Semiannual Progress Report Selection of Remedy – M.L. Kapp Generating Station

M.L. Kapp Generating Station
Clinton, Iowa

Prepared for:

Alliant Energy

SCS ENGINEERS

25221050.00 | March 10, 2022

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1.0 INTRODUCTION AND PURPOSE

The Semiannual Progress Report for remedy selection at the Interstate Power and Light Company (IPL) former M.L. Kapp Generating Station (KAP) was prepared to comply with U.S. Environmental Protection Agency (USEPA) 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 KAP Main Ash Pond CCR unit is a closed inactive surface impoundment. The KAP Main Ash Pond was closed and capped in 2017. A Notification of Completion of Closure pursuant to 40 CFR 257.102(d) was issued by Alliant Energy on January 17, 2018. The KAP generating station was decommissioned and then demolished in 2020.

Post-closure groundwater monitoring concentrations of molybdenum were found at a statistically significant level (SSL) above the Groundwater Protection Standard (GPS) in groundwater samples from downgradient monitoring wells MW-302, MW-304, and MW-305. In response, the Assessment of Corrective Measures (ACM) for the closed and capped Main Ash Pond was completed on March 11, 2021.

This Semiannual Progress Report summarizes data collected and remedy evaluation progress made since the ACM was completed in March 2021, and outlines planned future activities to complete the selection of remedy process. This is the second semiannual progress report, covering the 6-month period of September 2021 through February 2022.

1.2 SITE INFORMATION AND MAPS

The former KAP generating station is located along the west bank of the Mississippi River, in the city of Clinton, in Clinton County, Iowa (**Figure 1**). The KAP Main Ash Pond is located to the northwest of the former generating station at 3301 E. Highway 67 S, Clinton, Iowa. New monitoring wells were installed downgradient of the closed impoundment and northwest of the site, as seen in **Figure 1**. A map showing the former KAP generating station, the Main Ash Pond CCR unit, and both background (or upgradient) and downgradient monitoring wells with identification numbers for the CCR groundwater monitoring program is provided as **Figures 2** and **3**.

Groundwater flow at the site is generally to the east, and water levels fluctuate seasonally due to the proximity to the nearby creek and the Mississippi River. Depth to groundwater, as measured in the site monitoring wells, varies from 6 to 22 feet below ground surface due to topographic variation across the facility and seasonal variations in water levels.

2.0 SUMMARY OF WORK COMPLETED

Work completed to support remedy selection for the KAP CCR Unit is summarized in **Table 1**. Activities completed within the 6-month period covered by this semiannual report are discussed in more detail below.

2.1 MONITORING NETWORK CHANGES

Monitoring well MW-310, was installed in September 2021. The supplemental upgradient well was installed to provide additional background information on groundwater quality and flow direction. The monitoring well location is shown on **Figures 1** and **2**.

Two additional downgradient groundwater monitoring wells, MW-311 and MW-311A, were installed in November 2021. Monitoring wells MW-311 and MW-311A were installed to provide information on groundwater quality and flow directions, and to characterize the nature and extent of groundwater impacts. The monitoring well locations are shown on **Figures 1** and **3**.

2.2 GROUNDWATER MONITORING

Groundwater samples were collected during October and December 2021, and February 2022. The four events included the following:

- An initial sampling event was completed in early October for MW-310, installed in September 2021.
- The October monitoring event was part of the routine semiannual assessment monitoring program. The wells sampled included the wells in the original monitoring program (MW 301 through MW-306); delineation wells MW-304A, MW-308, and MW-309; and background monitoring wells MW-307 and MW-310.
- The December monitoring event was an additional event to collect samples from the newly installed downgradient monitoring wells MW-311 and MW-311A, installed in November 2021.
- The February 2022 monitoring event included samples from monitoring wells MW-310, MW-311, and MW-311A.

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 2021 Annual Groundwater Monitoring and Corrective Action Report.

Statistical evaluation of groundwater quality data during the period covered by this update included comparison of Appendix IV parameter results to GPSs. In accordance with the Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at Resource Conservation and Recovery Act (RCRA) Facilities (USEPA, 2009), the evaluation of whether a parameter has been detected at an SSL exceeding the GPS is based on comparison of the lower confidence limit (LCL) for the mean, calculated from the assessment monitoring results, to the GPS. Based on the October 2021 monitoring results, the parameters at an SSL above the GPS include lithium at MW-306 and molybdenum at MW-301, MW-302, MW-304, and MW-305. The observed results are consistent with previous SSL determinations.

Statistical evaluation of groundwater quality data during the period covered by this update also included comparison of Appendix III and Appendix IV parameter results to background levels using a prediction limit approach. As part of the evaluation of the October 2021 monitoring results, the background data set for the upper prediction limit (UPL) calculation was updated to include data

from new background monitoring well MW-307, collected through April 2021 (minimum of four rounds for each parameter). The UPLs will be updated again following the completion of eight rounds of background monitoring for well MW-307. UPLs were previously calculated based on the on-site background well MW-306, but this well is now evaluated as a compliance well.

Supplemental background well MW-310 is currently being evaluated for comparison purposes and is not incorporated into the statistical evaluation.

