2023 Annual Groundwater Monitoring and Corrective Action Report

Lansing Generating Station
Lansing, Iowa

Prepared for:

Alliant Energy

SCS ENGINEERS

25223070.00 | January 31, 2024

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OVERVIEW OF CURRENT STATUS

Lansing Generating Station, Landfill, and Upper Ash Pond
2023 Annual Report

In accordance with §257.90(e)(6), this section at the beginning of the annual report provides an overview of the current status of groundwater monitoring and corrective action programs for the coal combustion residual (CCR) unit. The groundwater monitoring system at the Lansing Generating Station (LAN) is a multiunit system that includes the Landfill and Upper Ash Pond. Supporting information is provided in the text of the annual report.

Category	Rule Requirement	Site Status
Monitoring Status – Start of Year	(i) At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;	Assessment
Monitoring Status – End of Year	(ii) At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;	Assessment
Statistically Significant Increases (SSIs)	(iii) If it was determined that there was an SSI over background for one or more constituents listed in Appendix III to this part pursuant to §257.94(e): (A) Identify those constituents listed in Appendix III to this part and the names of the monitoring wells associated with such an increase; and	SSIs initially determined on January 15, 2018, based on October 2017 monitoring results. In 2023, SSIs identified for semiannual events for compliance wells at waste boundary included the following; see Table 5 for complete results. <u>October 2022</u> Boron: MW-301, MW-302, MW-303 Calcium: MW-302 Chloride: MW-301, MW-302, MW-303 Field pH: MW-301 Sulfate: MW-301, MW-303 <u>April 2023</u> Boron: MW-301, MW-302 Calcium: MW-302 Chloride: MW-301, MW-302 Field pH: MW-301 Sulfate: MW-301

Category	Rule Requirement	Site Status
	(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.	July 16, 2018
Statistically Significant Levels (SSL) Above Groundwater Protection Standard (GPS)	(iv) If it was determined that there was an SSL above the GPS for one or more constituents listed in Appendix IV to this part pursuant to §257.95(g) include all of the following:	
	(A) Identify those constituents listed in Appendix IV to this part and the names of the monitoring wells associated with such an increase;	Arsenic: MW-302 Determined to be at SSL above GPS on January 15, 2019. In October 2022 and April 2023, concentrations exceeding the GPS detected in both events. Molybdenum: MW-304A Determined to be at SSL above GPS on June 7, 2021. No SSLs at compliance wells.
	(B) Provide the date when the Assessment of Corrective Measures (ACM) was initiated for the CCR unit;	Arsenic: April 15, 2019 Molybdenum: No ACM required.
	(C) Provide the date when the public meeting was held for the ACM for the CCR unit; and	July 17, 2023
	(D) Provide the date when the ACM was completed for the CCR unit.	September 12, 2019 – Original ACM November 25, 2020 –Addendum No. 1 to ACM June 5, 2023 – Addendum No. 2 to ACM
Selection of Remedy (SOR)	(v) Whether a remedy was selected pursuant to §257.97 during the current annual reporting period, and if so, the date of remedy selection; and	SOR is in progress
Corrective Action	(vi) Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.	Not applicable - SOR is in progress

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1.0 INTRODUCTION

This 2023 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the Coal Combustion Residuals (CCR) Rule [40 Code of Federal Regulations (CFR) 257.50-107]. Specifically, this report was prepared to fulfill the requirements of 40 CFR 257.90(e). The applicable sections of the Rule are provided below in *italics*, followed by applicable information relative to the 2023 Annual Groundwater Monitoring and Corrective Action Report for the CCR Units. The Lansing Generating Station (LAN) site location is shown on **Figure 1**.

This report covers the period of groundwater monitoring from January 1, 2023, through December 31, 2023.

The groundwater monitoring system at the LAN is a multiunit system that includes the following two existing CCR units:

- LAN Landfill
- LAN Upper Ash Pond

The groundwater system is designed to detect monitored constituents at the waste boundary of the facility as required by 40 CFR 257.91(d). The groundwater monitoring system currently consists of 1 upgradient monitoring well, 3 downgradient monitoring wells at the waste boundary, and 10 additional downgradient wells. Four of the additional 10 downgradient wells were installed as delineation monitoring wells, 4 were installed as deeper delineation piezometers, and 2 were installed as groundwater elevation monitoring points only (**Figure 2** and **Table 1**).

The ongoing groundwater investigation has provided evidence that the Ash Pond and Landfill are not the source of the arsenic groundwater protection standard (GPS) exceedances in compliance monitoring well MW-302. An amendment to the Assessment of Corrective Measures (ACM) was completed in June 2023 to provide a summary of the information supporting that conclusion and a revision of the site conceptual model.

2.0 BACKGROUND

To provide context for the annual report, the following background information is provided in this section of the report, prior to the annual report sections:

- Geologic and hydrogeologic setting
- CCR Rule monitoring system

2.1 GEOLOGIC AND HYDROGEOLOGIC SETTING

2.1.1 Regional Information

The uppermost bedrock unit in the site area is the Jordan aquifer, which is the lower Cambrian-Ordovician sandstone interbedded with dolostone. The thickness of the Jordan aquifer varies from 50 to more than 120 feet thick in most areas of Allamakee County. Underlying the Cambrian-Ordovician sandstone are the Cambrian confining beds comprised of dolostone, siltstone, and shale. The Cambrian confining beds overlie the Dresbach Aquifer, comprised of shaly sandstone. A summary of the regional hydrogeologic stratigraphy is provided in **Appendix A**. A regional bedrock

surface hydrogeologic map, hydrogeologic cross sections, and a contour map of the top of the Cambrian-Ordovician sandstone in northeastern Iowa are also included in **Appendix A**. The bedrock surface elevation is highly variable due to erosion.

The Mississippi River and associated alluvial aquifers are a major source of surface water and shallow groundwater in the area. The alluvial aquifer is up to 60 feet thick within the deeply incised valley where LAN is located, but is thin to absent on the surrounding bluffs and hilltops. The lower Cambrian-Ordovician sandstone unit (Jordan sandstone) is the shallowest regional bedrock aquifer. The October 1989 Iowa Department of Natural Resources (IDNR) Water Atlas No. 8 states that the Jordan aquifer is commonly the source of municipal and industrial high-capacity wells in the region. A summary of the regional groundwater units is included in **Appendix A.**

A map showing the regional potentiometric surface in the Jordan sandstone is presented in **Appendix A**. This map shows the potentiometric surface near the site area as sloping to the east-northeast. The flow direction in the shallow unconsolidated aquifer at Lansing is generally to the north (**Appendix A**). The flow in the Jordan sandstone immediately beneath the landfill and ponds is also likely to the north due to the control of incoming groundwater from the bluffs flanking the valley with ultimate discharge to the Mississippi River.

2.1.2 Site Information

For the purposes of groundwater monitoring in accordance with section 257.91 of the CCR Rule, the shallow alluvial aquifer in combination with the hydraulically connected lower Cambrian-Ordovician sandstone unit (Jordan sandstone) is considered to be the uppermost aquifer unit at the Lansing site. The upgradient background monitoring well total boring depth was 93.5 feet. The bedrock at this location is overlain by 37 feet of unconsolidated material and the water table occurs in the bedrock.

Monitoring wells MW-301 through MW-309 and piezometers MW-302A, MW-304A, MW-306A, and MW-307A are installed in the shallow alluvial aquifer and in the hydraulically connected lower Cambrian-Ordovician sandstone unit (Jordan sandstone), which is the uppermost aquifer unit at the Lansing site. The unconsolidated materials at these well locations are generally sand, silt with minor clay, and gravel. The total boring depths of monitoring wells MW-301 through MW-309 are between 16 and 27 feet, and bedrock was not encountered in any of the monitoring well borings. The total depths of piezometers MW-302A, MW-304A, and MW-307A are between 50 and 56 feet. Background monitoring well MW-6 is screened within the bedrock unit because the water table occurs within the bedrock at this location. Boring logs, well construction, and development documentation for all monitoring wells are included in **Appendix B.**

To evaluate groundwater flow directions and rates, groundwater flow maps were developed for two depth intervals within the aquifer. The water table maps are based on monitoring wells installed at or near the water table. The potentiometric surface maps are based on the deeper “A” wells.

The water table and potentiometric surface contours and groundwater flow patterns based on April 2023 water level measurements are shown on **Figures 3** and **4**. The water table and potentiometric surface contours and groundwater flow patterns for the October 2023 water level measurements are shown on **Figures 5** and **6**. The groundwater elevation data for the CCR monitoring wells are provided in **Table 3**, along with additional groundwater elevation data for the wells in the state monitoring program for the CCR landfill. Estimated horizontal gradients and flow velocities are provided in **Table 4A**. Calculated vertical gradients for the nested wells are provided in **Table 4B**.

2.2 CCR RULE MONITORING SYSTEM

The groundwater monitoring system established in accordance with the CCR Rule consists of one upgradient (background) monitoring well and three downgradient monitoring wells installed at the waste boundary (**Table 1** and **Figure 2**). The background well is MW-6, and the three downgradient compliance wells at the waste boundary include MW-301, MW-302, and MW-303. Four additional water table wells (MW-304, MW-305, MW-306, and MW-307) and four deeper piezometers (MW-302A, MW-304A, MW-306A, and MW-307A) were added as delineation wells to support the evaluation of the nature and extent of groundwater impacts and characterization of the site conditions. Two additional water table wells (MW-308 and MW-309) were installed to provide information on horizontal groundwater flow, and groundwater sample collection is not currently planned at these two wells.

Monitoring well nest MW-307/MW-307A was installed in 2021 at the waste boundary, at a location between the Upper Ash Pond and downgradient compliance well MW-302. Installation of a compliance well at this location was not feasible when the monitoring system was originally installed in 2015.

3.0 § 257.90(E) ANNUAL REPORT REQUIREMENTS

Annual groundwater monitoring and corrective action report. *For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1). At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:*

3.1 §257.90(E)(1) SITE MAP

A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;

A map of the site location is provided on **Figure 1**. A map with an aerial image showing the CCR units and all background (or upgradient) and downgradient monitoring wells with identification numbers for the groundwater monitoring program is provided on **Figure 2**.

3.2 §257.90(E)(2) MONITORING SYSTEM CHANGES

Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;

No changes to the monitoring system were made in 2023.

3.3 §257.90(E)(3) SUMMARY OF SAMPLING EVENTS

In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;

Two groundwater sampling events were completed in 2023. A summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection or assessment monitoring programs is included in **Table 2**.

The semiannual assessment monitoring events for the compliance monitoring network were completed in April and October 2023, with the exception of well MW-303, which was dry during the April 2023 sampling event and had insufficient water for sample collection during the October 2023 sampling event. In April and October 2023, samples from the background well and compliance wells installed at the waste boundary (except MW-303) were analyzed for Appendix III and Appendix IV parameters. Samples from the delineation wells were analyzed for arsenic and molybdenum. Both semiannual events included additional parameters chosen to assist with the SOR process. Supplemental parameters included dissolved and total metals, general water quality parameters, and parameters used to evaluate feasibility of monitored natural attenuation (MNA).

The validation and evaluation of the October 2022 monitoring event data was completed and transmitted to IPL on February 20, 2023. The validation and evaluation of the April 2023 monitoring event data was completed and transmitted to IPL on August 30, 2023. The validation and evaluation of the October 2023 monitoring event data was in progress at the end of 2023 and will be transmitted to IPL in 2024; therefore, the October 2023 monitoring results will be included in the 2024 annual report. The October 2023 groundwater elevation data is included in this report.

The October 2022 and April 2023 monitoring results are summarized in **Table 5**. Field parameter results for the October 2022 and April 2023 sampling event is provided in **Table 6**. The analytical reports for October 2022 and April 2023 are provided in **Appendix C**. Historical results for each monitoring well through April 2023 are summarized in **Appendix D**.

3.4 § 257.90(E)(4) MONITORING TRANSITION NARRATIVE

A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels);

There was no monitoring program transition in 2023.

The LAN monitoring program transitioned to assessment monitoring beginning in April 2018 and assessment monitoring continued through 2023. An ACM was initiated for the LAN CCR units in April 2019 and completed in September 2019. Addendum No. 1 to the ACM was completed in November 2020 and Addendum No. 2 to the ACM was completed in June 2023. The SOR is in progress. The ACM was initiated in response to the detection of arsenic at SSLs exceeding the GPS at compliance well MW-302. Assessment monitoring continued during the ACM and will continue during the SOR.

In 2023, the only Appendix IV parameter detected at a concentration above the GPS in a sample from a compliance well at the waste boundary was arsenic. Molybdenum was detected above the

GPS in the samples from delineation well MW-304A, but has not been detected in the compliance wells at the waste boundary and was attributed to natural background in an alternative source determination completed in 2021. As shown in **Table 5**, several Appendix III and Appendix IV parameters continue to be detected at levels that represent statistically significant increases (SSIs) above background.

In accordance with the Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at Resource Conservation and Recovery Act Facilities (U.S. Environmental Protection Agency, 2009), the comparison of assessment monitoring results to the GPS was based on the lower confidence limit (LCL) for the arithmetic mean. The LCL evaluations completed in 2023 for the October 2022 and April 2023 events are provided in **Appendix E**. The LCLs were calculated with Sanitas™.

