

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 | September 12, 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 semiannual progress report covers the 6-month period of March 2022 through August 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 on **Figure 1**. Maps showing the former KAP generating station, the KAP Main Ash Pond, and both background (or upgradient) and downgradient monitoring wells with identification numbers for the CCR groundwater monitoring program are 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 Main Ash Pond 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

There were no changes to the KAP monitoring well network between March 2022 and August 2022. The monitoring well locations are shown on **Figures 2** and **3**.

Access agreements are being pursued to install delineation monitoring wells on two downgradient properties (**Attachment A**). The ongoing attempts to negotiate access agreements with off-site property owners are documented in **Table 1**.

An access agreement has been executed with the City of Clinton for an additional background well on the City wastewater treatment property. Properties not owned by IPL where offsite wells are targeted, are shown on the map provided in **Attachment A**.

2.2 GROUNDWATER MONITORING

Since the March 2022 semiannual update, groundwater samples were collected during two events in April and August 2022. The events included the following:

- The April 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; MW-311, MW-311A, and background monitoring wells MW-307 and MW-310.
- The August monitoring event was a quarterly supplemental monitoring event for selected parameters. The wells sampled included 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 2022 Annual Groundwater Monitoring and Corrective Action Report. Based on the April 2022 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 for the August 2022 monitoring event was not complete by the date of this semiannual update report.

Statistical evaluation of groundwater quality data during the period covered by this update also included a comparison of Appendix III and Appendix IV parameter results to background levels using a prediction limit approach. As part of the evaluation of the April 2022 monitoring results, the background data set for the upper prediction limit (UPL) calculation was updated to include eight rounds of data from new background monitoring well MW-307, collected through April 2022. 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.

IPL is currently evaluating treatment options for molybdenum and lithium. Groundwater sampling and analysis have been ongoing. The evaluations of data from previous and future groundwater investigations will be utilized in the development and evaluation of groundwater corrective action alternatives.

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.
- Install and sample an off-site monitoring well to be located to the southwest of the site, within the Highway 67 right-of-way.
- A signed access agreement to install a background well at the City of Clinton wastewater treatment property was received in August 2022. The permitting, well installation, and sampling process is underway at the additional background well. The purpose of the well is to provide additional background groundwater quality data for comparison to the groundwater constituent concentrations in the bedrock delineation well MW-311A.
- Continue to pursue access agreements to install delineation monitoring wells on the two downgradient off-site properties. As soon as each of the access agreements is signed, permitting, well installation, and sampling will be initiated at each property.
- Continue to evaluate treatment options for molybdenum and lithium.
- Update the conceptual site model based on findings of nature and extent investigation.
- Revisit potential corrective measures identified in the ACM based on the updated conceptual site model and prepare an ACM addendum, if warranted.
- Conduct public meeting (40 CFR 257.96(e)).

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Tables

- 1 Timeline for Completed Work – Selection of Remedy
- 2 CCR Rule Groundwater Samples Summary

**Table 1. Timeline for Completed Work - Selection of Remedy
M. L. Kapp Generating Station / SCS Engineers Project #25221050.00**

Date	Activity
Activities Completed During Previous Semiannual Reporting Periods	
April 2020	Background monitoring well installed to provide additional information on groundwater flow direction in the site vicinity and to provide natural background groundwater conditions.
April 2020	Conduct Semiannual assessment monitoring event
July and August 2020	conducted assessment monitoring event for background monitoring well and resampling event for select parameters.
October 2020	Conduct Semiannual assessment monitoring event
November 2020 - September 2021	Negotiated access agreement for future off-site, downgradient monitoring well nest on an off-site property.
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 Groundwater 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. Complete the semiannual groundwater assessment monitoring event for all wells.
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.

**Table 1. Timeline for Completed Work - Selection of Remedy
M. L. Kapp Generating Station / SCS Engineers Project #25221050.00**

Date	Activity
December 2021	Installed off-site and downgradient monitoring wells MW-311 and MW-311A to investigate downgradient 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 Groundwater 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 Transportation related to the right-of-way permit application for a proposed monitoring 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.
Activities Completed During Current Semiannual Reporting Period	
March 2022	Completed the well documentation report for monitoring wells MW-310, MW-311, and MW-311A.
April 2022	Completed the semiannual groundwater assessment monitoring event for all wells.
April 2022	Completed statistical evaluation and result letter for the December 2021 groundwater monitoring event.
May 2022	Contacted two downgradient off-site property owners again requesting access agreements to install delineation monitoring wells on their properties.
June 2022	Completed statistical evaluation and result letter for the February 2022 groundwater monitoring event.
June 2022	Contacted two downgradient off-site property owners again requesting access agreements to install delineation monitoring wells on their properties.