2.4 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 March 2021 ACM. Table 3 summarizes the assessment completed for the ACM Addendum. No updates or changes to the assessment have been made based on additional information obtained since the issue of the ACM Addendum.

IPL has and continues to develop and evaluate preliminary remedy designs for the closed and capped Main Ash Pond at KAP. Groundwater sampling and analysis have been ongoing and continue for the development and evaluation of preliminary remedy designs.

Updates to the quantitative assessment discussed in the ACM will be completed in the future based on updates to the conceptual site model, delineation of the nature and extent of impacts, and collection of additional data relevant to remedy selection.

3.0 PLANNED ACTIVITIES

Planned activities related to the remedy selection process include the following:

- Continue semiannual assessment monitoring for the existing monitoring well network and new monitoring wells.
- Permit, install, and sample an off-site monitoring well to be located to the southwest of the site, within the Highway 67 right-of-way.
- Evaluate the potential need for additional on-site and off-site monitoring wells to continue to delineate the nature and extent of GPS exceedances in groundwater. If additional monitoring wells are required, obtain property access agreement and any necessary floodplain, right-of-way, and well permits prior to installing the additional monitoring wells.
- Continue to evaluate monitored natural attenuation (MNA) feasibility, including additional evaluation of groundwater flow and groundwater quality.
- Update the conceptual site model based on findings of nature and extent investigation.
- Continue evaluation of remedial options.
- Conduct public meeting (40 CFR 257.96(e)).

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Tables

Table 1. Timeline for Completed Work - Assessment of Corrective Measures
M. L. Kapp Generating Station / SCS Engineers Project #25221050.00

Date	Activity
November 2020 - September 2021	Negotiated access agreement for future off-site monitoring well nest on private property location.
February 2021	Installed additional piezometer MW-304A to investigate vertical gradient flow and groundwater quality.
February 2021	Conducted a supplemental groundwater sampling event of assessment well MW-304A and new background monitoring well MW-307.
March 2021	Completed Assessment of Corrective Measures (ACM).
April 2021	Installed off-site monitoring wells MW-308 and MW-309 to investigate downgradient groundwater flow and quality.
May 2021	Completed the well documentation report for piezometer MW-304A.
May - August 2021	Evaluated future Alliant Clinton-Perrin Substation property as a location for a future off-site bedrock monitoring well location.
June 2021	Conducted a supplemental groundwater sampling event for the two newly installed monitoring wells (MW-308 and MW-309) and the new background monitoring well (MW-307).
June 2021	Completed statistical evaluation and results letter for February 2021 groundwater monitoring event.
June 2021	Completed the 2020 Annual Grounwater Monitoring and Corrective Action Report.
July 2021	Completed the well documentation report for monitoring wells MW-308 and MW-309.
July 2021	Conducted a supplemental groundwater sampling event for the new background monitoring well MW-307.
August 2021	Completed Statistical Evaluation and result letter for the April 2021 groundwater monitoring event.
August 2021	Completed groundwater monitoring system certification update.
September 2021	Installed off-site monitoring well MW-310 to investigate upgradient groundwater flow and quality.
October 2021	Conducted an initial groundwater sampling event for the new background monitoring well, MW-310.
November 2021	Performed property boundary survey at the American Water off-site property to confirm the proper location of proposed monitoring wells MW-311 and MW-311A.
December 2021	Installed off-site and downgradient monitoring wells MW-311 and MW-311A to investigate downggradient groundwater flow and quality.
December 2021	Conducted an initial groundwater sampling event for the new monitoring wells, MW-311 and MW-311A.
January 2022 - February 2022	Prepared the 2021 Annual Grounwater Monitoring and Corrective Action Report.
January 2022	Performed hydraulic conductivity tests on monitoring wells MW-307, MW-308, MW-311, and MW-311A.
January 2022	Provided additional information to the Iowa Department of Transporation related to the right-of-way permit application for a proposed montoring well installation to be located southwest of the site and adjacent to Highway 67.
February 2022	Iowa Department of Transportation approved right-of-way permit for proposed monitoring well along Highway 67 to provide additional nature and extent information.
February 2022	Prepared bedrock contour map needed to select location for potential additional background bedrock monitoring well
February 2022	Measured groundwater elevations at all on-site and off-site monitoring wells for additional groundwater elevation and flow mapping.
February 2022	Conducted additional sampling event at monitoring wells MW-310, MW-311, and MW-311A.

