAY 5, 2022..



PROJECT NO. 25222070.00	DRAWN BY: KP	ENGINEER	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	CLIENT	INTERSTATE POWER AND LIGHT 2320 POWER PLANT DRIVE LANSING, IA 52151-9733	SITE	ALLIANT ENERGY LANSING POWER STATION LANSING, IOWA	SITE PLAN AND MONITORING WELL LOCATIONS	FIGURE
DRAWN: 05/26/2021	CHECKED BY: JR								2
REVISED: 01/27/2023	APPROVED BY: TK 01/30/2023								

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