Based on the LCL evaluation for the compliance wells installed at the waste boundary, the only parameter at an SSL above the GPS continues to be arsenic at compliance well MW-302. As described in Addendum No. 2 to the ACM, the LAN Upper Ash Pond, and Landfill are not the likely source of the SSLs above the GPS for arsenic at monitoring well MW-302.

3.5 § 257.90(E)(5) OTHER REQUIREMENTS

Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.

Additional potentially applicable requirements for the annual report, and the location of the requirement within the Rule, are provided in the following sections. For each cited section of the Rule, the portion referencing the annual report requirement is provided below in italics, followed by applicable information relative to the 2023 Annual Groundwater Monitoring and Corrective Action Report for the CCR Units.

3.5.1 § 257.90(e) General Requirements

For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year.

Status of Groundwater Monitoring and Corrective Action Program. The groundwater monitoring and corrective action program is currently in the SOR process, with assessment monitoring continuing.

Summary of Key Actions Completed.

- Completed two semiannual assessment monitoring events (April and October 2023).
- Completed statistical evaluation for the October 2022 assessment monitoring event and prepared groundwater monitoring results letter (February 2023).
- Prepared semiannual progress reports for the SOR process (March and September 2023).
- Completed statistical evaluation for the April 2023 assessment monitoring event and prepared groundwater monitoring results letter (August 2023).

- Conducted a public meeting for the SOR on July 17, 2023, for ACM Addendum No. 2.
- The ACM Addendum No. 2 was completed.

Closure Activities

- Completed updates to the Water Well Pollution Prevention Plan (WWPPP) to obtain IDNR 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 (January 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 (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, which is within the footprint of the Upper Ash Pond. Construction of a dewatering treatment system laydown pad with imported soil fill at the northeast limits of the Upper Ash Pond (February 2023).
- Operated groundwater dewatering wells and treatment system to remove surface water from the north half of the Upper Ash Pond (March and April 2023).
- Excavated CCR from the north half of the Upper Ash Pond and placed it in the South Pond Closure Area (April – May 2023).
- Placed and compacted imported general fill in the north half of the Upper Ash Pond (May – August 2023).
- Excavated coal and coal impacted soils from the coal yard and placed in the Ash Landfill and South Pond Closure Area (May – August 2023).
- Placed imported select clay cover layer on the Ash Landfill (June – July 2023).

  - Placed imported low permeability soil layer in South Pond Closure Area (July – August 2023).
  - Placed imported topsoil in coal yard and closure areas (August 2023).
  - Abandoned groundwater dewatering wells (July – August 2023).
  - Received Joint Permit Application Approval from USACE (August 2023).
  - Inclinometers were abandoned (August 2023).
  - Substantial completion of Landfill closure (September 2023).
  - Substantial completion of the South Pond Closure Area (September 2023).
  - Vibrating wire piezometers were disconnected (September 2023).
  - Federal certification of closure for the Landfill was submitted (October 2023).
  - Completion of Landfill site restoration activities (October 2023).
- Completion of the Upper Ash Pond and the Landfill, and former coal yard site restoration activities (October 2023).
- Construction Documentation report for closure of the Lansing Ash Disposal Landfill submitted to IDNR (November 2023).

Description of Any Problems Encountered. Compliance monitoring well MW-303 was dry during the April 2023 sampling event and had insufficient water for sample collection during the October 2023 sampling event due to groundwater dewatering as part of the pond closure work. Groundwater dewatering wells were active during the April 2023 event and were abandoned by August 2023. Groundwater levels had not recovered enough by the October 2023 event to collect a groundwater sample from MW-303.

Discussion of Actions to Resolve the Problems. An attempt to sample will be made during the next semiannual groundwater monitoring event in April 2024. Because groundwater dewatering has stopped, it is expected that a sample will be able to be collected.

Projection of Key Activities for the Upcoming Year (2024).

- Complete a semiannual SOR progress report.
- Complete the SOR based on information in the revised ACM.
- Complete two semiannual assessment monitoring events (April and October 2024).
- Complete statistical evaluation and determination of any SSLs exceeding the GPS and prepare groundwater monitoring results letter for the October 2023 monitoring event (March 2024).

- Complete statistical evaluation and determination of any SSLs exceeding the GPS and prepare groundwater monitoring results letter for the April 2024 monitoring event (August 2024).

- Continue evaluation of post-closure groundwater levels and remedies as needed.

3.5.2 § 257.94(d) Alternative Detection Monitoring Frequency

The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable. The LAN CCR units are no longer in the detection monitoring program.

3.5.3 § 257.94(e)(2) Alternative Source Demonstration for Detection Monitoring

The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

Not applicable. The LAN CCR units are no longer in the detection monitoring program.

3.5.4 § 257.95(c) Alternative Assessment Monitoring Frequency

The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable. Assessment monitoring has been initiated at the site, but no alternative assessment monitoring frequency is proposed at this time.

3.5.5 § 257.95(d)(3) Assessment Monitoring Results and Standards

Include the recorded concentrations required by paragraph (d)(1) of this section, identify the background concentrations established under § 257.94(b), and identify the groundwater protection standards established under paragraph (d)(2) of this section in the annual groundwater monitoring and corrective action report required by § 257.90(e).

The 2023 assessment monitoring results, background UPLs, and GPSs established for LAN are provided in **Table 5**. The laboratory reports are provided in **Appendix C**. Historical monitoring results are summarized in **Appendix D**.

Supplemental groundwater quality parameters were included in the monitoring program in 2023 to support the SOR process. The results for the supplemental parameters are included in **Table 5**, in the laboratory reports in **Appendix C**, and in the historical results in **Appendix D**.

3.5.6 § 257.95(g)(3)(ii) Alternative Source Demonstration for Assessment Monitoring

The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

No alternative source demonstrations were completed in 2023.

3.5.7 § 257.96(a) Extension of Time for Corrective Measures Assessment

The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measure due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

The ACM was initiated on April 15, 2019. The July 10, 2019, certification demonstrated the need for a 90-day deadline extension which was provided in the 2019 Annual Groundwater Monitoring and Corrective Action Report. The ACM was completed on September 19, 2019. Addendum No. 1 to the ACM was completed on November 25, 2020. Addendum No. 2 to the ACM was completed on June 5, 2023.

3.6 §257.90(E)(6) OVERVIEW

A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit.

The specific requirements for the overview under §257.90(e)(6) are listed and the information is provided at the beginning of this report, before the Table of Contents.

4.0 REFERENCE

U.S. Environmental Protection Agency (U.S. EPA), 2009, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, EPA 530-R-09-007, March 2009.

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Tables

Table 1. Groundwater Monitoring Well Network
Lansing Generating Station / SCS Engineers Project #25223070.00

Monitoring Well	Location in Monitoring Network	Role in Monitoring Network
MW-6	Upgradient	Background
MW-301	Downgradient	Compliance
MW-302	Downgradient	Compliance
MW-302A	Downgradient, deeper	Delineation
MW-303	Downgradient	Compliance
MW-304	Downgradient	Delineation
MW-304A	Downgradient, deeper	Delineation
MW-305	Downgradient	Delineation
MW-306	Downgradient	Delineation
MW-306A	Downgradient, deeper	Delineation
MW-307	Downgradient	Delineation
MW-307A	Downgradient, deeper	Delineation
MW-308	Downgradient	Groundwater Elevation Only
MW-309	Downgradient	Groundwater Elevation Only

Created by:	RM	Date:	12/14/2020
Last revision by:	NLB	Date:	12/27/2023
Checked by:	RM	Date:	1/3/2024

Table 2. CCR Rule Groundwater Samples Summary
Lansing Generating Station / SCS Engineers Project #25223070.00

Sample Dates	Background Well	Compliance Wells		Delineation Well	Compliance Well	Delineation Wells							Groundwater Elevation Only	
	MW-6	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A	MW-307	MW-307A	MW-308[1]	MW-309[1]
4/10-11/2023	A	A	A	A-NE	--	A-NE	A-NE	A-NE	A-NE	A-NE	A-NE	A-NE	--	--
10/30-31/2023	A	A	A	A-NE	--	A-NE	A-NE	A-NE	A-NE	A-NE	A-NE	A-NE	--	--
Total Samples	2	2	2	2	0	2	2	2	2	2	2	2	0	0

Abbreviations:
A = Assessment Monitoring Sample
A-NE = Assessment monitoring for nature and extent, wells sampled for arsenic, molybdenum, and selection-of-remedy parameters
-- = Not Sampled

Notes:
1. No sampling events are currently planned for MW-308 or MW-309. These wells are intended for groundwater elevation measurements only.
2. MW-303 had insufficient water for sampling during the April and October 2023 events.

Created by: NDK Date: 1/8/2018
Last revision by: NLB Date: 1/3/2024
Checked by: RM Date: 1/3/2024

Table 3. Water Level Summary
Interstate Power & Light - Lansing, Iowa / SCS Engineers Project #25223070.00