Created by: NDK Date: 8/4/2021
Last revision by: NDK Date: 2/27/2022
Checked by: TK Date: 2/27/2022

\\Mad-fs01\data\Projects\25221050.00\Deliverables\2022 KAP Semiannual - ACM\2022 March Semiannual Update\Tables\[Table 1_Timeline_ACM_KAP.xlsx]Timeline

Table 2. Groundwater Sample Summary
M.L. Kapp Generating Station / SCS Engineers Project #25221050.00

Sample Dates	Compliance Wells						Delineation Wells					Background Wells	
	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-304A	MW-308	MW-309	MW-311	MW-311A	MW-307	MW-310
4/5/2021	A	A	A	A	A	A	A	NI	NI	NI	NI	A	NI
6/17/2021	--	--	--	--	--	--	--	A	A	NI	NI	A	NI
7/22/2021	--	--	--	--	--	--	--	--	--	NI	NI	A	NI
10/5/2021	--	--	--	--	--	--	--	--	--	NI	NI	--	A
10/18-19/2021	A	A	A	A	A	A	A	A	A	NI	NI	A	A
12/29/2021	--	--	--	--	--	--	--	--	--	A	A	--	--
2/21/2022	--	--	--	--	--	--	--	--	--	A	A	--	A
Total Samples	2	2	2	2	2	2	2	2	2	1	1	4	2

Abbreviations:
A = Assessment Monitoring Program NI = Not Installed
-- = Not Applicable

Created by: RM Date: 2/1/2021
Last revision by: NDK Date: 2/11/2022
Checked by: TK Date: 2/27/2022

Table 3. Preliminary Evaluation of Corrective Measure Alternatives
M.L. Kapp Generating Station / SCS Engineers Project #25221050.00

	Alternative #1 No Further Action	Alternative #2 Cover Upgrade with Monitored Natural Attenuation (MNA)	Alternative #3 Gradient Control	Alternative #4 In-Situ Treatment with Chemical Amendment	Alternative #5 Groundwater Management with Barrier Wall	Alternative #6 Excavate and Dispose Off-Site
CORRECTIVE ACTION ASSESSMENT - 40 CFR 257.97(b)						
257.97(b)(1) Is remedy protective of human health and the environment?	Yes	Yes	Yes	Yes	Yes	Yes
257.97(b)(2) Can the remedy attain the groundwater protection standard?	Yes	Yes	Yes	Yes	Yes	Yes
257.97(b)(3) Can the remedy control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents in appendix IV to this part into the environment?	Yes	Yes	Yes	Yes	Yes	Yes
257.97(b)(4) Can the remedy remove from the environment as much of the contaminated material that was released from the CCR unit as is feasible?	Not Applicable - No release of CCR	Not Applicable - No release of CCR	Not Applicable - No release of CCR	Not Applicable - No release of CCR	Not Applicable - No release of CCR	Not Applicable - No release of CCR
257.97(b)(5) Can the remedy comply with standards for management of wastes as specified in §257.98(d)?	Not Applicable	Yes	Yes	Yes	Yes	Yes
LONG- AND SHORT-TERM EFFECTIVENESS - 40 CFR 257.97(c)(1)						
257.97(c)(1)(i) Magnitude of reduction of existing risks	Existing risk reduced by achieving GPS	Existing risk reduced by achieving GPS in a shorter timeframe than Alternative #1 if MNA is active.	Same as Alternative #2. Long-term risk may be reduced by treatment of collected groundwater. Groundwater extraction and treatment presents an additional risk and potential exposure pathways via surface release or disruption of treatment processes.	Similar to Alternative #2. Long-term risk may be reduced with additional source control and in-situ stabilization/fixation of CCR that may be in contact with groundwater.	Similar to Alternative #3. Long-term risk may be reduced with additional containment offered by barrier wall.	Material removed from the site eliminating existing risks from new releases at the Site.
257.97(c)(1)(ii) Magnitude of residual risks in terms of likelihood of further releases due to CCR remaining following implementation of a remedy	No reduction of existing risk for additional releases Residual risk is limited for all alternatives due to limited extent of impacts and lack of receptors	Potential reduction in release risk due to the reduced permeability of the final cover. Same as Alternative #1 with respect to CCR in potential contact with groundwater. However, limited as no additional overall risk reduction is provided due to lack of current/anticipated future receptors for groundwater impacts	Potential reduction in release risk by way of the ability to respond to potential future/ongoing releases from CCR that might be in contact with groundwater following closure. However, limited to no overall risk reduction is provided due to lack of current/anticipated future receptors for groundwater impacts.	Potential reduction in release risk by way of chemical / physical alteration of the source of impacts. However, limited to no overall risk reduction is provided due to lack of current/anticipated future receptors for groundwater impacts.	Residual risk of source material in contact with groundwater is reduced by the containment of groundwater impacts provided by barrier walls; However, limited to no overall risk reduction is provided due to lack of current/anticipated future receptors for groundwater impacts.	Same as Alternative #1 with further reduction in release risk due to removal of impounded CCR from site However, limited as no additional overall risk reduction is provided due to lack of current/anticipated future receptors for groundwater impacts
257.97(c)(1)(iii) The type and degree of long-term management required, including monitoring, operation, and maintenance	30-year post-closure groundwater monitoring Groundwater monitoring network maintenance and as-needed repair/replacement Final cover maintenance (e.g., mowing and as-needed repair) Periodic final cover inspections Additional corrective action as required based on post-closure groundwater monitoring	Same as Alternative #1 with increased monitoring for MNA parameters	Same as Alternative #1 with increased monitoring for MNA parameters and monitoring, operation, and maintenance of the gradient control system and any discharge-related water treatment. If pump-and-treat additional effort for groundwater pump operation and maintenance (O&M), groundwater treatment system O&M, and treatment system discharge monitoring/reporting.	Same as Alternative #2	Same as Alternative #3 with additional monitoring of wall performance.	No on-site long-term management required Limited on-site post-closure groundwater monitoring until GPSs are achieved Receiving disposal facility will have same/similar long-term monitoring, operation, and maintenance requirements as Alternative #1