**Table 1. Timeline for Completed Work - Selection of Remedy
M. L. Kapp Generating Station / SCS Engineers Project #25221050.00**

Date	Activity
July 2022	Completed the 2021 Annual Groundwater Monitoring and Corrective Action Report.
July 2022	Evaluated treatment alternatives for molybdenum and lithium impacted groundwater.
July 2022	Contacted two downgradient off-site property owners again requesting access agreements to install delineation monitoring wells on their properties.
August 2022	Completed statistical evaluation and result letter for the April 2021 groundwater monitoring event.
August 2022	Contacted downgradient off-site property owners, Clysar and Vertex Chemical again requesting access agreements to install delineation monitoring wells on their properties.
August 2022	Conducted additional sampling event at monitoring wells MW-311 and MW-311A along with site-wide water level measurements.
August 2022	Received a signed access agreement from the City of Clinton to install a background monitoring well on the City of Clinton wastewater treatment property.

Created by: NDK Date: 8/4/2021
 Last revision by: NDK Date: 8/17/2022
 Checked by: RM Date: 8/17/2022

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**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
4/18-19/2022	A	A	A	A	A	A	A	A	A	A	A	A	A
8/22/2022	--	--	--	--	--	--	--	--	--	A	A	--	--
Total Samples	3	3	3	3	3	3	3	3	3	4	4	5	4

Abbreviations:

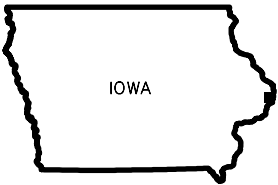
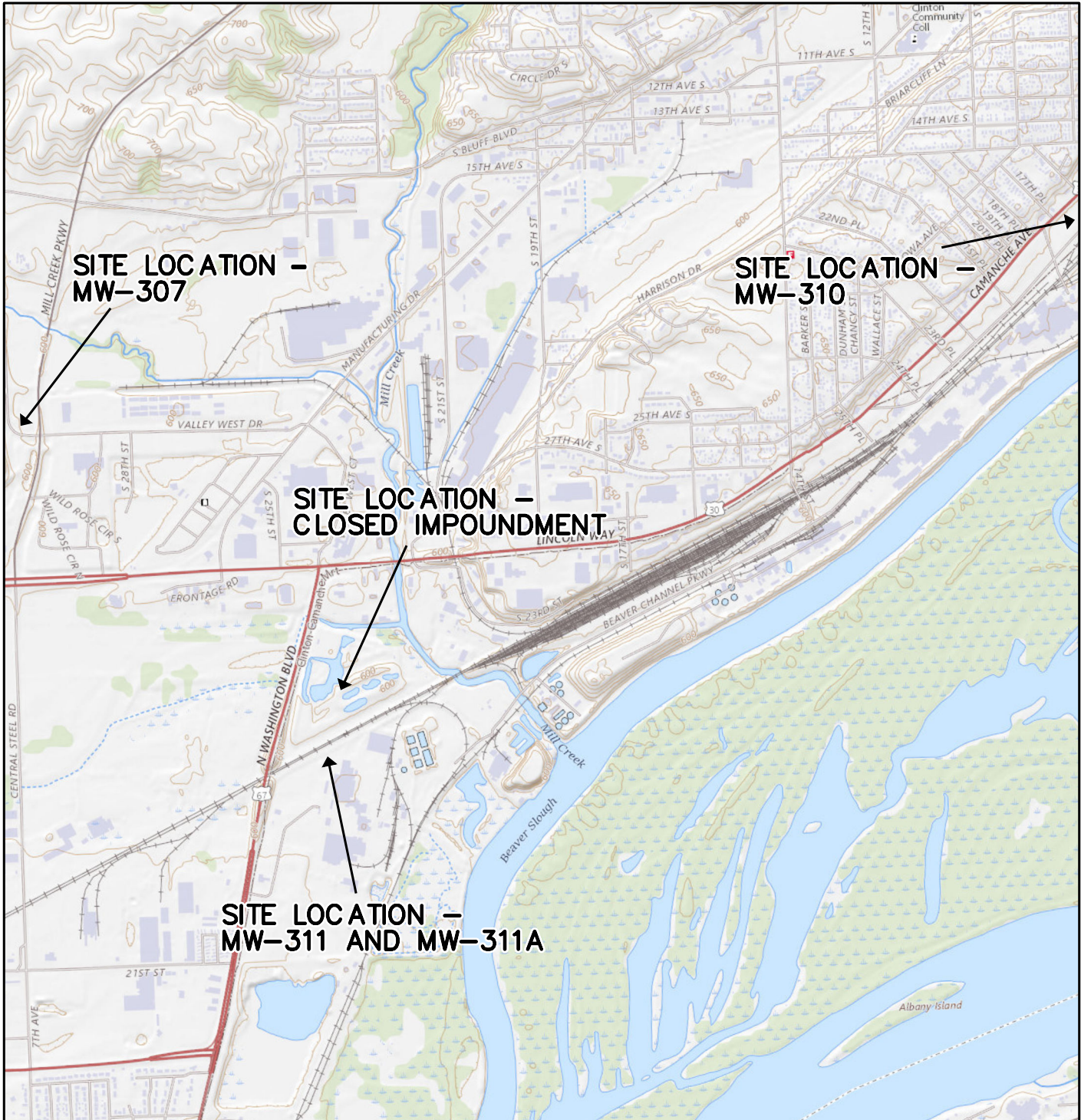
A = Assessment Monitoring Program NI = Not Installed