Well Number	MW1[4]	MW2	MW3[3]	MW4	MW5	MW6	MW11	MW11R	MW12	MW12P	MW13	MW14	MW15	TW17	TW18	TW19	MW-16	MW-18	MW-19	MW-22	MW-22P	MW20	MW301	MW302	MW302A	MW303	MW304	MW304A	MW305	MW306	MW306A	MW307	MW-307A	MW308	MW309
Top of Casing Elevation (feet amsl)	636.67	657.36	656.78	698.17	698.46	741.33	686.19	686.42	691.40	691.58	658.38	646.06	656.82	659.59	659.15	659.05	700.26	771.09	716.07	702.55	702.17	662.29	641.61	638.40	638.93	656.27	636.43	638.60	633.87	637.48	639.56	643.06	642.96	637.89	638.27
Screen Length (ft)	20	10	10	10	10	10	10	10	15	5	15	15	15	15	15	15	15	15	15	15	5	10	10	10	5	10	10	5	10	10	5	10	5	10	10
Top of Well Screen Elevation (ft)	626.50	620.50	600.00	650.00	630.00	656.00	657.96	646.94	657.70	627.98	649.48	636.96	640.82	649.39	650.55	648.95	662.18	669.23	651.69	665.27	625.14	648.79	624.01	626.90	594.93	637.97	630.43	593.60	627.87	621.48	589.56	633.06	597.96	627.89	626.27
Measurement Date																																			
May 11, 2001	632.77	628.53	629.29	653.61	654.82	663.12	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
March 8, 2002	627.95	620.21	620.94	650.57	651.80	661.71	653.60	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
February 19, 2004	NM	NM	NM	648.80	650.05	653.27	648.03	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
May 26, 2004	NM	NM	NM	652.89	654.15	664.29	652.09	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
August 23, 2004	NM	NM	NM	652.15	653.38	662.65	650.04	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
November 18, 2004	NM	NM	NM	650.81	652.04	663.88	648.18	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
May 5, 2005	NM	NM	NM	650.42	651.67	661.80	647.77	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
May 19, 2006	NM	NM	NM	650.43	651.66	661.78	DRY	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
May 30, 2007	NM	NM	NM	650.21	651.43	661.69	DRY	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 16, 2008	NM	NM	NM	653.99	655.24	664.55	DRY	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 3, 2009	NM	NM	NM	655.72	656.95	666.16	DRY	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 21, 2010	NM	NM	NM	652.27	653.51	663.08	DRY	646.41	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
May 4, 2011	NM	NM	NM	653.51	654.75	663.84	DRY	646.58	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 25, 2012	NM	NM	NM	651.77	653.03	662.83	DRY	646.53	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
October 17, 2012	627.33	620.03	NM[2]	650.73	651.97	662.10	AB	646.16	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
February 19-20, 2013	627.03	620.03	621.26	650.72	651.96	662.13	AB	645.42	650.31	NI	643.72	641.93	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 1, 2013	627.80	620.68	621.79	652.24	653.46	664.16	AB	646.21	651.71	NI	644.61	641.36	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
July 1, 2013	631.57	625.88	626.68	661.13	662.31	673.12	AB	648.73	653.66	NI	648.43	642.43	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 29, 2014	629.84	NM	NM	654.17	655.43	664.86	AB	646.96	651.62	651.33	645.97	641.95	633.83	648.74	647.26	648.08	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
May 29, 2014	629.75	624.37	624.50	653.53	653.81	664.30	AB	646.53	651.05	650.73	645.39	641.43	633.61	648.14	646.55	646.96	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 20, 2015	628.16	620.09	620.78	652.00	653.24	663.30	AB	645.93	650.32	650.05	643.73	642.02	633.85	647.79	646.35	646.97	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
December 10, 2015	NM	NM	NM	NM	NM	662.28	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NI	NI	NI	NI	648.27	623.54	627.88	NI	638.79	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 28, 2016	627.50	620.26	620.83	651.55	652.79	662.80	AB	645.96	650.05	650.00	643.56	641.56	634.71	647.78	NM[5]	646.80	NI	NI	NI	NI	NI	648.61	623.45	627.24	NI	638.15	NI	NI	NI	NI	NI	NI	NI	NI	NI
July 20, 2016	NM	NM	NM	NM	NM	663.21	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	649.86	624.76	628.60	NI	639.33	NI	NI	NI	NI	NI	NI	NI	NI	NI
October 27, 2016	NM	NM	NM	NM	NM	670.82	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	651.32	624.97	628.35	NI	638.65	NI	NI	NI	NI	NI	NI	NI	NI	NI
January 18, 2017	NM	NM	NM	NM	NM	666.28	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	650.18	624.09	627.32	NI	638.10	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 19-21, 2017	629.39	622.04	622.02	658.84	660.00	669.82	AB	648.24	653.68	653.40	647.61	643.01	634.50	649.87	649.03	649.01	660.45	669.88	652.12	668.38	667.45	651.71	624.70	628.98	NI	639.20	NI	NI	NI	NI	NI	NI	NI	NI	NI
June 19-20, 2017	NM	NM	NM	NM	NM	670.65	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	650.22	624.89	627.75	NI	638.77	NI	NI	NI	NI	NI	NI	NI	NI	NI
August 15, 2017	NM	NM	NM	NM	NM	670.61	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	649.58	624.09	627.28	NI	637.86	NI	NI	NI	NI	NI	NI	NI	NI	NI
October 16, 2017	NM	NM	NM	NM	NM	669.58	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	650.81	625.70	628.75	NI	638.79	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 16-17, 2018	628.63	620.82	617.50	AB	AB	667.64	AB	647.07	652.25	651.90	646.36	642.61	634.07	648.77	648.49	648.23	NM	NM	NM	NM	NM	650.77	624.29	628.98	NI	638.62	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 26, 2018	628.67	620.86	617.63	AB	AB	667.96	AB	647.47	651.75	652.54	646.38	645.46	634.14	648.99	648.35	648.00	656.61	667.79	650.19	666.28	665.17	651.18	624.56	628.75	NI	638.57	NI	NI	NI	NI	NI	NI	NI	NI	NI
June 4, 2018	NM	NM	NM	AB	AB	NM	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	624.62	628.27	NI	638.81	NI	NI	NI	NI	NI	NI	NI	NI	NI
October 8, 2018	NM	NM	NM	AB	AB	664.71	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	625.73	628.59	NI	637.32	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 15-16, 2019	630.95	632.16	628.40	AB	AB	672.78	AB	648.69	654.35	653.99	649.45	643.08	633.71	649.73	648.47	648.10	NM	672.64	654.55	671.05	669.22	652.57	629.19	629.99	NI	638.22	NI	NI	NI	NI	NI	NI	NI	NI	NI
June 20, 2019	NM	NM	NM	AB	AB	NM	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NM	623.61	NI	629.12	623.05	NI	NI	NI	NI	NI
October 2, 2019	NM	NM	NM	AB	AB	675.54	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	652.64	626.54	630.04	NI	638.03	623.79	NI	629.77	622.47	NI	NI	NI	NI	NI
December 5, 2019	NM	NM	NM	AB	AB	NM	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NM	NM	NI	NM	620.60	NI	NI	NI	NI	NI
February 5, 2020	NM	NM	NM	AB	AB	NM	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NM	NM	NI	NM	620.83	NI	NI	NI	NI	NI
May 20-21, 2020	629.38	620.61	621.38	AB	AB	674.47	AB	648.17	654.45	654.04	647.94	643.23	633.80	648.82	648.86	649.40	661.08	674.36	656.06	672.16	670.46	650.20	624.46	627.68	623.19	637.98	621.57	624.88	627.24	620.43	620.40	NI	NI	NI	NI
July 6, 2020	NM	NM	NM	AB	AB	NM	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	624.20	NM	NM	625.76	NM	NM	621.66	NI	NI	NI	NI
August 19-21, 2020	NM	NM	NM	AB	AB	674.64	AB	NM	NM	NM	NM	NM	NM	NM		NM	NM	NM	NM	NM	NM	650.88	625.02	627.53	623.52	638.22	621.75	NM	626.98	620.37	620.63	NI	NI	NI	NI
October 19-20, 2020	628.69	620.38	621.22	AB	AB	673.37	AB	647.71	653.94	653.57	647.50	642.96	633.44	649.67	648.76	648.14	660.42	673.35	654.95	671.21	669.55	649.50	624.42	627.14	623.03	636.96	621.40	624.41	626.54	619.92	620.17	NI	NI	NI	NI
February 23, 2021	NM	NM	NM	AB	AB	NM	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	625.04	NM	619.76	NM	NI	NI	NI	NI
April 7-9, 2021	628.84	620.55	621.36	AB	AB	671.08	AB	647.97	652.31	652.92	647.39	642.92	634.38	649.58	648.86	648.21	659.59	670.95	652.86	669.02	667.74	650.79	624.02	627.87	623.12	638.07	621.46	624.31	627.02	620.03	620.14	NI	NI	NI	NI
July 12-13, 2021	NM	NM	NM	AB	AB	NM	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	624.40	627.89	622.77	637.70	621.23	623.87	626.79	619.83	620.00	630.95	625.27	621.00	621.59
August 13, 2021	627.92	620.87	621.58	AB	AB	669.47	AB	647.22	652.57	652.31	646.79	NM	631.59	649.26	648.79	648.21	658.98	669.17	651.25	667.85	666.63	651.19	623.92	628.46	623.12	636.67	621.57	624.11	627.14	620.38	620.82	630.01	625.48	621.44	622.02
September 23, 2021	627.54	620.48	621.38	AB	AB	668.88	AB	647.28	652.46	652.12	646.53	642.79	632.44	649.12	648.65	647.96	658.72	668.58	650.77	667.12	665.96	650.46	624.33	627.65	622.85	637.62	621.20	623.74	626.44	619.95	620.28	631.74	625.28	621.09	621.92
October 25-27, 2021	627.51	620.48	621.19	AB	AB	668.14	AB	646.82	652.10	651.79	645.58	642.68	635.44	649.00	648.61	647.90	658.32	667.79	650.24	666.48	665.37	649.34	627.00	628.86	623.10	638.68	621.29	623.87	626.41	619.91	620.17	634.90	626.25	620.90	621.68
February 18, 2022	627.18	620.05	620.69	AB	AB	666.67	AB	647.19	651.83	651.42	645.95	642.67	638.17	648.93	648.58	647.83	657.69	666.36	649.16	665.06	664.10	649.81	629.46	629.87	623.09	641.17	621.19	623.59	626.42	619.59	619.90	638.27	626.12	620.66	621.42
April 4-7, 2022	627.65	620.66	621.36	AB	AB	667.14	AB	647.31	652.11	651.71	646.61	642.88	640.13	649.09	648.91	648.24	658.09	666.58	649.60	665.47	664.41	650.86	630.67	630.29	623.71	641.69	621.72	619.00	627.17	620.42	620.61	639.74	626.72	621.44	622.04
June 2, 2022	NM	NM	NM	AB	AB	NM	AB	646.78	651.73	651.37	645.41	642.58	635.53	NM	648.61	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
October 17-19, 2022	627.05	620.12	620.91	AB	AB	665.34	AB	646.34	651.12	650.79	643.88	642.34	639.04	648.57	648.39	647.63	656.97	664.97	647.72	663.92	663.06	AB	630.79	629.51	622.97	639.39	621.21	623.56	626.36	619.79	620.05	639.23	625.77	621.78	621.96
April 10-12, 2023	620.36	622.75	623.57	AB	AB	664.79	AB	643.72	650.75	649.09	DRY	641.64	DRY	647.87	648.50	647.91	656.93	664.44	640.69	663.48	662.88	AB	623.40	628.61	621.32	DRY	622.31	623.95	624.54	622.07	622.68	629.13	617.75	622.89	622.37
October 11, 2023	NM	620.04	620.72	AB	AB	NM	AB	644.47	649.65	649.28	DRY	NM	631.27	647.75	647.96	647.25	655.66	664.29	644.42	662.20	661.57	AB	621.79	625.84	622.22	629.96	620.63	623.05	NM	NM	NM	628.53	624.46	NM	NM
October 30-31, 2023	626.96	620.82	621.46	AB	AB	663.59	AB	644.40	649.67	649.37	637.87	NM	629.13	647.92	648.28	647.54	655.61	664.20	644.43	662.11	661.51	AB	622.20	627.05	622.91	629.98	621.21	623.57	626.89	620.41	621.02	628.65	625.01	621.39	622.20
Bottom of Well Elevation (ft)	606.50	610.50	590.00	640.47	620.36	646.03	647.59	636.94	642.70	622.98	634.48	621.96	625.82	634.39	635.55	633.95	647.18	654.23	636.69	650.27	620.14	638.79	614.01	616.90	589.93	627.97	620.43	588.60	617.87	611.48	584.56	623.06	592.96	617.89	616.27

Notes: NM = not measured NI = not installed AB = abandoned

1. The groundwater elevations recorded for MW11 on 2/19/04, 11/18/04, and 5/05/05 are not considered reliable due to a minimal quantity of water observed in the well. The actual water table elevation could be lower than the reported value.
2. MW-6 and MW-14 could not be located during this sampling event.
3. Repairs were completed at MW3 in July 2013. Elevations calculated for February, April, and July 2013 are estimates based on the old top of casing elevation (657.36 feet amsl). MW3 was re-surveyed on June 3, 2014.
4. MW1 was repaired in April 2013. Groundwater elevations measured before this date are calculated using the old top of casing elevation (637.60 ft amsl).
5. TW18 was damaged and could not be accessed for a water level measurement in April 2016. The well was repaired in July 2016. SW-4 was demolished and no longer exists.
6. On October 11, 2023, wells MW-1, MW305, MW-306, MW-306A, MW-308, MW-309 and SW-5 were roped off for plant demo and could not be accessed.

Created by: MDB Date: 8/9/2013
Last revision by: JR Date: 11/17/2023
Checked by: RM Date: 11/20/2023

I:\25223070.00\Deliverables\2023 LAN Fed CCR Annual Report\Tables\[Table 3 - GW Elevations Summary.xls]levels

Table 4A. Horizontal Gradients and Flow Velocity
Lansing Generating Station / SCS Engineers Project #25223070.00

Flow Path A - Shallow Water Table - Northwest					
Sampling Dates	**h1 (ft)**	**h2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/d)**
April 10-12, 2023	628.61	625.00	96	0.038	2.8
October 11, 2023	630.00	625.00	289	0.017	1.31

Flow Path B - Deep Potentiometric Surface - Southeast					
Sampling Dates	**h1 (ft)**	**h2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/d)**
April 10-12, 2023	621.00	617.75	148	0.022	1.66

Flow Path B - Deep Potentiometric Surface - Northwest					
Sampling Dates	**h1 (ft)**	**h2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/d)**
October 11, 2023	624.46	622.22	168	0.013	1.01

Well	K Values (cm/sec)	K Values (ft/d)
MW-6	N/A	N/A
MW-301	1.75E-03	5.0
MW-302	3.50E-03	9.9
MW-302A	2.03E-02	57
MW-303	2.19E-02	62
MW-304	1.68E-02	48
MW-304A	2.55E-03	7.2
MW-305	3.38E-03	9.6
MW-306	4.46E-02	126
MW-306A	3.04E-02	86
MW-307	4.03E-02	114
MW-307A	9.66E-03	27
Geometric Mean	1.1E-02	30

Assumed Porosity, n
0.40

Groundwater flow velocity equation: V = [K*(Δh/Δl)] / n

ft = feet
ft/d = feet per day
K = hydraulic conductivity
n = effective porosity
V = groundwater flow velocity
h1, h2 = point interpreted groundwater elevation at locations 1 and 2
Δl = distance between location 1 and 2
Δh/Δl = hydraulic gradient

Note:
1. See Figures 3, 4, 5, and 6 for velocity calculation flow path locations.

Created by: NDK Date: 9/26/2022
Last revision by: RM Date: 1/4/2024
Checked by: NLB Date: 1/4/2024

Table 4B. Vertical Gradients
Lansing Generating Station / SCS Engineers Project #25223070.00
January - December 2023

Vertical Hydraulic Gradients	MW302/MW302A		MW304/MW304A		MW306/MW306A		MW307/MW307A	
Shallow Well	MW302		MW304		MW306		MW307	
Screen midpoint[2] (feet amsl)	621.90		625.43		616.48		628.06	
Deep Well	MW302A		MW304A		MW306A		MW307A	
Screen midpoint (feet amsl)	592.43		591.10		587.06		595.46	
Measurement Date	**Distance between midpoints[2] (ft)**	**Vertical Gradient (ft/ft)**	**Distance between midpoints[2] (ft)**	**Vertical Gradient (ft/ft)**	**Distance between midpoints[2] (ft)**	**Vertical Gradient (ft/ft)**	**Distance between midpoints[2] (ft)**	**Vertical Gradient (ft/ft)**
February 23, 2021	NM	NM	NM	NM	NM	NM	NI	NI
April 7-9, 2021	29.5	-0.161	29.8	0.095	28.7	0.004	NI	NI
July 12-13, 2021	29.5	-0.174	29.7	0.089	28.6	0.006	31.5	-0.180
August 13, 2021	29.5	-0.181	29.9	0.085	28.9	0.015	31.1	-0.146
September 23, 2021	29.5	-0.163	29.7	0.085	28.7	0.012	31.9	-0.202
October 25-27, 2021	29.5	-0.195	29.8	0.087	28.6	0.009	33.5	-0.258
April 4-7, 2022	29.5	-0.223	30.0	-0.091	28.9	0.007	32.6	-0.399
October 17-19, 2022	29.5	-0.222	29.7	0.079	28.6	0.009	32.6	-0.413
April 10-12, 2023	29.5	-0.247	29.7	0.055	28.6	0.021	32.6	-0.349
October 11, 2023[3]	29.5	-0.123	29.4	0.082	28.6	0.021	32.6	-0.125

Notes:
1: A positive vertical gradient indicates upward groundwater flow. A negative gradient indicates downward flow.
2: MW-304 and MW-306 are water table wells, and their screens were not fully submerged during all 2022 sampling events. The effective screen midpoint for a water table well is calculated for each sampling event as the midpoint between the water table elevation and the screen bottom elevation, and this value is used to calculate Distance Between Midpoints.
3: October 2023 measurements for MW306/MW306A were collected on October 30-31, 2023.