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LONG- AND SHORT-TERM EFFECTIVENESS - 40 CFR 257.97(c)(1) (continued)						
257.97(c)(1)(iv) Short-term risks - Implementation						
Excavation	None	Increased risk over Alternative #1 due to general construction activities that are not anticipated to expose CCR	Similar to Alternative #1 with some increased construction risk due to drilling, trenching, and excavation for groundwater pumping and treatment system construction.	Similar to Alternative #1 with some increased potential risk due to exposure during the application of the chemical amendment.	Similar to Alternative #1 with some increased construction risk due to excavation or installation of the barrier wall.	Increased risk to environment over Alternative #2 due to CCR excavation volumes (~580K cy) required for removal and off-site re-disposal
Transportation	None	Increased risk over Alternative #1 from construction traffic due to final cover disturbance and import of cover upgrade materials	Similar to Alternative #1 with increased risk from importing groundwater pumping and treatment system materials.	Similar to Alternative #1 with increased risk from importing chemical material for stabilization/treatment.	Similar to Alternative #1, with increased risk from importing barrier wall system materials.	Highest level of community and environmental risk due to CCR volume export (~580K cy)
Re-Disposal	None	None	Same as Alternative #3	Similar to Alternative #1 with some increased potential risk due to exposure during the application of the chemical amendment.	Similar to Alternative #3	Increased risk to community and environment due to re-disposal of large CCR volume (~580K cy) at another facility Re-disposal risks are managed by the receiving disposal facility
257.97(c)(1)(v) Time until full protection is achieved	To be evaluated further during remedy selection Closure and capping was completed in 2018 Groundwater protection timeframe to reach GPS potentially 5 to 10 years following closure construction, achievable within 30-year post-closure monitoring period	Similar to Alternative #1 with some potential for decrease in time to reach GPS due to reduced cover permeability. Increased understanding of timeframe based on MNA monitoring results	Similar to Alternative #2 with potential for decrease in time to reach GPS due to groundwater removal	Similar to Alternative #2. Potential for reduction in time to reach GPS due to chemical/physical stability of CCR.	Similar to Alternative #2. Potential decrease in time to reach GPS upon implementation of barrier wall.	Similar to Alternative #1 Potential for increase in time to reach GPS due to significant source disturbance during construction Potential decrease in time to reach GPS due to CCR source removal
257.97(c)(1)(vi) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, re-disposal, or containment	No change in potential exposure	Same as Alternative #1	Similar to Alternative #1 with potential for secondary impacts from releases of extracted groundwater or disruption in treatment.	Same as Alternative #1	Same as Alternative #1	No potential for on-site exposure to remaining waste since no waste remains on site Risk of potential exposure is transferred to receiving disposal facility and is likely similar to Alternative #1
257.97(c)(1)(vii) Long-term reliability of the engineering and institutional controls	Long-term reliability of existing cap is good Significant industry experience with methods/controls Capping is common practice/industry standard for closure in place for remediation and solid waste management Deed notation in place for closure with CCR left in place	Long-term reliability of enhanced cap is good Significant industry experience with methods/controls Capping is common practice/industry standard for closure in place for remediation and solid waste management Deed notation in place for closure with CCR left in place	Similar to Alternatives 1 and 2. Depending on the gradient control method selected, the long-term reliability can be good There is significant industry experience with some potential gradient control methods used in remediation of groundwater impacts. Remedy relies upon active equipment that will require additional operations and maintenance.	Same as Alternative #1.	Same as Alternative #1. Remedy relies on continued hydraulic conductivity of the selected barrier. Breaches or short circuiting can develop and must be monitored.	Success of remedy at KAP does not rely on long-term reliability of engineering or institutional controls Overall success relies on reliability of the engineering and institutional controls at the receiving facility
257.97(c)(1)(viii) Potential need for replacement of the remedy	Limited potential need for replacement of original cap placed in 2018 if maintained.	Same as Alternative #1	Similar to Alternative #1, with reduced potential of remedy replacement, but added expectation for pump, conveyance system and treatment system replacement.	Similar to Alternative #1, with further reduction in potential need for remedy enhancement due to stabilized groundwater impacts.	Similar to Alternative #1, with reduced potential of remedy replacement, but added expectation for potential replenishment of consumptive barrier product.	No potential need for remedy replacement

