

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 13, 2023

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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 (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 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 2023 through August 2023.

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.

The groundwater monitoring system for the KAP monitors a single CCR unit:

- Kapp Main Ash Pond (inactive surface impoundment – closed January 2018)

The system is designed to detect monitored constituents at the waste boundary of the KAP CCR unit as required by 40 CFR 257.91(d). As of February 2023, the groundwater monitoring system consists of one upgradient background well, six downgradient compliance wells at the waste boundary, six downgradient delineation wells, and two sidegradient supplemental background wells (**Figure 2**).

Groundwater flow at the site is variable but generally to the southeast, 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

Additional delineation monitoring well nests are proposed for installation, and evaluation of potential well installation locations on the south property line of the impoundments was conducted during this semiannual period. Initial reconnaissance was completed by SCS Engineers (SCS) in April 2023 for the potential well installation locations on the Alliant property north of the railroad line. It was determined that the railroad property line needed to be surveyed prior to determining the proposed installation locations. Staking and property line survey of the railroad property line was completed in April 2023.

Hydraulic conductivity testing was conducted by SCS in April 2023 for newly installed monitoring wells MW-312 and MW-313. The monitoring well locations are shown on **Figure 2**.

During the hydraulic conductivity testing of MW-312 and MW-313, SCS attempted to fully assess the proposed well installation locations along the south property line of the impoundments; however, exact well installation locations were unable to be determined due to localized flooding.

Access to the Hawkins, Inc. property (referred to in previous submittals as the Vertex Chemical property) for the installation of an additional delineation well nest is currently being pursued through negotiations with the owner of the Hawkins property. A meeting with Hawkins personnel was conducted in June 2023 to assess potential well locations, and a proposed well nest location was staked during a site visit with Hawkins personnel in July 2023. Efforts to finalize an access agreement for the selected location are ongoing.

The ongoing attempts to negotiate access agreements with off-site property owners are documented in **Table 1**. Off-site properties are shown in **Attachment A**.

2.2 GROUNDWATER MONITORING

A semiannual groundwater sampling event was conducted on May 1 through May 3, 2023. The May 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, MW-309, MW-311, and MW-311A; background monitoring well MW-307; supplemental background monitoring well MW-310; and newly installed wells MW-312 (new supplemental background monitoring well) and MW-313 (new delineation monitoring well).

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 is currently under evaluation and will be discussed in the 2023 Annual Groundwater Monitoring and Corrective Action Report.

Based on the statistical evaluation of the May 2023 monitoring results, the compliance wells with an SSL above the GPS included:

- Arsenic: MW-303
- Lithium: MW-306
- Molybdenum: MW-301, MW-302, MW-304, MW-305

This was the second event for which arsenic was determined to be at an SSL above the GPS at a compliance well.

For the delineation wells, the only SSL above the GPS was identified for the following well:

- Molybdenum: MW-311A

Supplemental background well MW-310 is currently being evaluated for comparison purposes and is not incorporated into the statistical evaluation. A similar evaluation will be completed for new supplemental background well MW-312.

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. The ACM will be updated to address arsenic.

An updated assessment of the potential Corrective Measure Alternatives using the selection criteria in 40 CFR 257.97(b) and (c) will be provided in the required Selection of Remedy Report after updates to the conceptual site model, delineation of the nature and extent of impacts, and collection of additional data relevant to remedy selection are completed.

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.
- Finalize an access agreement to install delineation monitoring wells on the downgradient off-site property owned by Hawkins. As soon as the access agreement is signed, permitting, well installation, and sampling will be initiated.
- Continue to pursue an access agreement to install a delineation monitoring well on the off-site property owned by Clysar.
- Continue to evaluate the southern property line of the closed impoundment for the potential to install on-site delineation wells.
- Continue to evaluate treatment options for molybdenum and lithium.
- Update the ACM to address arsenic.
- 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)).
- Prepare the Selection of Remedy Report.