NI: Not Installed
NM: Not Measured

Created by:	TK	Date:	10/23/2020
Last revision by:	NLB	Date:	12/28/2023
Checked by:	RM	Date:	1/3/2024

Table 5. Groundwater Analytical Results Summary
Lansing Generating Station / SCS Engineers Project #25223070.00

Parameter Name	UPL Method	UPL	GPS	Background Well		Compliance Wells				Delineation Well		Compliance Well	
				MW-6		MW-301		MW-302		MW-302A		MW-303	
				10/18/2022	4/11/2023	10/17/2022	4/10/2023	10/19/2022	4/11/2023	10/19/2022	4/11/2023	10/17/2022	4/10/2023
Groundwater Elevation, ft amsl				665.34	664.79	630.79	623.40	629.51	628.61	622.97	621.32	639.39	DRY
Appendix III													
Boron, ug/L	NP	110		<58	<76	260	440	780	480	190	--	590	--
Calcium, mg/L	P	73.7		70	79	67	48 B	<0.055	130	74	--	42	--
Chloride, mg/L	P	8.13		5.1	6.5	15	23	11	15	5.2	--	17	--
Fluoride, mg/L	P	0.304		<0.22	<0.38	<0.22	<0.38	<0.22	0.66 J	<0.22	--	<0.22	--
Field pH, Std. Units	P	7.98		7.40	7.15	8.10	8.05	6.87	7.19	7.28	7.38	7.66	--
Sulfate, mg/L	P	28		21	21	63	38	<2.0	<2.1	44	--	58	--
Total Dissolved Solids, mg/L	NP	580		250	350	280	180	520	530	310	--	200	--
Appendix IV		**UTL**	**GPS**										
Antimony, ug/L	NP	1.1	6	<0.69	<1.0	<0.69	<1.0	<0.69	<1.0	<0.69	--	<0.69	--
Arsenic, ug/L	NP	4.5	10	<0.75	<0.53	5.0	3.7	51	42	<0.75	<0.53	1.9 J	--
Barium, ug/L	P	50.2	2,000	49	49	160	73	790	800	50	--	230	--
Beryllium, ug/L	DQ	DQ	4	<0.27	<0.33	<0.27	<0.33	<0.27	<0.33	<0.27	--	<0.27	--
Cadmium, ug/L	DQ	DQ	5	<0.055	<0.10	<0.055	<0.10	<0.055	<0.10	<0.055	--	<0.055	--
Chromium, ug/L	NP	1.10	100	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	--
Cobalt, ug/L	NP	0.5	6	<0.19	<0.17	<0.19	<0.17	1.2	1.3	<0.19	--	<0.19	--
Fluoride, mg/L	NP	0.63	4	<0.22	<0.38	<0.22	<0.38	<0.22	0.66 J	<0.22	--	<0.22	--
Lead, ug/L	NP	1.9	15	<0.24	<0.24	<0.24	<0.24	0.39 J	<0.24	<0.24	--	<0.24	--
Lithium, ug/L	NP	4.9	40	<2.5	<2.5	8.7 J	5.8 J	<2.5	<2.5	<2.5	--	10	--
Mercury, ug/L	DQ	DQ	2	--	<0.14	--	<0.14	--	<0.14	--	--	--	--
Molybdenum, ug/L	NP	1.5	100	<1.2	<0.91	12	14	1.2 J	1.9 J	<1.2	<0.91	22	--
Selenium, ug/L	NP	5.8	50	<0.96	<1.4	<0.96	1.9 J	<0.96	2.9 J	<0.96	--	<0.96	--
Thallium, ug/L	NP	0.5	2	<0.26	<0.26	<0.26	<0.26	,0.26	<0.26	<0.26	--	<0.26	--
Radium 226/228 Combined, pCi/L	P	1.29	5	1.29	0.0554	0.830	0.521	4.33	1.07	0.371	--	0.512	--
Additional Parameters - Selection of Remedy													
Arsenic, dissolved, ug/L	UPL or GPS not applicable			---	--	--	--	50	--	--	--	--	--
Iron, dissolved, ug/L				<36	--	410 F1	--	40,000	--	55 J	--	46 J	--
Iron, ug/L				<36	--	620	--	43,000	--	<36	37 J	<36	--
Magnesium, ug/L				32,000	--	18,000	--	42,000	--	32,000	--	13,000	--
Manganese, dissolved, ug/L				<3.6	--	590	--	2,500	--	5.4 J	--	110	--
Manganese, ug/L				<3.6	--	640	--	2,300	--	<3.6	--	220	--
Molybdenum, dissolved, ug/L				--	--	--	--	--	--	--	--	--	--
Potassium, ug/L				930	--	3,200	--	3,900	--	900	--	3,100	--
Sodium, ug/L				4,100	--	14,000	--	19,000	--	6,800	--	15,000	--
Total Alkalinity, mg/L				300	--	230	--	540	--	290	--	120	--
Carbonate Alkalinity, mg/L				<4.6	--	<4.6	--	<4.6	--	<4.6	--	<4.6	--
Bicarbonate Alkalinity, mg/L				300	--	230	--	540	--	290	--	120	--

See Page 3 for abbreviations and notes.

Table 5. Groundwater Analytical Results Summary
Lansing Generating Station / SCS Engineers Project #25223070.00

Parameter Name	UPL Method	UPL	GPS	Delineation Wells													
				MW-304		MW-304A		MW-305		MW-306		MW-306A		MW-307		MW-307A	
				10/17/2022	4/10/2023	10/17/2022	4/10/2023	10/18/2022	4/11/2023	10/19/2022	4/11/2023	10/19/2022	4/11/2023	10/18/2022	4/10/2023	10/18/2022	4/10/2023
Groundwater Elevation, ft amsl				621.21	622.31	623.56	623.95	626.36	624.54	619.79	622.07	620.05	622.68	639.23	629.13	625.77	617.75
Appendix III																	
Boron, ug/L	NP	110		78 J	--	1,600	--	240	--	600	--	290	--	1100	1200	680	--
Calcium, mg/L	P	73.7		79	--	37	--	80	--	280	--	77	--	39	38	52	--
Chloride, mg/L	P	8.13		8.6	--	16	--	5.5	--	32	--	5.8	--	18	23	11	--
Fluoride, mg/L	P	0.304		<0.22	--	<0.22	--	<0.22	--	<0.22	--	<0.22	--	<0.22	<0.38	<0.22	--
Field pH, Std. Units	P	7.98		7.17	7.27	7.81	7.74	7.32	7.44	6.80	7.13	7.25	7.43	8.44	8.36	7.59	7.33
Sulfate, mg/L	P	28		14	--	69	--	3.6 J	--	500	--	34	--	120	45	27	--
Total Dissolved Solids, mg/L	NP	580		290	--	270	--	300	--	1,500	--	350	--	900	160	270	--
Appendix IV		**UTL**	**GPS**														
Antimony, ug/L	NP	1.1	6	<0.69	--	<0.69	--	<0.69	--	<0.69	--	<0.69	--	<0.69	<1.0	<0.69	--
Arsenic, ug/L	NP	4.5	10	<0.75	<0.53	<0.75	0.63 J	4.7	0.93 J	7.1	7.0	<0.75	<0.53	2.7	2.5	1.9 J	0.65 J
Barium, ug/L	P	50.2	2,000	49	--	29	--	230	--	390	--	62	--	280	230	100	--
Beryllium, ug/L	DQ	DQ	4	<0.27	--	<0.27	--	<0.27	--	<0.27	--	<0.27	--	<0.27	<0.33	<0.27	--
Cadmium, ug/L	DQ	DQ	5	<0.27	--	0.076 J	--	<0.055	--	<0.055	--	<0.055	--	<1.1	<0.10	<0.055	--
Chromium, ug/L	NP	1.10	100	<1.1	--	<1.1	--	<1.1	--	<1.1	--	<1.1	--	<1.1	<1.1	<1.1	--
Cobalt, ug/L	NP	0.5	6	<0.19	--	0.88	--	<0.19	--	0.30 J	--	<0.19	--	0.19 J	<0.17	0.65	--
Fluoride, mg/L	NP	0.63	4	<0.22	--	<0.22	--	<0.22	--	<0.22	--	<0.22	--	<0.22	<0.38	<0.22	--
Lead, ug/L	NP	1.9	15	<0.24	--	1.1	--	<0.24	--	<0.24	--	<0.24	--	<0.24	<0.24	<0.24	--
Lithium, ug/L	NP	4.9	40	<2.5	--	<2.5	--	<2.5	--	27	--	<2.5	--	13	11	<2.5	--
Mercury, ug/L	DQ	DQ	2	--	--	--	--	--	--	--	--	--	--	--	<0.14	--	--
Molybdenum, ug/L	NP	1.5	100	2.1	2.5	130	150	<1.2	1.1 J	<1.2	<0.91	<1.2	<0.91	25	7.8	6.6	7.6
Selenium, ug/L	NP	5.8	50	<0.96	--	<0.96	--	<0.96	--	<0.96	--	<0.96	--	<0.96	<1.4	<0.96	--
Thallium, ug/L	NP	0.5	2	<0.26	--	<0.26	--	<0.26	--	<0.26	--	<0.26	--	<0.26	<0.26	<0.26	--
Radium 226/228 Combined, pCi/L	P	1.29	5	0.069	--	0.296	--	1.20	--	0.693	--	1.18	--	1.51	0.165	0.683	--
Additional Parameters - Selection of Remedy																	
Arsenic, dissolved, ug/L	UPL or GPS not applicable			--	--	--	--	--	--	7.0	--	--	--	--	--	--	--
Iron, dissolved, ug/L				<36	--	<36	--	7,400	--	41,000	--	1,400	--	90 J	--	300	--
Iron, ug/L				<36	50 J	380	390	8,500	3,300	42,000	50,000	1,500	1,400	110	68 J	330	36 J
Magnesium, ug/L				34,000	--	14,000	--	30,000	--	46,000	--	32,000	--	11,000	--	24,000	--
Manganese, dissolved, ug/L				<3.6	--	<3.6	--	1,400	--	7,000	--	1,000	--	450	--	640	--
Manganese, ug/L				<3.6	--	31	--	1,300	--	5,500	--	940	--	430	--	610	--
Molybdenum, dissolved, ug/L				--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium, ug/L				1,400	--	540	--	1,500	--	8,300	--	1,000	--	2,900	--	2,000	--
Sodium, ug/L				6,300	--	49,000	--	7,000	--	140,000	--	9,100	--	24,000	--	28,000	--
Total Alkalinity, mg/L				330	--	180	--	360	--	800	--	350	--	100	--	270	--
Carbonate Alkalinity, mg/L				<4.6	--	<4.6	--	<4.6	--	<12	--	<4.6	--	<4.6	--	<4.6	--
Bicarbonate Alkalinity, mg/L				330	--	180	--	360	--	800	--	350	--	100	--	270	--

See Page 3 for abbreviations and notes.

Table 5. Groundwater Analytical Results Summary
Lansing Generating Station / SCS Engineers Project #25223070.00

4.4	Blue highlighted cell indicates the compliance well result exceeds the UPL (background) and the LOQ.
30.8	Yellow highlighted cell indicates the compliance well result exceeds the GPS.
17.0	Grayscale indicates additional parameters sampled for selection of remedy and evaluation of MNA.

Abbreviations:

UPL = Upper Prediction Limit
UTL = Upper Tolerance Limit
-- = Not Analyzed
µg/L = micrograms per liter
mg/L = milligrams per liter
LOD = Limit of Detection
LOQ = Limit of Quantitation
P = Parametric UPL with 1-of-2 retesting
DQ = Double Quantification Rule (not detected in background)

J = Estimated concentration at or above the LOD and below the LOQ.
B = Compound was found in blank and Sample
F1 = MS/MSD recovery exceeds control limits
* = UPL is below the LOQ for background sampling. For compliance wells, only results confirmed above the LOQ are evaluated as potential

Notes:

1. An individual result above the UPL or GPS does not constitute a statistically significant increase (SSI) above background or statistically significant increase above the GPS. See the accompanying letter text for identification of statistically significant results.
2. GPS is the United States Environmental Protection Agency (US EPA) Maximum Contamination Level (MCL), if established; otherwise, the value from 40 CFR 257.95(h)(2) is used.
3. Interwell UPLs calculated based on results from background well MW-6.
4. Interwell App III UPLs updated and App IV UTLs calculated in January 2023 based on background results through October 2022.