-- = Not Applicable

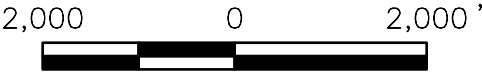
Created by: RM Date: 2/1/2021
 Last revision by: TK Date: 8/29/2022
 Checked by: NDK Date: 8/29/2022

Figures

- 1 Site Location Map
- 2 Monitoring Well MW-310 Location Map
- 3 Monitoring Well Location Map





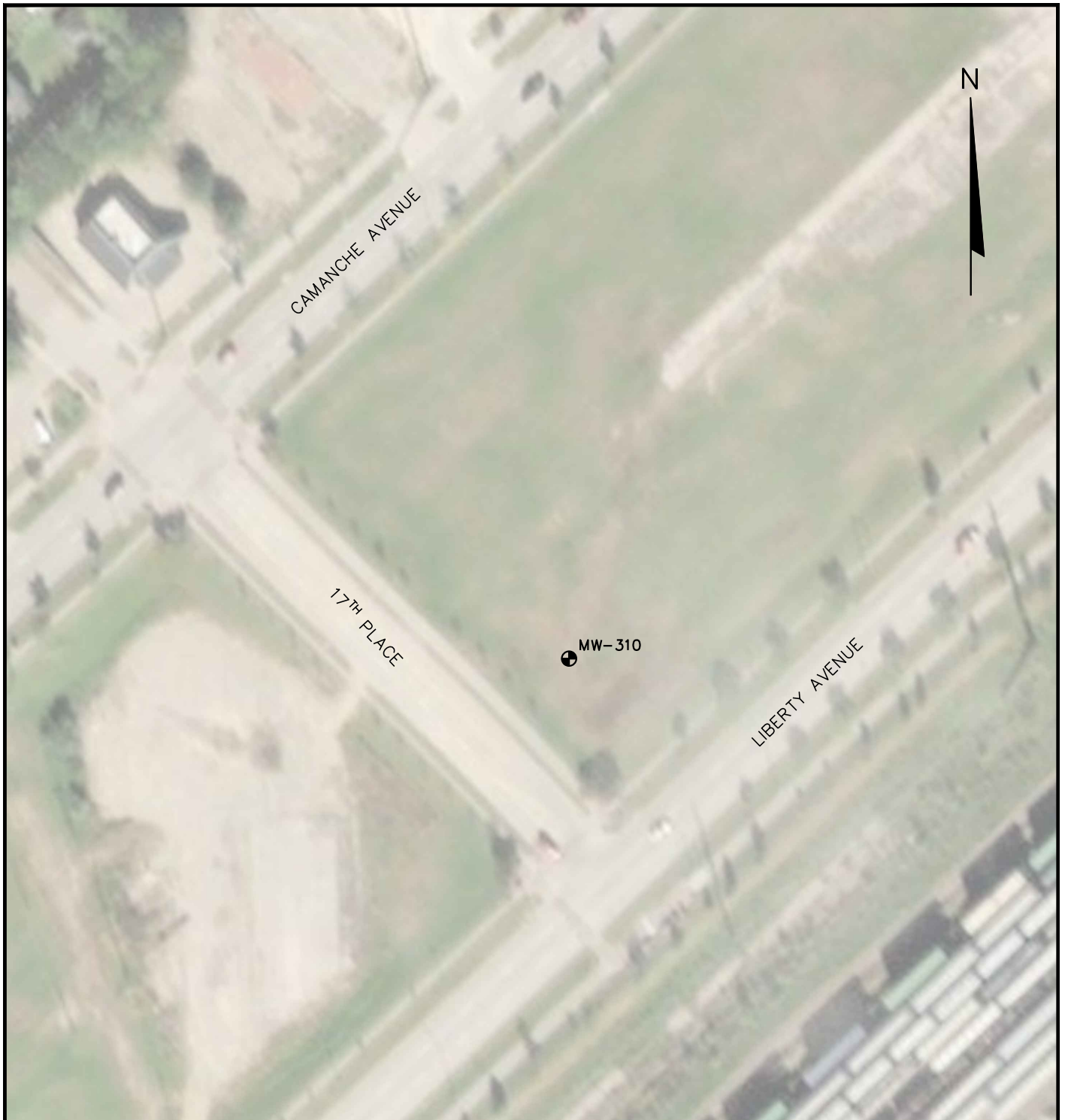
USGS THE NATIONAL MAP
AUGUST 2021



SCALE: 1" = 2,000'



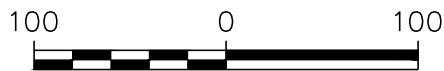
CLIENT	 ALLIANT ENERGY ML-KAPP GENERATING STATION 2001 BEAVER CHANNEL PKWY CLINTON, IA 52732	M.L. KAPP GENERATING STATION 3301 HIGHWAY 67 S CLINTON, IA 52732	SITE LOCATION MAP	
			 2830 DAIRY DRIVE, MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE
PROJECT NO.	25220117.00	DRAWN BY:	AA	1
DRAWN:	02/08/2022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