Tables

- 1 Timeline for Completed Work – Selection of Remedy
- 2 CCR Rule Groundwater Sample 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	Completed Semiannual Progress Report for the Selection of Remedy.
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.
March 2022	Completed Semiannual Progress Report for the Selection of Remedy.
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.
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.

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

Date	Activity
August 2022	Received a signed access agreement from the City of Clinton to install a background monitoring well on the City of Clinton regional wastewater reclamation facility (RWRF) property.
September 2022	Completed Semiannual Progress Report for the Selection of Remedy.
September 2022 - February 2023	Monthly correspondence and negotiations with off-site property owners to obtain an access agreement for the installation of delineation wells on their property.
September 2022 - February 2023	Corresponded with the City of Clinton regional wastewater reclamation facility (RWRF) staff to identify an exact location for the supplemental background bedrock monitoring well and to coordinate utility locate and drilling logistics.
September 2022	Received drilling bid for the installation of a background monitoring well on the City of Clinton regional water reclamation facility (RWRF) property.
November 2022	Completed the semiannual groundwater assessment monitoring event for all wells.
November 2022	Requested and received extension of the Iowa Department of Transportation permit to install a monitoring well within a state right-of-way.
November 2022	Completed screening of planned monitoring well locations at RWRF site and in right-of-way for utility conflicts.
December 2022	Notified by the driller that, due to several drillers with COVID, the December 2022 drilling date needs to be rescheduled to January 2023.
December 2022	Notified by the driller that, due to work delays related to severe winter weather, the January 20th drilling date needs to be rescheduled to February 6th.
December 2022	Completed lower confidence interval evaluation and results letter for the August 2022 groundwater monitoring event.
January 2023	Formal proposal submitted to Hawkins, Inc., owner of Vertex Chemical Corporation adjacent to KAP impoundment for the installation of a delineation monitoring well nest on their property.
January 2023	Notified by driller that the February 6th well installation start date for the WWTP well and Highway 67 ROW well must again be postponed due to bad weather causing schedule backups. Contracted with a new driller to install the supplemental background well and Hwy 67 delineation well during February 2023.
January 2023	Requested and received approval from the Iowa Department of Transportation to relocate the planned Highway 67 right-of-way well to the opposite side a walking path to avoid conflict with an underground gas line.
January 2023 - February 2023	Prepared the draft 2022 Annual Groundwater Monitoring and Corrective Action Report.
January 2023 - February 2023	Evaluated potential locations on the M.L. Kapp closed impoundments property for the installation of additional delineation wells.
February 2023	Installed and developed supplemental background bedrock well MW-312 on the City of Clinton RWRF property.
February 2023	Installed and developed delineation well MW-313 in the Highway 67 ROW.
Activities Completed During Current Semiannual Reporting Period	
March 2023	Surveyed wells installed in Highway 67 ROW. Soil samples from MW-312 and MW-313 sent to the laboratory for analysis and passed TCLP. Ordered pumps for installation for initial sampling event. Performed reconnaissance of potential well locations on Alliant property north of the railroad line, with intent to survey railroad property line and mark water utilities.
March 2023	Completed lower confidence interval evaluation and results letter for the November 2022 groundwater monitoring event.

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

Date	Activity
April 2023	Hydraulic conductivity testing, surveying, and initial sample collection completed on newly installed monitoring wells MW-312 and MW-313.
April 2023	Railroad property line south of the closed impoundment surveyed. Localized flooding impeded full evaluation of potential monitoring well installation locations.
May 2023	Completed the semiannual groundwater assessment monitoring event for all wells.
June 2023	Met with Hawkins, Inc. (referred to as Vertex in prior submittals) personnel to negotiate property access for potential well installation.
July 2023	Monitoring Well Construction Report submitted for MW-312 and MW-313.
July 2023	Future well location determined during site visit on Hawkins property.
August 2023	Sent revised Access Agreement to Hawkins reflecting agreed upon well location as identified during site visit.
August 2023	Submitted 2022 Annual Groundwater Monitoring and Corrective Action Report.