Created by:	NDK	Date:	4/10/2021
Last revision by:	EMS	Date:	7/27/2023
Checked by:	RM	Date:	7/27/2023
Sci QA/QC:	TK	Date:	1/14/2024

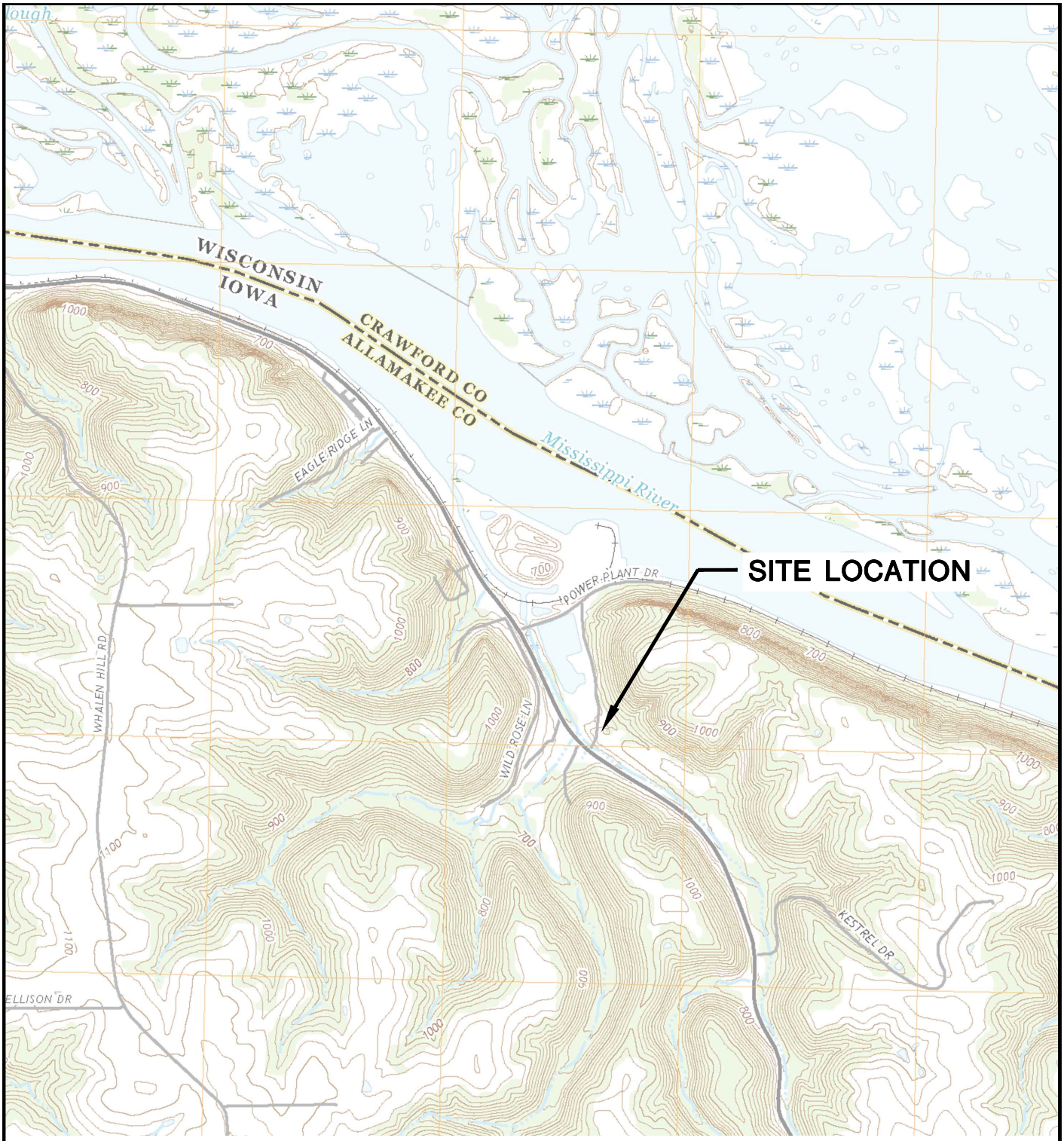
Table 6. Groundwater Field Data Summary
Lansing Generating Station / SCS Engineers Project #25223070.00

Well	Sample Date	Groundwater Elevation (feet)	Field Temperature (deg C)	Field pH (Std. Units)	Oxygen, Dissolved (mg/L)	Field Specific Conductance (umhos/cm)	Field Oxidation Potential (mV)	Turbidity (NTU)
MW-301	10/17/2022	630.79	12.5	8.10	0.08	526	-185	1.31
	4/10/2023	623.40	10.3	8.05	0.19	352	-150	0.00
MW-302	10/19/2022	629.51	14.5	6.87	0.03	1045	-186	23.3
	4/11/2023	628.61	6.9	7.19	0.29	871	-181	4.54
MW-302A	10/17/2022	622.97	11.6	7.28	6.27	620	106	1.39
	4/11/2023	621.32	11.2	7.38	3.72	459	99	0.00
MW-303	10/17/2022	639.39	23.1	7.66	0.11	397	26	2.07
MW-304	10/17/2022	621.21	11.9	7.17	6.97	643	169	0.01
	4/10/2023	622.31	8.9	7.27	7.75	482	196	0.00
MW-304A	10/17/2022	623.56	10.6	7.81	0.13	481	-25	77.9
	4/10/2023	623.95	10.6	7.74	0.21	423	116	28.8
MW-305	10/18/2022	626.36	15.7	7.32	0.06	607	-187	8.17
	4/11/2023	624.54	6.2	7.44	3.18	397	-92	1.71
MW-306	10/19/2022	619.79	15.4	6.80	0.07	2120	-173	0.98
	4/11/2023	622.07	12.0	7.13	0.27	1682	-166	4.12
MW-306A	10/19/2022	620.05	14.0	7.25	1.30	624	-91	3.21
	4/11/2023	622.68	13.7	7.43	0.67	486	-93	0.83
MW-307	10/18/2022	639.23	15.7	8.44	0.16	400	-176	4.34
	4/10/2023	629.13	8.0	8.36	0.28	312	-150	0.00
MW-307A	10/18/2022	625.77	11.4	7.59	0.10	519	-99	2.57
	4/10/2023	617.75	11.6	7.33	0.15	521	-14	0.00
MW-6	10/18/2022	665.34	9.7	7.40	8.16	523	47	0.60
	4/11/2023	664.79	9.9	7.15	8.38	596	141	0.97

Notes:
1. MW-303 had insufficient water for sample collection during the April 2023 sampling event.

Created by:	RM	Date:	7/26/2023
Last revision by:	RM	Date:	7/26/2023
Checked by:	EMS	Date:	7/27/2023

Figures



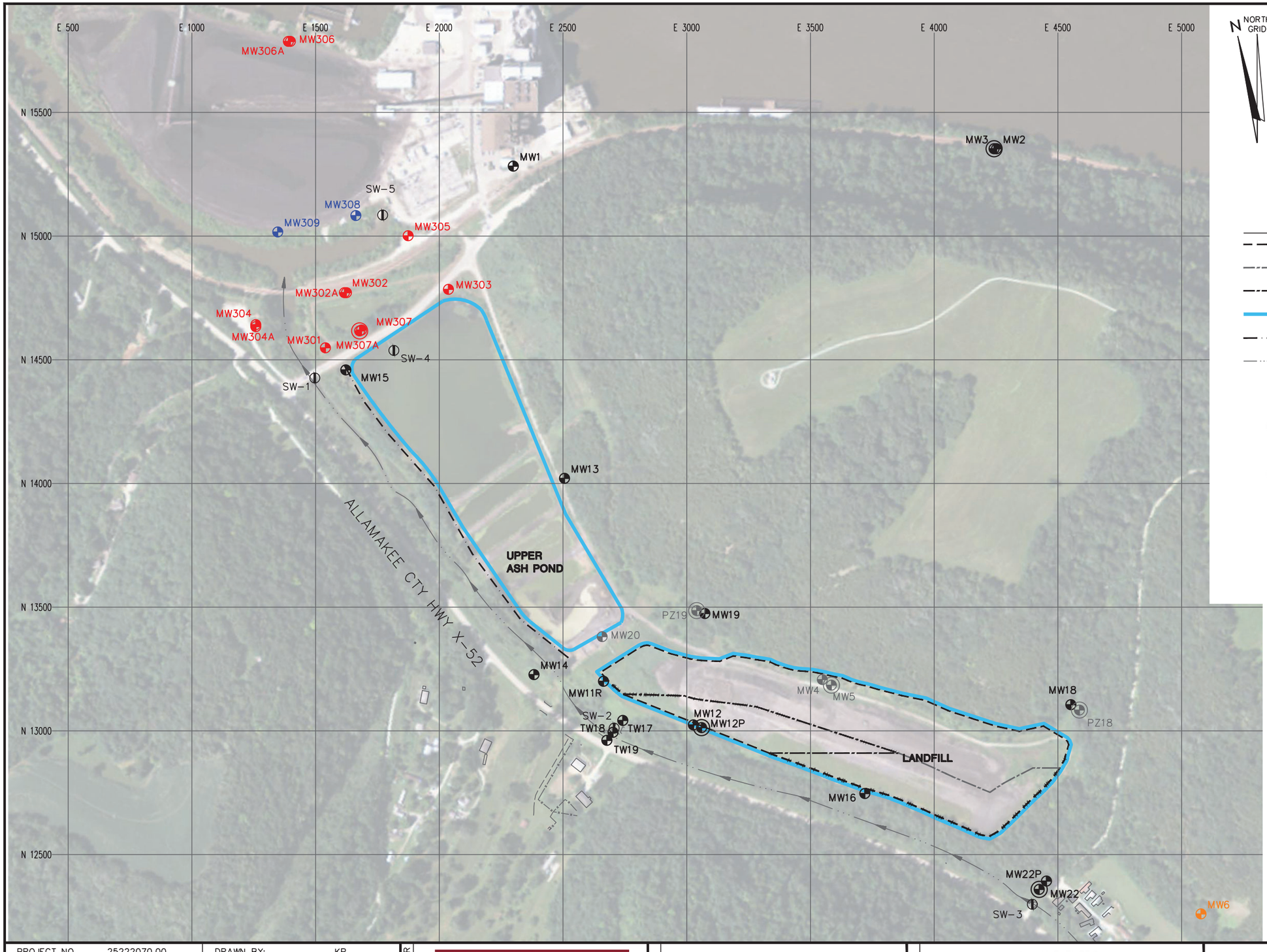
N

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	SITE LOCATION MAP	

PROJECT NO.	25219070.00	DRAWN BY:	BSS	ENGINEER: SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718–6751 PHONE: (608) 224–2830	FIGURE 1
DRAWN:	11/27/2019	CHECKED BY:	MDB		
REVISED:	11/27/2019	APPROVED BY:	TK 01/30/2020		

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



N NORTH GRID

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..

400 0 400

SCALE: 1" = 400'

PROJECT NO.	25222070.00	DRAWN BY:	KP
DRAWN:	05/26/2021	CHECKED BY:	JR
REVISED:	01/27/2023	APPROVED BY:	TK 01/30/2023

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 2

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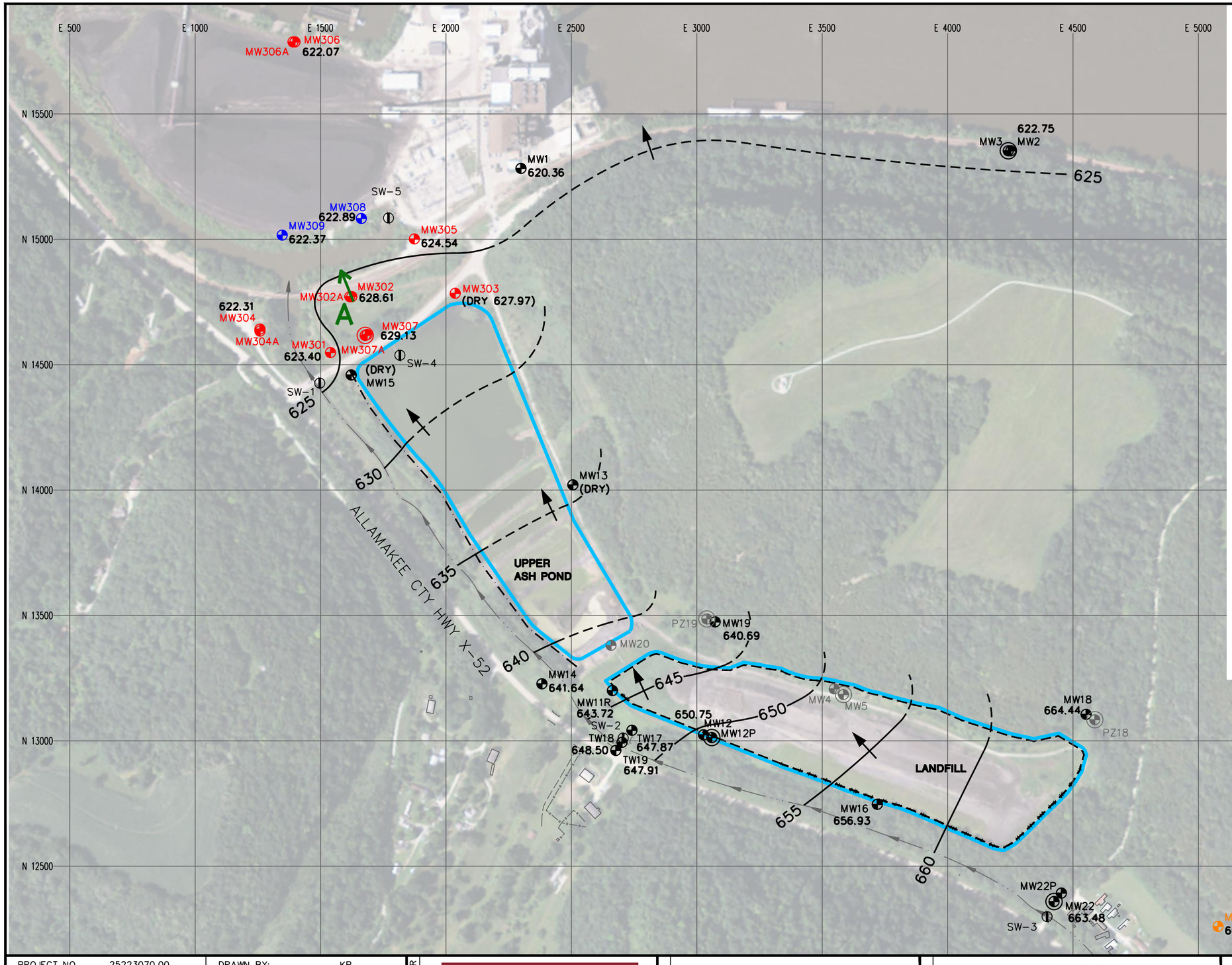

NORTH GRID

LEGEND

	APPROVED LIMITS OF WASTE
	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)
	CCR UNITS
(642.81)	SURFACE WATER ELEVATION
(NM)	NOT MEASURED
666.58	WATER TABLE ELEVATION
	WATER TABLE CONTOUR (DASHED WHERE INFERRED)
	FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4A)
	APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. MONITORING WELL LOCATIONS AND CCR UNIT LIMITS ARE APPROXIMATE.
2. SEE FIGURE 2 FOR ADDITIONAL LEGEND ITEMS AND NOTES.
3. THE BACKGROUND MONITORING WELL FOR THE LANSING POWER STATION IS MW6.