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SOURCE CONTROL TO MITIGATE FUTURE RELEASES - 40 CFR 257.97(c)(2)						
257.97(c)(2)(i) The extent to which containment practices will reduce further releases	Cap installed in 2018 will reduce further releases by minimizing infiltration through CCR. CCR remains in contact with Groundwater.	Same as Alternative #1 with possible reduction in further release risk due to lower cap permeability/ reduced infiltration through CCR	Similar to Alternative #1, with reduction in the mobility of a release, or maintain within the site boundary.	Similar to Alternative #1 with further reduction due to lower mobility of contaminants in residual source material as a result of chemical amendment.	Similar to Alternative #1 with the added ability to contain groundwater impacts if MNA mechanisms are not active or site attenuation capacity is not adequate.	Removal of CCR prevents further releases at KAP Receiving disposal site risk similar to Alternative #2
257.97(c)(2)(ii) The extent to which treatment technologies may be used	Alternative does not rely on treatment technologies	Alternative does not rely on treatment technologies for source control	Alternative does not rely on treatment technologies for source control. With pump-and-treat, this alternative relies on conventional pump and treat remediation.	Alternative relies on the identification and availability of a suitable chemical amendment. Implementation of and contact with physical/chemical stabilizing agent will require specialized field implementation methods and health and safety measures.	Alternative relies on the identification and availability of a suitable barrier wall technology (e.g., permeable reactive barrier material or slurry wall). Implementation of and contact with barrier wall materials will require specialized field implementation methods and health and safety measures.	Alternative does not rely on treatment technologies for source control
IMPLEMENTATION - 40 CFR 257.97(c)(3)						
257.97(c)(3)(i) Degree of difficulty associated with constructing the technology	No additional construction involved.	Low complexity construction Moderate degree of design and logistical complexity to complete cap upgrade	Moderate complexity construction High degree of logistical complexity due to off-site property owner access. Moderate degree of logistical complexity; Moderate to low level of dewatering effort - dewatering required for material excavation/placement and capping. Moderate complexity construction for the installation of extraction wells and conveyance to a site-specific groundwater treatment plant.	Moderate complexity construction due to the equipment required to apply the selected amendment; requirements to ensure consistent contact and dosing of amendment; Medium degree of logistical complexity involving the import of specialty chemicals;	High complexity construction; Barrier walls require specialty installation equipment and knowledge. Highly specialized and experience contractors required to achieve proper installation. Moderate degree of logistical complexity; Moderate to low level of dewatering effort - dewatering required for material excavation/placement.	Low complexity construction High degree of logistical complexity including the excavation and off-site transport of ~580K cy of CCR and permitting/development of off-site disposal facility airspace Moderate to high level of dewatering effort - dewatering required for excavation of full CCR volume
257.97(c)(3)(ii) Expected operational reliability of the technologies	Not Applicable	High reliability based on historic use of capping as corrective measure	Operational reliability depends on method of gradient control required/selected, the level of extracted groundwater treatment required, and the location of groundwater treatment. However, success of this remedy relies on the successful operation of a site-specific groundwater treatment plant. Overall expected reliability is good based on industry experience.	Similar to Alternative #2; however, success at KAP relies on the successful application of specialty chemicals.	Similar to Alternative #3; however, success this remedy relies on continued hydraulic conductivity of the selected barrier. Breaches or short circuiting can develop and must be monitored.	Success at KAP does not rely on operational reliability of technologies Overall success relies on off-site disposal facility, which is likely same/similar to Alternative #2
257.97(c)(3)(iii) Need to coordinate with and obtain necessary approvals and permits from other agencies	No further approvals or permits required	Need is low in comparison to other alternatives; State Closure Permit amendment likely required; State and local erosion control/construction stormwater management permits required	Need is high in comparison to other alternatives State Closure Permit amendment likely required Approval of downgradient site owner required Approval of facility receiving gradient control discharge for treatment required, or agency approval to construct the necessary treatment facility is required. Well permitting for extraction well installation; NPDES Permit for groundwater treatment and discharge; State and local erosion control/construction stormwater management permits required; Federal/State/Local Floodplain permitting likely required.	Need is moderate in comparison to other alternatives; Underground Injection Control Permit may be required if chemical materials placed within groundwater. State and local erosion control/construction stormwater management permits required; Federal/State/Local Floodplain permitting likely required.	Need is moderate in comparison to other alternatives State Closure Permit required; Well permitting for barrier wall monitoring; Federal/State/Local Floodplain permitting required; State and local erosion control/construction stormwater management permits required	Need is highest in comparison to other alternatives State Closure Permit amendment likely required Approval of off-site disposal site owner required May require State solid waste comprehensive planning approval Local road use permits likely required
257.97(c)(3)(iv) Availability of necessary equipment and specialists	Not Applicable	Low level of demand for cap construction material	Moderate level of demand expected Level of demand may vary based on method of gradient control selected. A site-specific, trained employee will be required to operate the groundwater treatment system.	Specialized mixing equipment likely required to apply chemical amendment and achieve required dosing.	Similar to Alternative #2; Availability of the necessary specialized equipment and extensive experience required for barrier installation is potentially low or in high demand.	Availability of necessary equipment to develop necessary off-site disposal facility airspace and transport ~580K cy of CCR to new disposal facility will be a limiting factor in the schedule for executing this alternative No liner or cover material demands for on-site implementation of remedy
257.97(c)(3)(v) Available capacity and location of needed treatment, storage, and disposal services	Not Applicable	Not Applicable	There is no on-site capacity to treat gradient control system discharge If required, on-site capacity will need to be developed Off-site capacity to treat gradient control system discharge may exist, but ability/willingness to accept discharge is currently unknown	Capacity and location of treatment, storage, and disposal services is unlikely to be a factor for this alternative	Capacity and location of treatment, storage, and disposal services is unlikely to be a factor for this alternative	Off-site disposal capacity, facility logistical capacity, or the time required to develop the necessary off-site disposal and logistical capacity is a significant limiting factor
COMMUNITY ACCEPTANCE - 40 CFR 257.97(c)(4)						
257.97(c)(4) The degree to which community concerns are addressed by a potential remedy (Anticipated)	To be determined based on input obtained through public meetings/outreach to be completed	To be determined based on input obtained through public meetings/outreach to be completed	To be determined based on input obtained through public meetings/outreach to be completed	To be determined based on input obtained through public meetings/outreach to be completed	To be determined based on input obtained through public meetings/outreach to be completed	To be determined based on input obtained through public meetings/outreach to be completed