Created by: NDK Date: 8/4/2021
 Last revision by: NLB Date: 8/10/2023
 Checked by: RM Date: 8/28/2023

I:\25221050.00\Deliverables\2023 KAP Semiannual - ACM\2023 September 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 Well	Supplemental 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-313	MW-307	MW-310	MW-312
4/5/2021	A	A	A	A	A	A	A	NI	NI	NI	NI	NI	A	NI	NI
6/17/2021	--	--	--	--	--	--	--	A	A	NI	NI	NI	A	NI	NI
7/22/2021	--	--	--	--	--	--	--	--	--	NI	NI	NI	A	NI	NI
10/5/2021	--	--	--	--	--	--	--	--	--	NI	NI	NI	--	A	NI
10/18-19/2021	A	A	A	A	A	A	A	A	A	NI	NI	NI	A	A	NI
12/29/2021	--	--	--	--	--	--	--	--	--	A	A	NI	--	--	NI
2/21/2022	--	--	--	--	--	--	--	--	--	A	A	NI	--	A	NI
4/18-19/2022	A	A	A	A	A	A	A	A	A	A	A	NI	A	A	NI
8/22/2022	--	--	--	--	--	--	--	--	--	Add.	Add.	NI	--	--	NI
11/1-3/2022	A	A	A	A	A	A	A	A	A	A	A	NI	A	A	NI
5/1-4/2023	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Total Samples	5	5	5	5	5	5	5	5	5	6	6	1	7	6	1

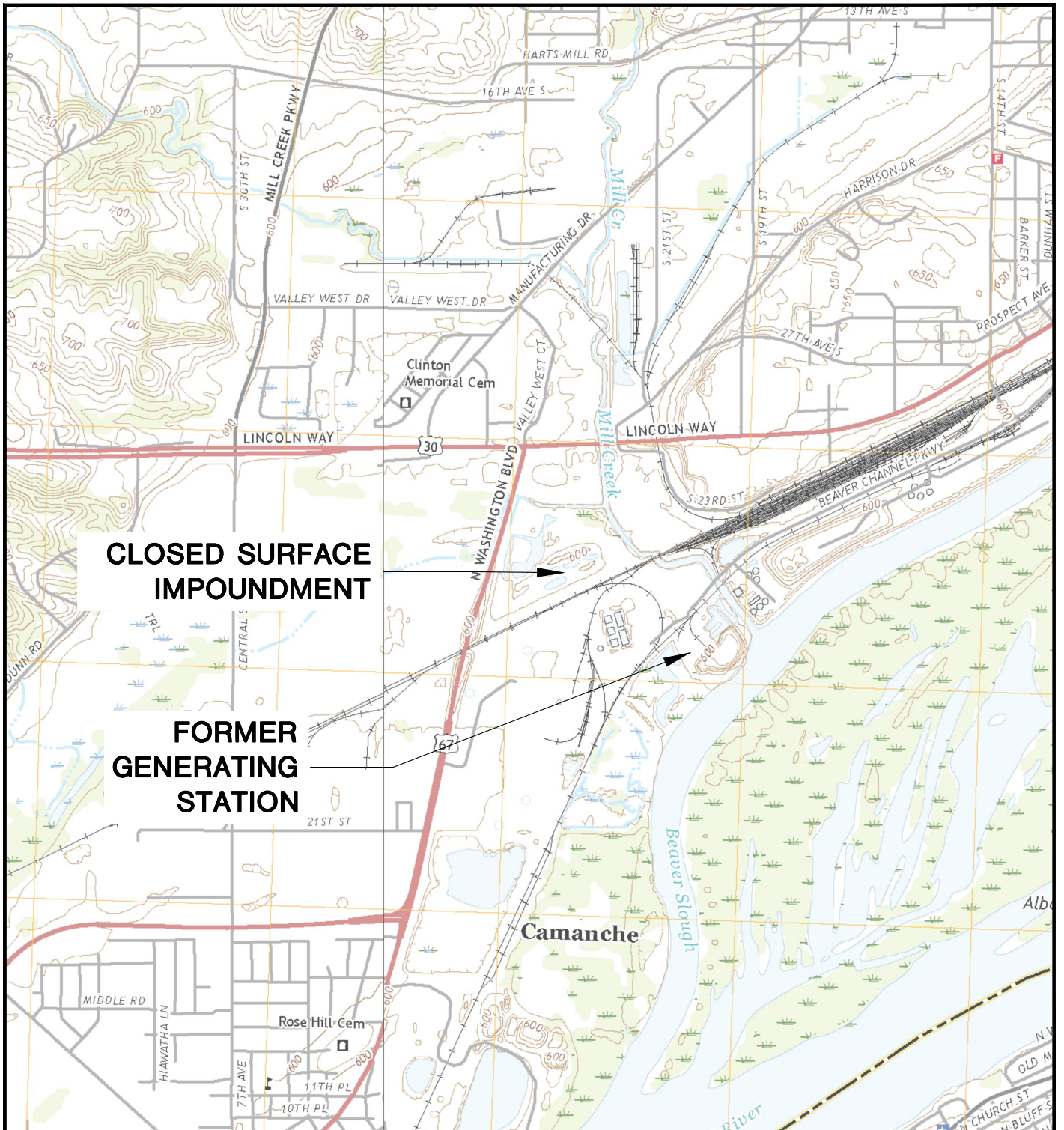
Abbreviations:

A = Assessment Monitoring Program NI = Not Installed Add. = Additional Sampling Event
 -- = Not Applicable

Created by: RM Date: 2/1/2021
 Last revision by: NLB Date: 8/7/2023
 Checked by: RM Date: 8/29/2023

Figures

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



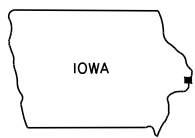
**CLOSED SURFACE
IMPOUNDMENT**

**FORMER
GENERATING
STATION**

Camanche



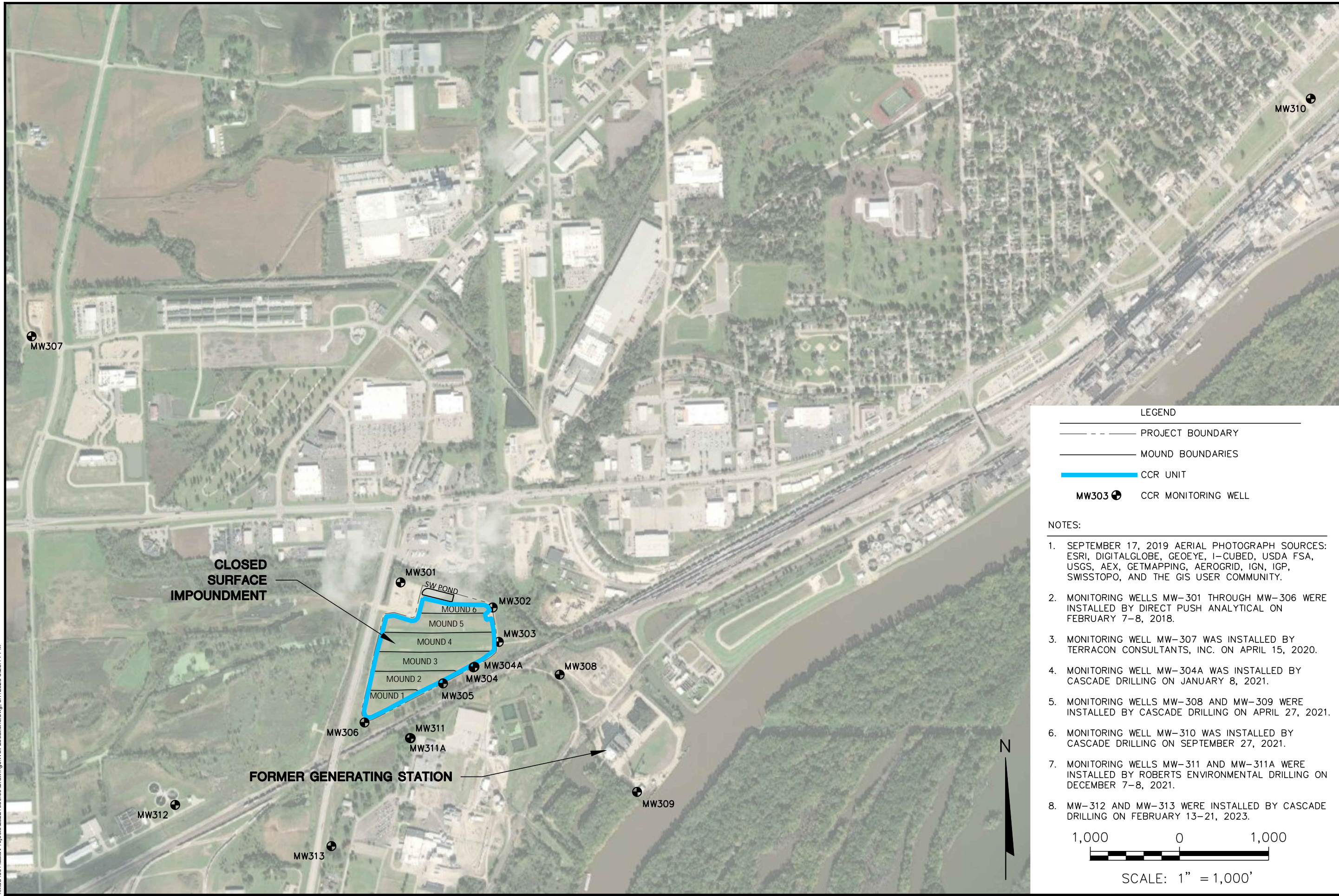
CLINTON QUADRANGLE
IOWA-ILLINOIS
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'