400 0 400

SCALE: 1" = 400'

PROJECT NO.	25223070.00	DRAWN BY:	KP
DRAWN:	06/28/2023	CHECKED BY:	NLB
REVISED:	01/04/2024	APPROVED BY:	TK 1/17/2024

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

WATER TABLE MAP
APRIL 10-12, 2023

FIGURE 3

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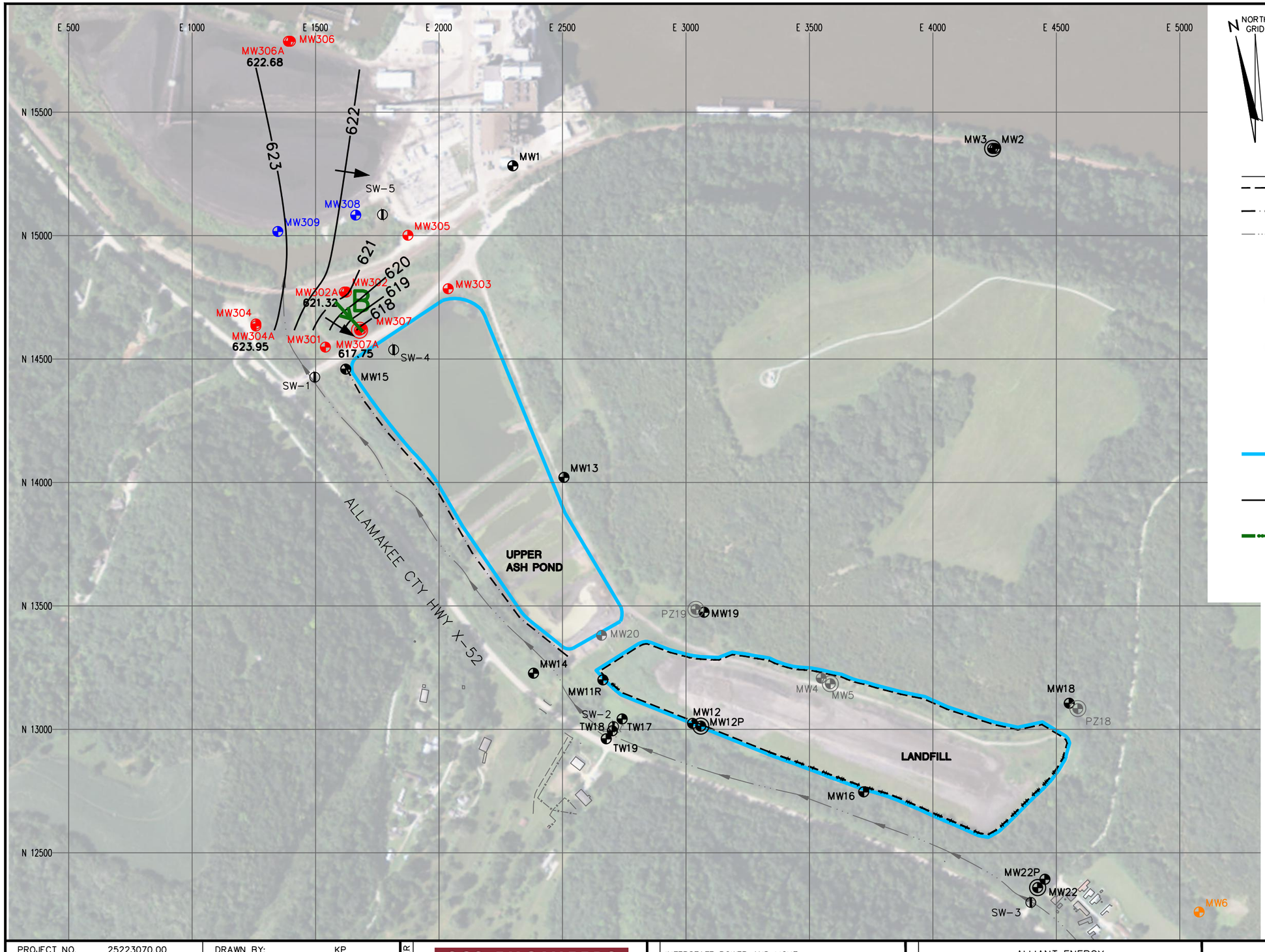


NOTES:

1. MONITORING WELL LOCATIONS AND CCR UNIT LIMITS ARE APPROXIMATE.
2. SEE FIGURE 2 FOR ADDITIONAL LEGEND ITEMS AND NOTES.
3. THE BACKGROUND MONITORING WELL FOR THE LANSING POWER STATION IS MW6.

400 0 400

SCALE: 1" = 400'

PROJECT NO.	25223070.00	DRAWN BY:	KP
DRAWN:	06/28/2023	CHECKED BY:	NLB
REVISED:	01/04/2023	APPROVED BY:	TK 1/17/2024

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

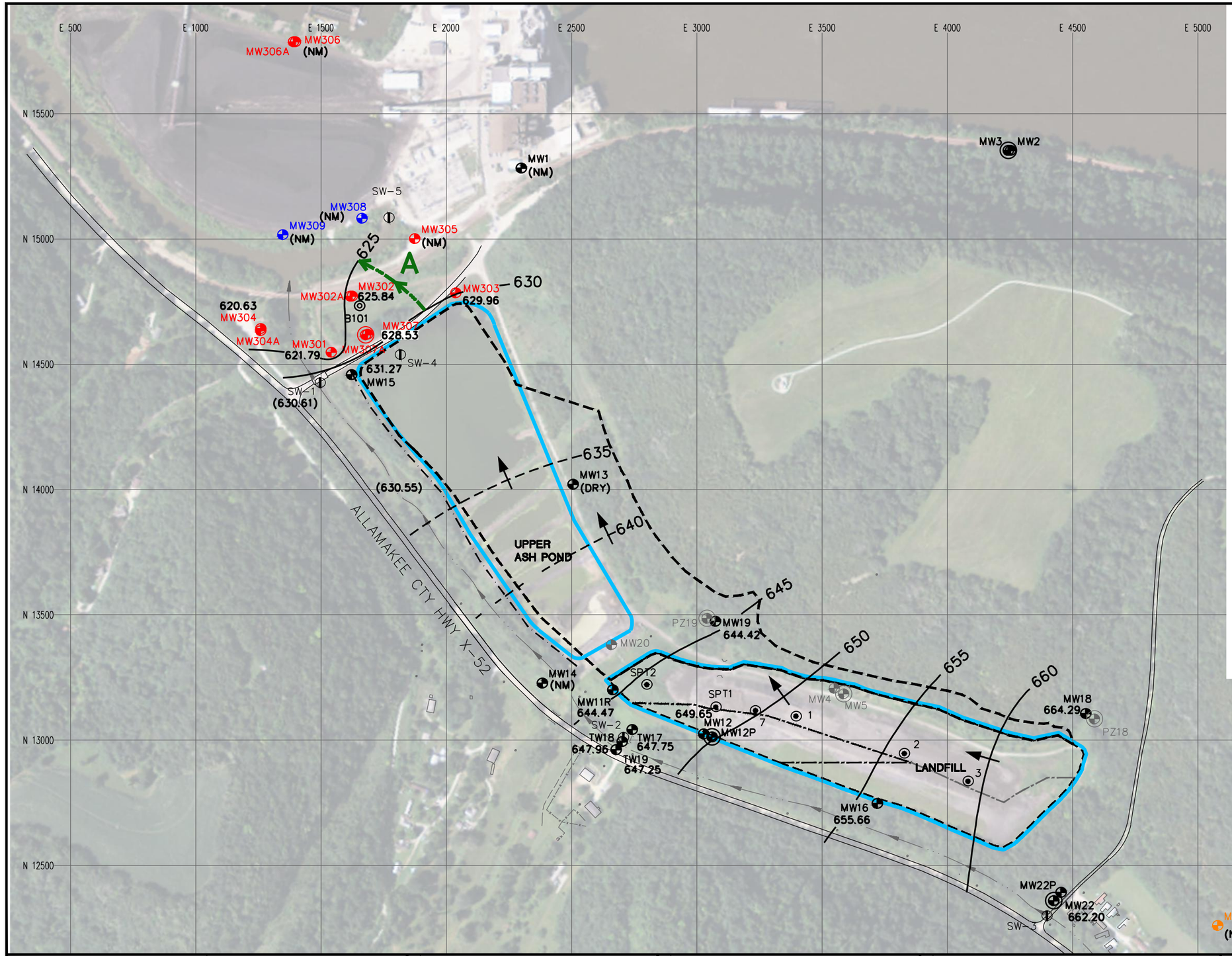
SITE

ALLIANT ENERGY
LANSING POWER STATION
LANSING, IOWA

POTENTIOMETRIC SURFACE MAP
APRIL 10-12, 2023

FIGURE
4

I:\25223070.00\Drawings\April 2023 Wtbl.dwg, 1/4/2024 11:55:07 AM



N NORTH GRID

LEGEND

	APPROVED LIMITS OF WASTE
	LIMITS OF PHASE 1 FINAL COVER
	LIMITS OF PHASE 2 FINAL COVER
	SLURRY WALL
	EXISTING STREAM
SW-1	EXISTING STAFF GAUGE
MW17	EXISTING MONITORING WELL
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)
	CCR UNITS
(NM)	NOT MEASURED
666.58	WATER TABLE ELEVATION
(630.61)	SURFACE WATER ELEVATION
	WATER TABLE CONTOUR (DASHED WHERE INFERRED)
	FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4A)
	APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. MONITORING WELL LOCATIONS AND CCR UNIT LIMITS ARE APPROXIMATE.
2. WATER LEVEL AT MW2 NOT USED IN WATER TABLE INTERPRETATION.
3. SEE FIGURE 2 FOR ADDITIONAL LEGEND ITEMS AND NOTES.

400 0 400

SCALE: 1" = 400'