Created by: SK Date: 2/1/2021
Last revision by: SK Date: 3/4/2021
Checked by: EJN Date: 2/25/2021

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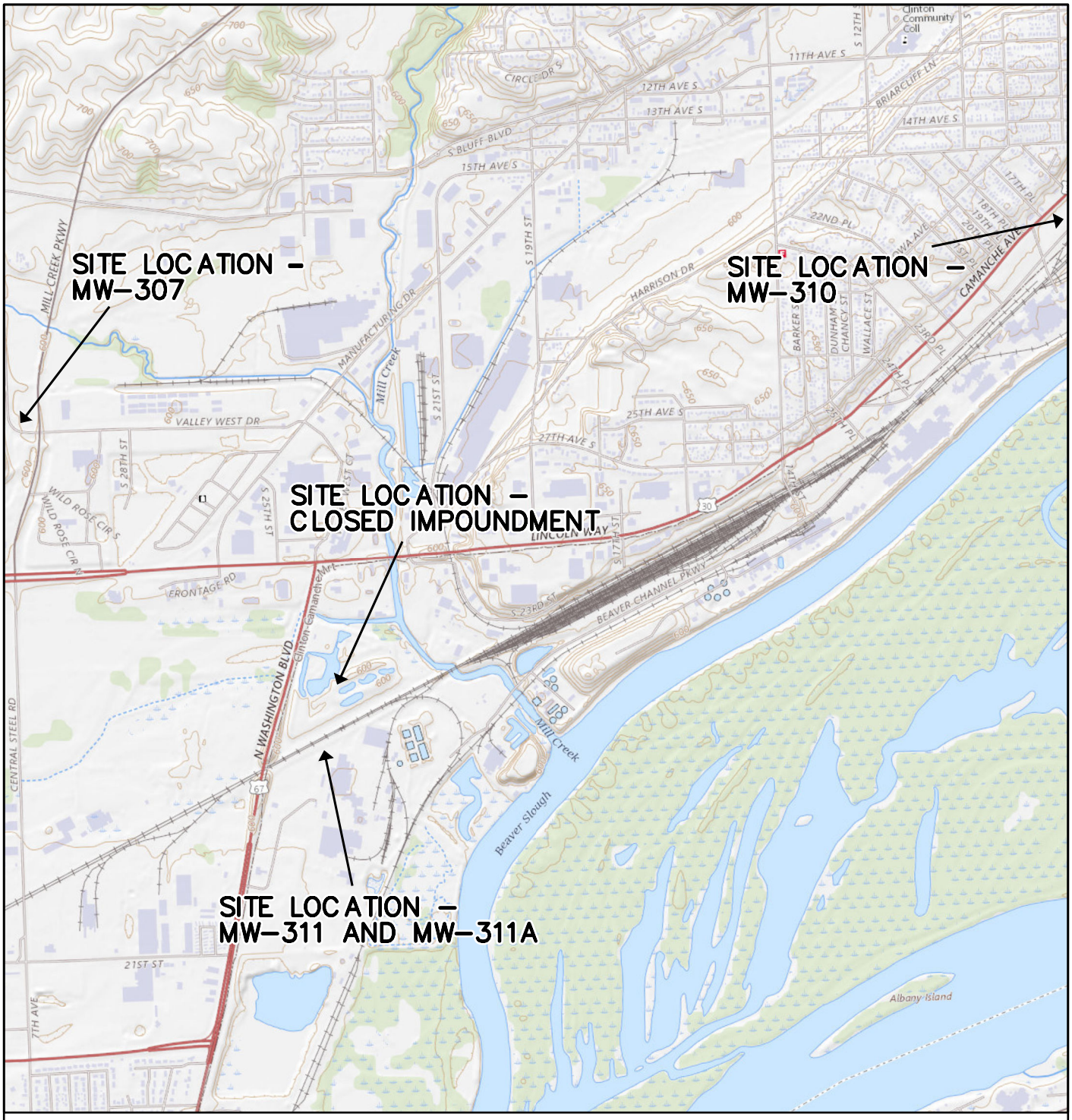
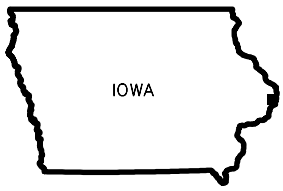
Figures





USGS THE NATIONAL MAP
AUGUST 2021

2,000 0 2,000 '

SCALE: 1" = 2,000'