LEGEND



MONITORING WELL



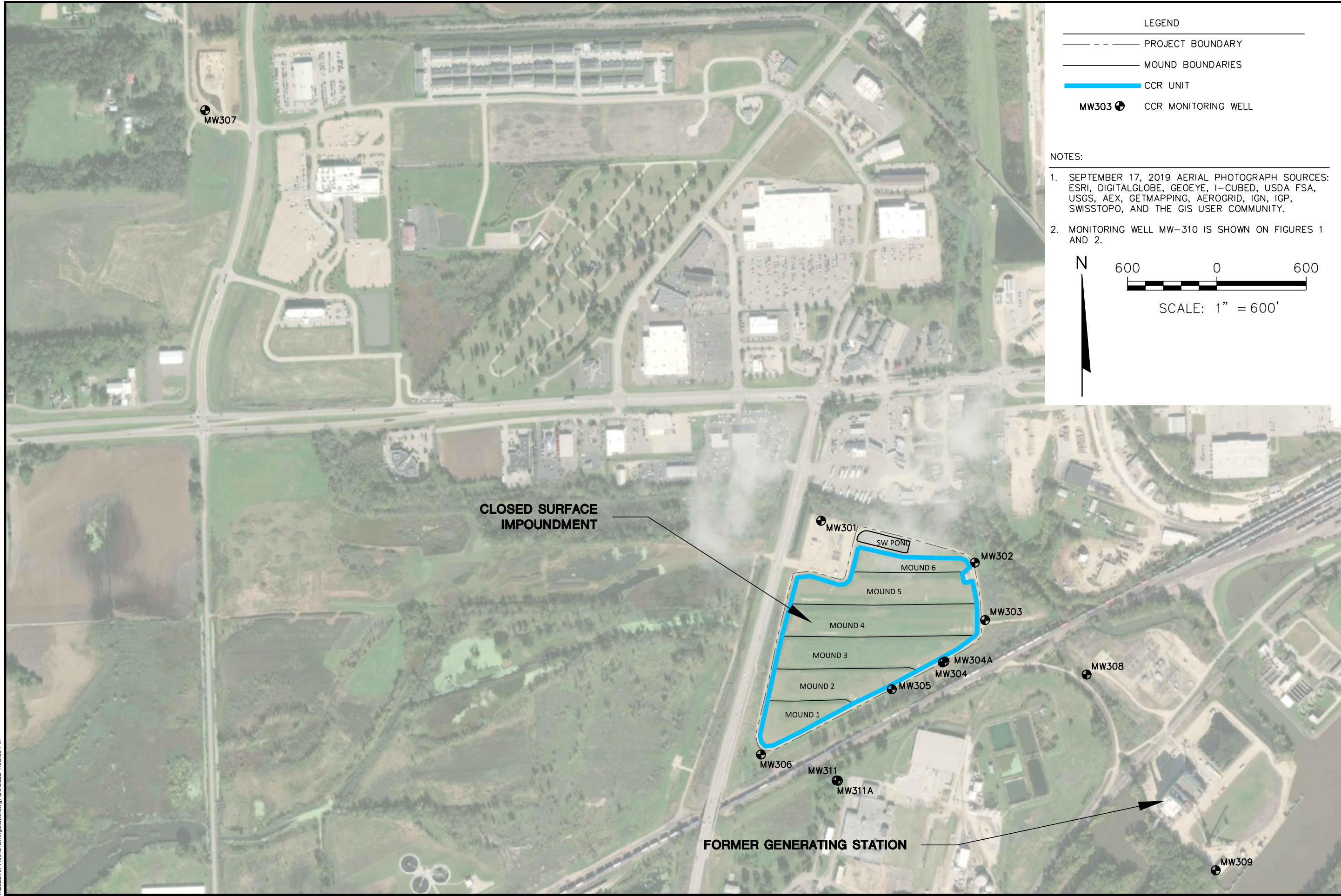
SCALE: 1" = 100'

NOTES

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

CLIENT	INTERSTATE POWER AND LIGHT 2320 POWER PLANT DRIVE LANSING, IA 52151-9733	SITE	ALLIANT ENERGY 2401 S 30 TH STREET CLINTON, IOWA	MONITORING WELL MW-310 LOCATION MAP	
	PROJECT NO. 25220117.00		DRAWN BY: KP	 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE
DRAWN: 12/27/2021	CHECKED BY: MDB	2			
REVISED: 12/27/2021	APPROVED BY: TK 03/09/2022				