PROJECT NO.	25223070.00	DRAWN BY:	KP
DRAWN:	10/20/2023	CHECKED BY:	NLB
REVISED:	01/17/2024	APPROVED BY:	TK 1/17/2024

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

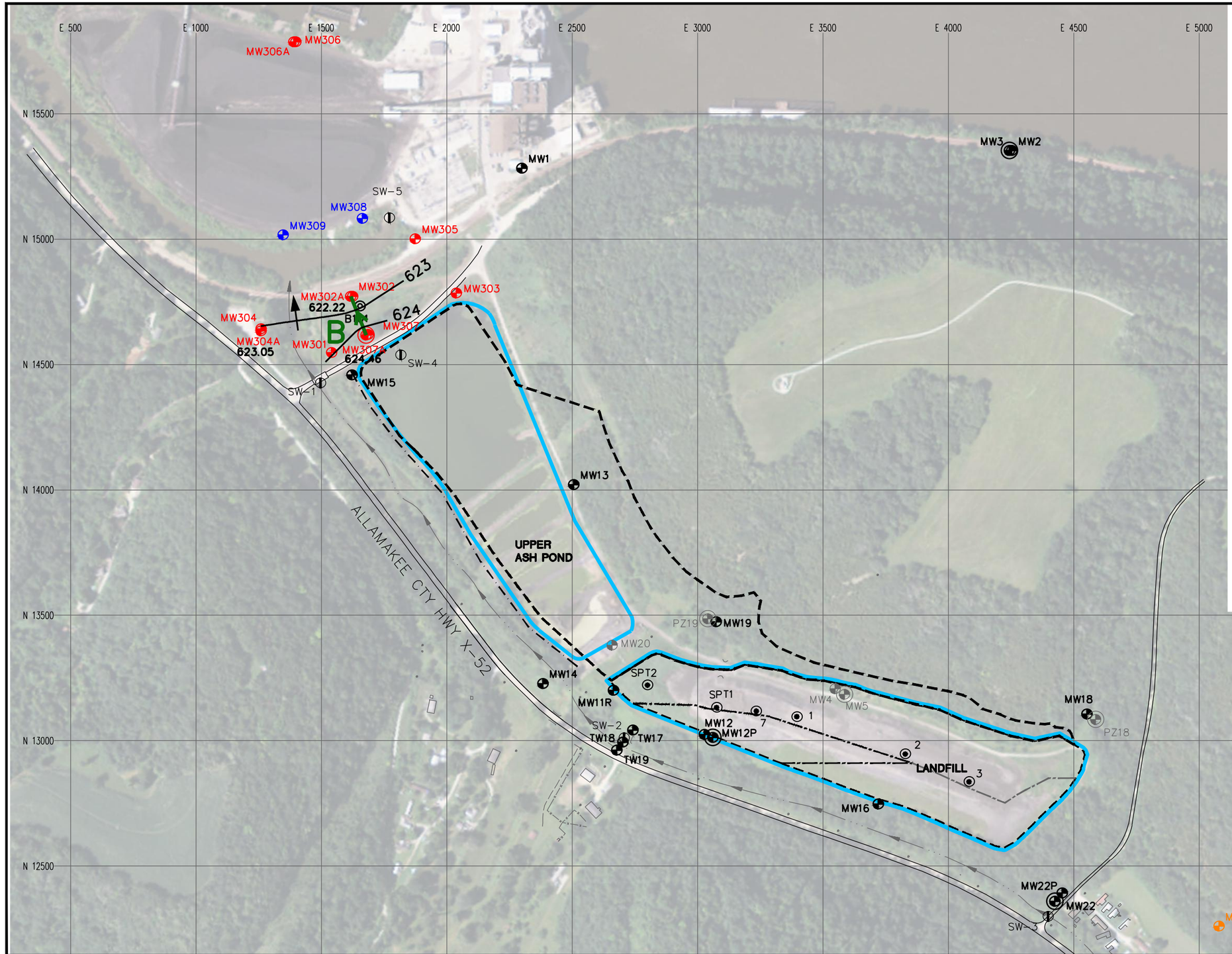
CLIENT: INTERSTATE POWER AND LIGHT
2320 POWER PLANT DRIVE
LANSING, IA 52151-9733

SITE: ALLIANT ENERGY
LANSING POWER STATION
LANSING, IOWA

WATER TABLE MAP
OCTOBER 11, 2023

FIGURE 5

I:\25223070.00\Drawings\Oct 2023 Wtbl.dwg, 1/17/2024 2:06:29 PM



NORTH GRID

LEGEND

	APPROVED LIMITS OF WASTE
	LIMITS OF PHASE 1 FINAL COVER
	LIMITS OF PHASE 2 FINAL COVER
	SLURRY WALL
	EXISTING STREAM
SW-1	EXISTING STAFF GAUGE
MW17	EXISTING MONITORING WELL
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)
	CCR UNITS
626.72	POTENTIOMETRIC SURFACE ELEVATION
	POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
	FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4A)
	APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. MONITORING WELL LOCATIONS AND CCR UNIT LIMITS ARE APPROXIMATE.
2. SEE FIGURE 2 FOR ADDITIONAL LEGEND ITEMS AND NOTES.
3. THE BACKGROUND MONITORING WELL FOR THE LANSING POWER STATION IS MW6.

400 0 400

SCALE: 1" = 400'

PROJECT NO.	25223070.00	DRAWN BY:	KP
DRAWN:	10/20/2023	CHECKED BY:	NLB
REVISED:	01/17/2024	APPROVED BY:	TK 1/17/2024

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

POTENTIOMETRIC SURFACE MAP
OCTOBER 11, 2023

FIGURE 6

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Appendix A

Regional Hydrogeologic Information

Table LAN-3 Regional Hydrogeologic Stratigraphy
Lansing Generating Station / SCS Engineers Project #25215053

Strategic Unit			Hydrogeologic Units	Type of Rock	Hydrologic Conditions	Thickness Range (ft)	Age of Rocks*
Quaternary		Recent and Pleistocene deposits	Surficial aquifers-Alluvium, Drift, Buried-channel	Sand and gravel interbedded with silt and clay	Mostly unconfined local aquifers, some artesian, small-to-large yields	0 – 305	0 – 2.8 million years (m.y.)
Devonian	Yellow Spring Group (Gp)	Lime Creek Formation (Fm)	Confining layers	Shale, some dolostone	Non-aquifer	0 – 50	365 – 405 m.y.
	Cedar Valley Gp	Lithograph City Fm Coralville Fm Little Cedar Fm	Silurian-Devonian aquifer	Limestone and dolostone, thin shales	Major aquifer, mostly artesian, moderate-to-large yields	0 – 400	
	Wapsipinicon Gp	Pinicon Ridge Fm Spillville Fm		Dolostone and limestone			
Silurian		Scotch Grove Fm Hopkinton Fm Blanding Fm Tete des Morts Fm		Dolostone, locally with much chert, local shale as cavern fillings			405 – 425 m.y.
Ordovician	Maquoketa Fm	Brainard Member Fort Atkinson Member Clermont Member Elgin Member	Maquoketa Fm, confining beds	Shale and dolostone, some chert	Non-aquifer to local aquifer, small-to-moderate yields	0 – 300	425 – 455 m.y.
			Fort Atkinson – Elgin aquifer				
	Galena Gp	Dubuque Fm Wise Lake Fm Dunleith Fm Decorah Fm	Galena aquifer	Limestone and dolostone, minor chert, shale at base and locally in upper part	Local aquifer, confined and unconfined, small-to-moderate yields	0 – 240	455 – 460 m.y.
		Platteville Fm Glenwood Fm	Decorah-Platteville-Glenwood confining beds	Limestone and shale	Non-aquifer	0 – 50	
		St. Peter Sandstone Prairie du Chien Gr	Cambrian-Ordovician aquifer	Sandstone	Major aquifer, mostly artesian, large yields	0 – 580	460 – 500 m.y.
				Dolostone, minor sandstone and chert			500 – 503 m.y.
Cambrian		Jordan Sandstone		Sandstone, dolomitic			
		St. Lawrence Fm Lone Rock (Franconia) Fm	Cambrian confining beds	Dolostone, silty	Non-aquifer	0 – 400	503 – 508 m.y.
				Fine, sandstone, siltstone, shale, and minor dolostone			
		Wenowoc (incl Ironton-Galesville sandstone) Fm Eau Claire Fm Mt. Simon Sandstone	Dresbach aquifer	Sandstone	Artesian aquifer, large yields	0 – 1,950	508 – 515 m.y.
				Fine sandstone, siltstone, and shale			
				Sandstone			
Pre-C		Undifferentiated crystalline rocks	Unknown	Igneous and metamorphic rocks	Unknown	Unknown	570 m.y. – > 2 billion years

*Age determinations as used on COSUNA charts published by AAPG-USGS
Source: "Water Resources of Southeast Iowa," Iowa Geologic Survey Water Atlas No. 4.

I:\25215053\Data\Tables\Table 2_Regional Hydrogeologic Stratigraphy.doc

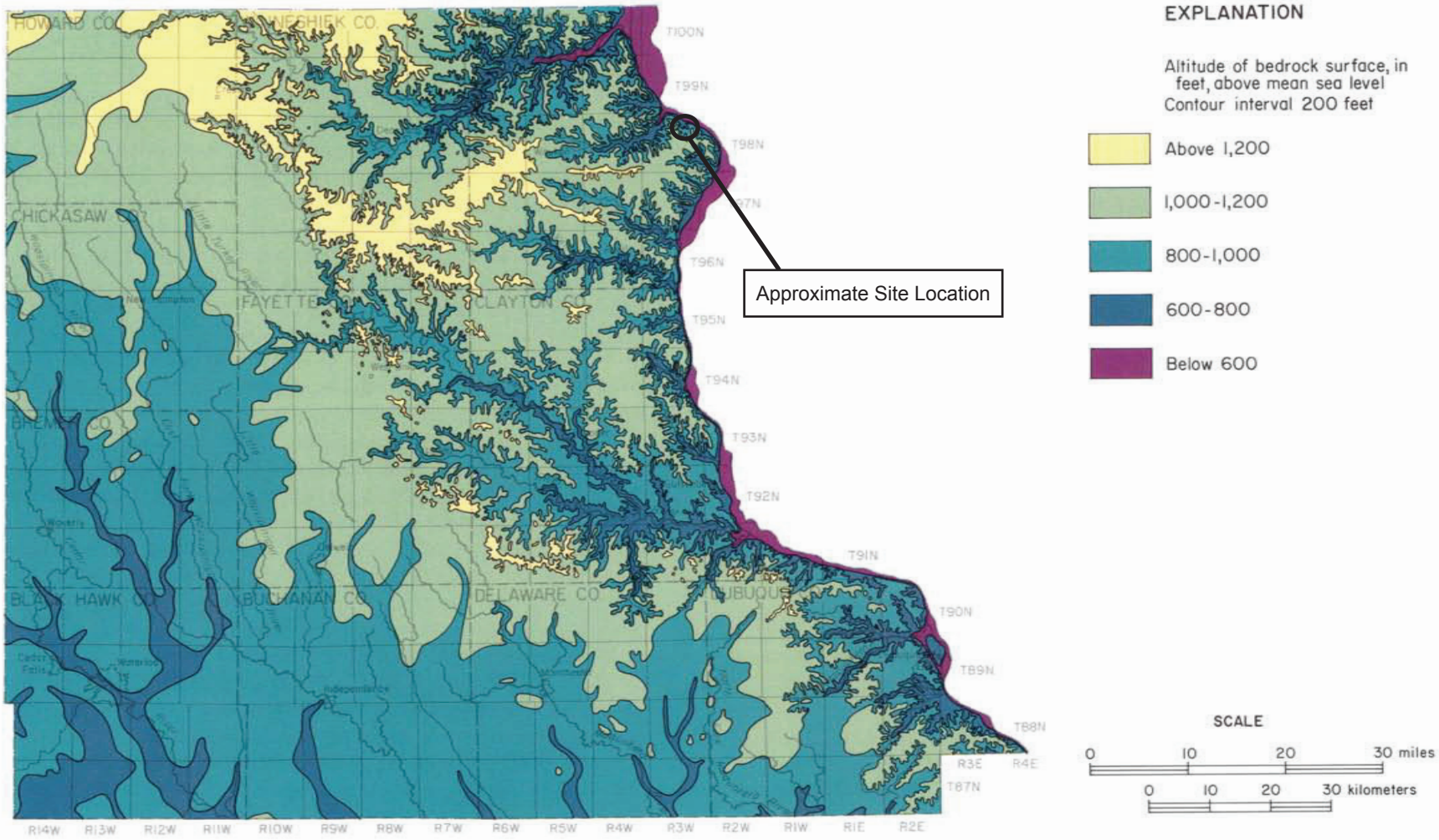


Figure 30. Altitude and configuration of the bedrock surface

Source: Horick, Paul J., Water Resources of Northeast Iowa, Iowa Department of Natural Resources Water Atlas Number 8, October

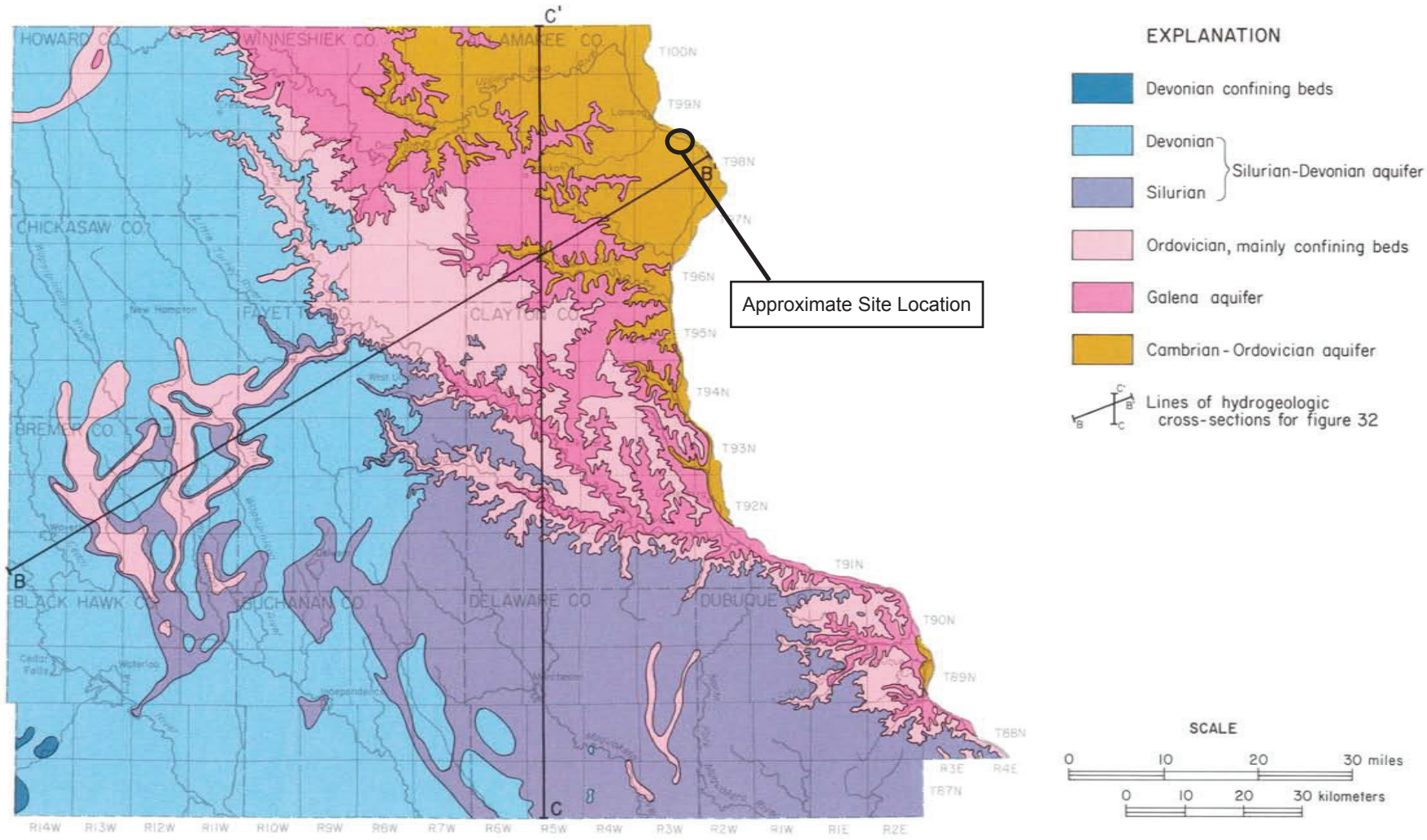


Figure 31. Bedrock hydrogeologic map

Source: Horick, Paul J., Water Resources of Northeast Iowa, Iowa Department of Natural Resources Water Atlas Number 8, October