CLIENT	ALLIANT ENERGY	SITE	M.L. KAPP GENERATING STATION 3301 HIGHWAY 67 S CLINTON, IA 52732	ENGINEER	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE	1
	PROJECT NO. 25220077.00		DRAWN BY: BSS				
	DRAWN: 11/20/2019		CHECKED BY: NDK				
	REVISED: 09/04/2020		APPROVED BY: TK, 3/10/2023				

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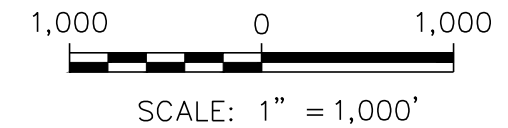
\\Mediac1\data\Projects\25221050.00\Drawings\Well Locations.dwg, 3/7/2023 3:26:14 PM



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, AEROGRIID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY.
 2. MONITORING WELLS MW-301 THROUGH MW-306 WERE INSTALLED BY DIRECT PUSH ANALYTICAL ON FEBRUARY 7-8, 2018.
 3. MONITORING WELL MW-307 WAS INSTALLED BY TERRACON CONSULTANTS, INC. ON APRIL 15, 2020.
 4. MONITORING WELL MW-304A WAS INSTALLED BY CASCADE DRILLING ON JANUARY 8, 2021.
 5. MONITORING WELLS MW-308 AND MW-309 WERE INSTALLED BY CASCADE DRILLING ON APRIL 27, 2021.
 6. MONITORING WELL MW-310 WAS INSTALLED BY CASCADE DRILLING ON SEPTEMBER 27, 2021.
 7. MONITORING WELLS MW-311 AND MW-311A WERE INSTALLED BY ROBERTS ENVIRONMENTAL DRILLING ON DECEMBER 7-8, 2021.
 8. MW-312 AND MW-313 WERE INSTALLED BY CASCADE DRILLING ON FEBRUARY 13-21, 2023.