N

CLIENT	ALLIANT ENERGY ML–KAPP GENERATING STATION 2001 BEAVER CHANNEL PKWY CLINTON, IA 52732	SITE	M.L. KAPP GENERATING STATION 3301 HIGHWAY 67 S CLINTON, IA 52732	SITE LOCATION MAP	
PROJECT NO.	25220117.00	DRAWN BY:	AA	ENGINEER	SCS ENGINEERS 2830 DAIRY DRIVE, MADISON, WI 53718–6751 PHONE: (608) 224–2830
DRAWN:	02/08/2022	CHECKED BY:	MDB		FIGURE 1
REVISED:	03/09/2022	APPROVED BY:	TK 3/9/2022		

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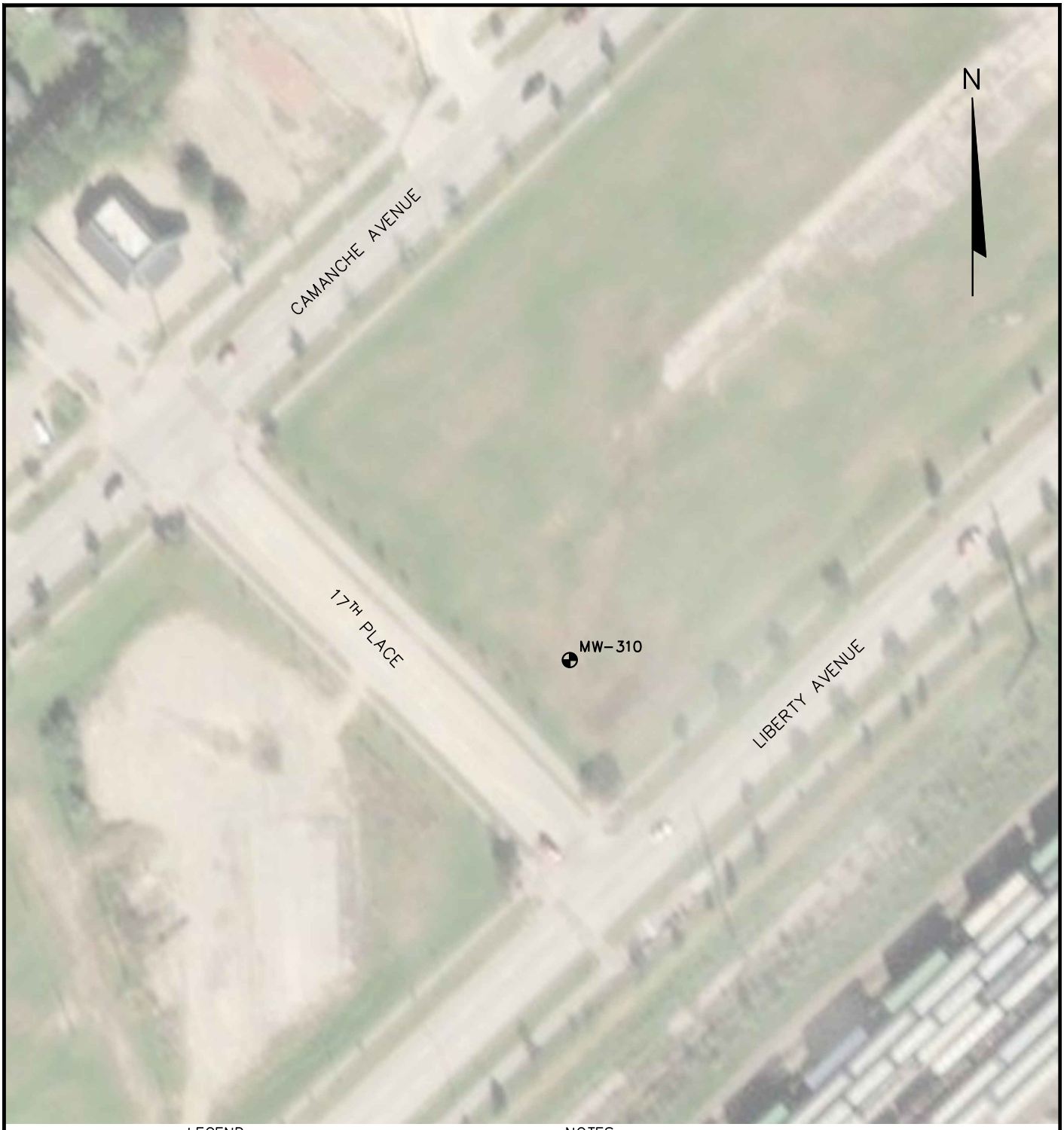


LEGEND

MONITORING WELL

NOTES

1. 2019 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY.