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LEGEND

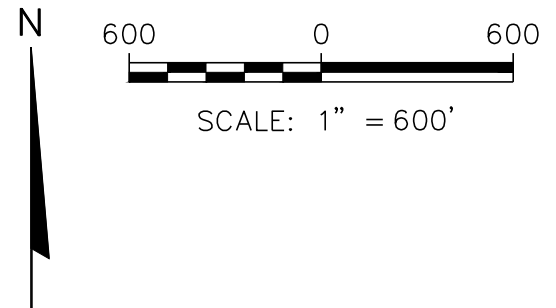
--- PROJECT BOUNDARY

--- MOUND BOUNDARIES


--- CCR UNIT

MW303 ● CCR MONITORING WELL

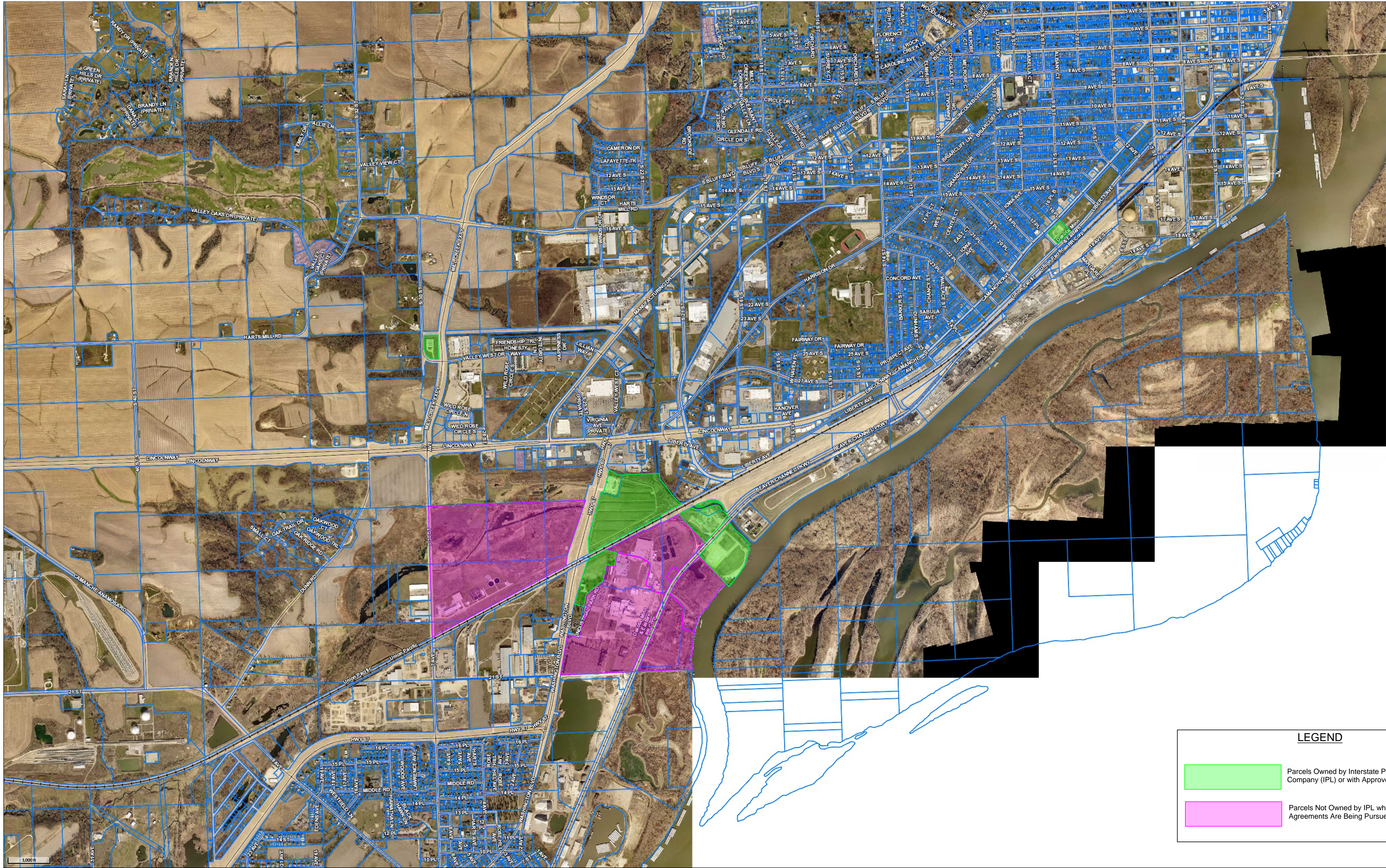
- NOTES:**
1. SEPTEMBER 17, 2019 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY.
 2. MONITORING WELL MW-310 IS SHOWN ON FIGURES 1 AND 2.



	ALLIANT ENERGY M.L. KAPP GENERATING STATION 2001 BEAVER CHANNEL PKWY, CLINTON, IA 52732	M.L. KAPP GENERATING STATION 3301 HIGHWAY 67 S, CLINTON, IA 52732	MONITORING WELL LOCATION MAP	FIGURE 3
	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	CLIENT: ALLIANT ENERGY	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830



Attachment A
Target Properties for Off-Site Monitoring Wells



Overview

Legend

- Parcels
- Condo Parcels
- Railroad Centerline
- Road Centerlines
- Road Right of Way
- Railroad Right of Way

LEGEND

- Parcels Owned by Interstate Power and Light Company (IPL) or with Approved Access Agreement
- Parcels Not Owned by IPL where Access Agreements Are Being Pursued