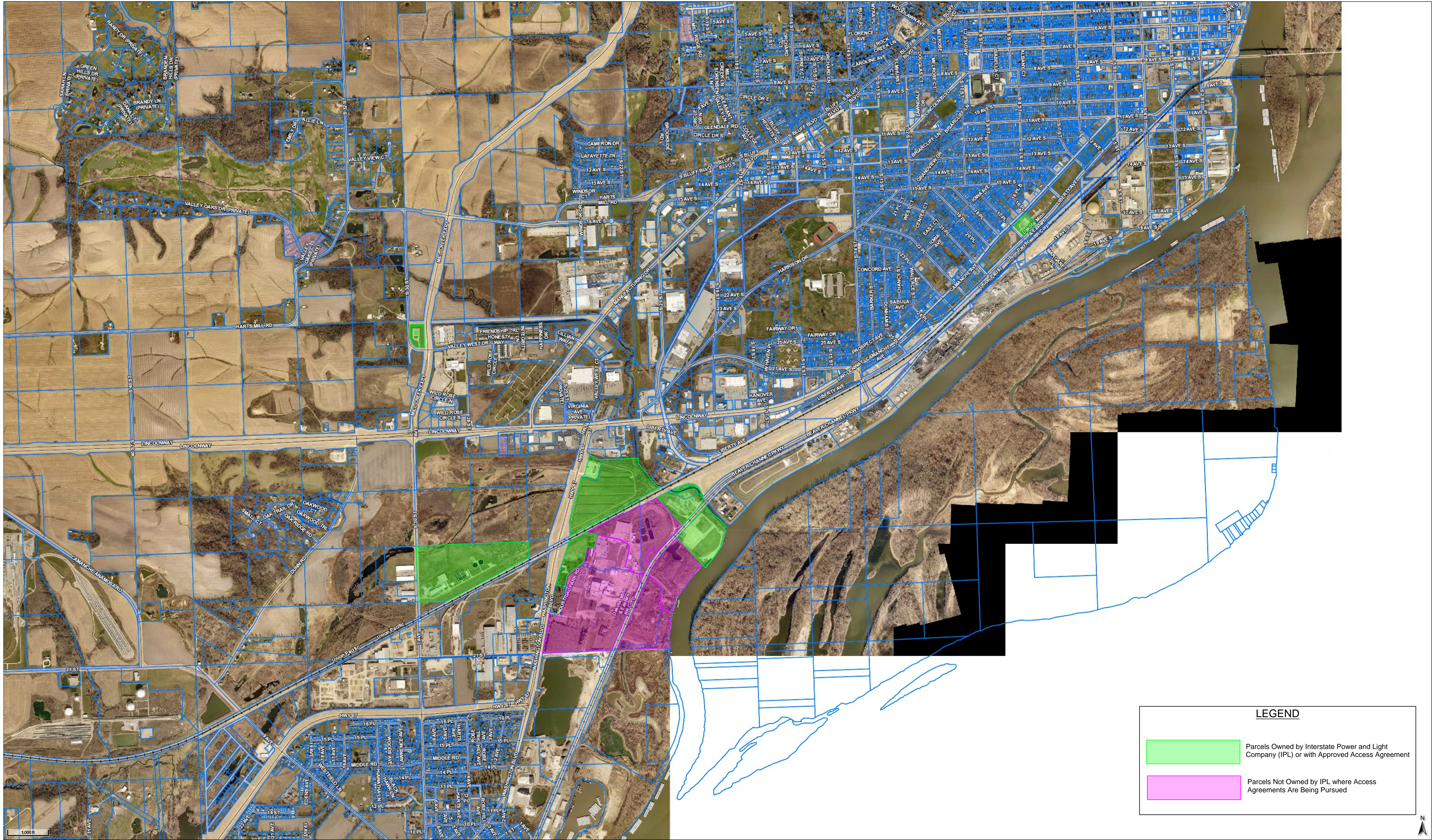


CLIENT	ALLIANT ENERGY ML-KAPP GENERATING STATION 2001 BEAVER CHANNEL PKWY CLINTON, IA 52732		M.L. KAPP GENERATING STATION 3301 HIGHWAY 67 S, CLINTON, IA 52732		SITE PLAN AND MONITORING WELL LOCATION MAP	
	PROJECT NO.	25221050.00	DRAWN BY:	KP/ZTW	ENGINEER	FIGURE
DRAWN:	09/04/2020	CHECKED BY:	RM			2
REVISED:	03/06/2023	APPROVED BY:	TK	03/07/2023		

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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