100 0 100

SCALE: 1" = 100'

CLIENT	INTERSTATE POWER AND LIGHT 2320 POWER PLANT DRIVE LANSING, IA 52151-9733	SITE	ALLIANT ENERGY 2401 S 30TH STREET CLINTON, IOWA

MONITORING WELL MW-310
LOCATION MAP

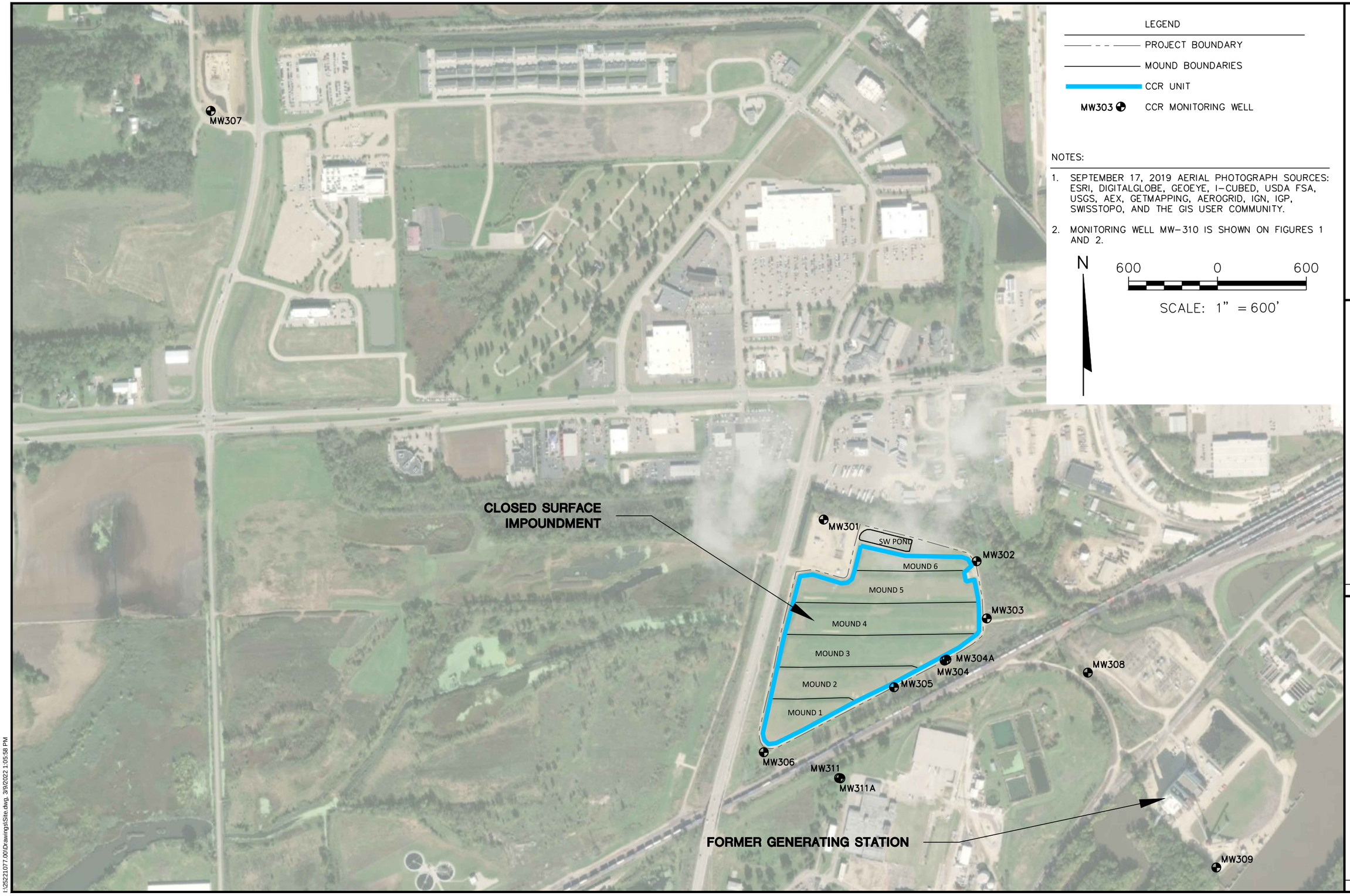
PROJECT NO.	25220117.00	DRAWN BY:	KP
DRAWN:	12/27/2021	CHECKED BY:	MDB
REVISED:	12/27/2021	APPROVED BY:	TK 03/09/2022

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

FIGURE
2

I:\25220117.00\Drawings\Monitoring Well Location Map.dwg, 3/9/2022 1:00:13 PM



LEGEND

- PROJECT BOUNDARY
- MOUND BOUNDARIES
- CCR UNIT
- MW303 CCR MONITORING WELL

NOTES:

1. SEPTEMBER 17, 2019 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY.
2. MONITORING WELL MW-310 IS SHOWN ON FIGURES 1 AND 2.

N

600 0 600

SCALE: 1" = 600'

MONITORING WELL LOCATION MAP

FIGURE 3

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

ENGINEER

SITE
M.L. KAPP GENERATING STATION
3301 HIGHWAY 67 S, CLINTON, IA 52732

CLIENT
ALLIANT ENERGY
ALLIANT ENERGY
M.L. KAPP GENERATING STATION
2001 BEAVER CHANNEL PKWY, CLINTON, IA 52732

PROJECT NO.	25221077.00
DRAWN:	09/04/2020
REVISED:	02/08/2022
DRAWN BY:	KP/ZTW
CHECKED BY:	NK
APPROVED BY:	TJK 03/09/22

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