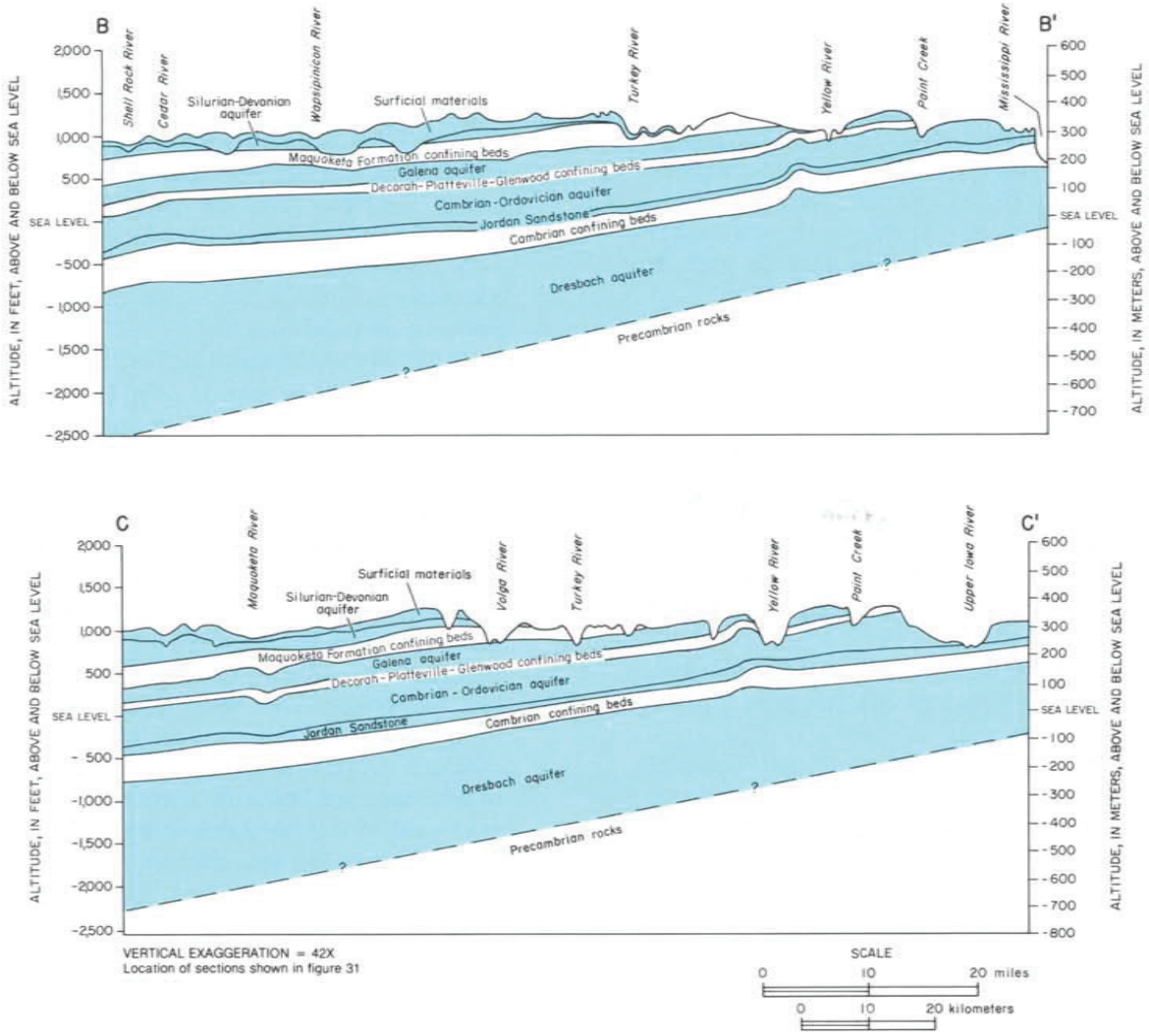


Figure 32. Hydrogeologic cross-sections

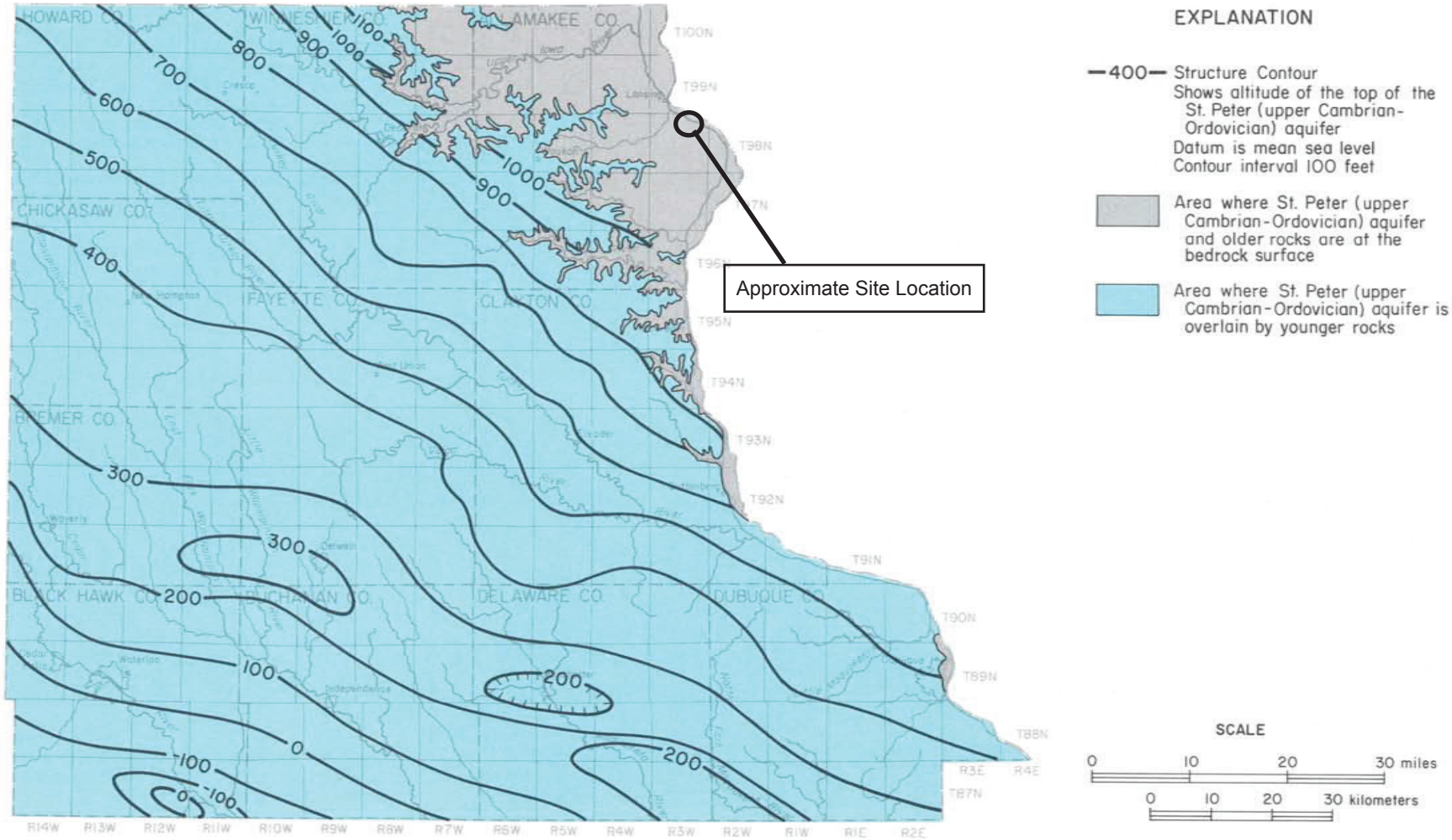


Figure 38. Altitude of the top of the St. Peter (upper Cambrian-Ordovician) aquifer

Source: Horick, Paul J., Water Resources of Northeast Iowa, Iowa Department of Natural Resources Water Atlas Number 8, October

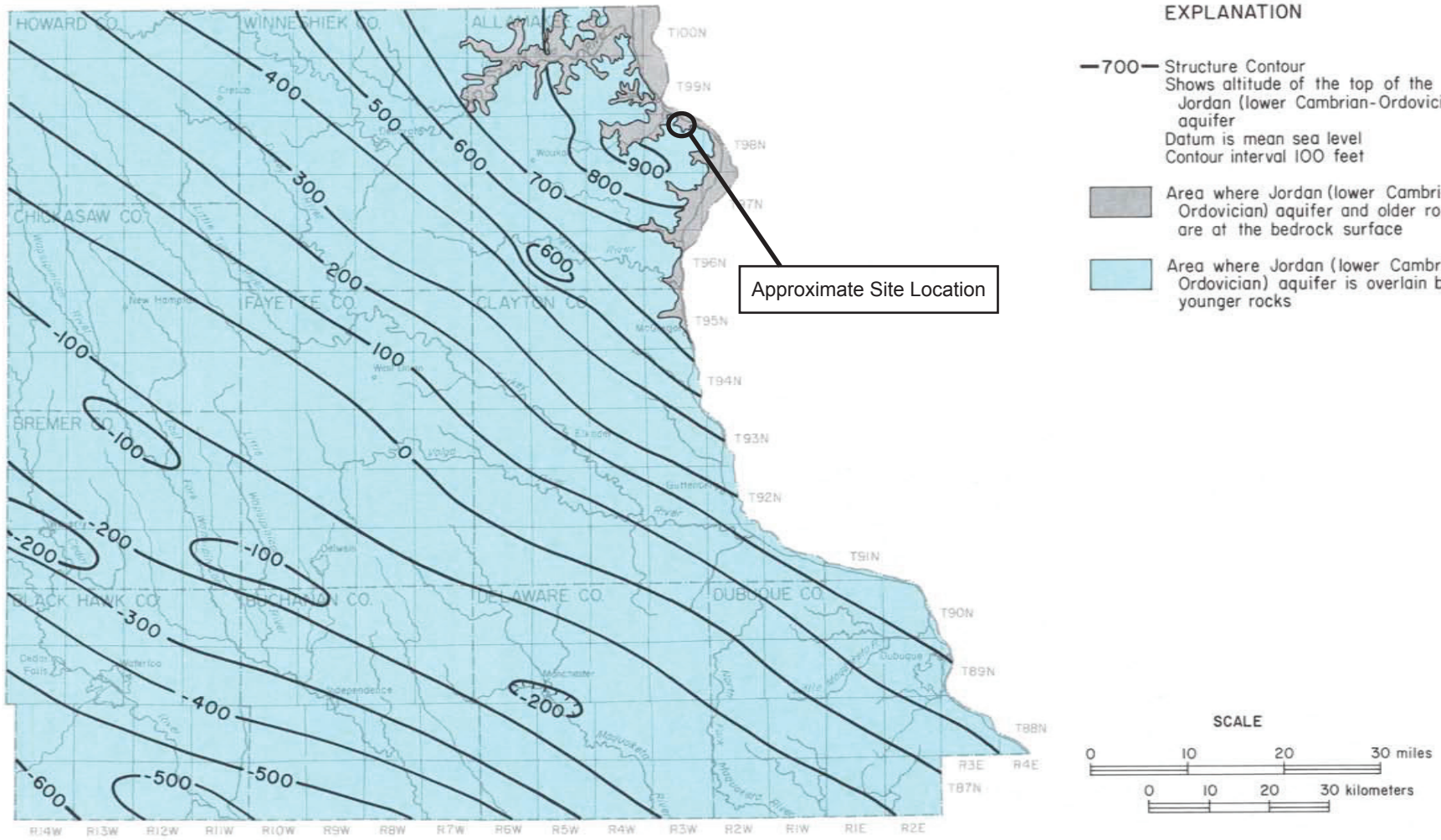


Figure 39. Altitude of the top of the Jordan (lower Cambrian-Ordovician) aquifer

Source: Horick, Paul J., Water Resources of Northeast Iowa, Iowa Department of Natural Resources Water Atlas Number 8, October

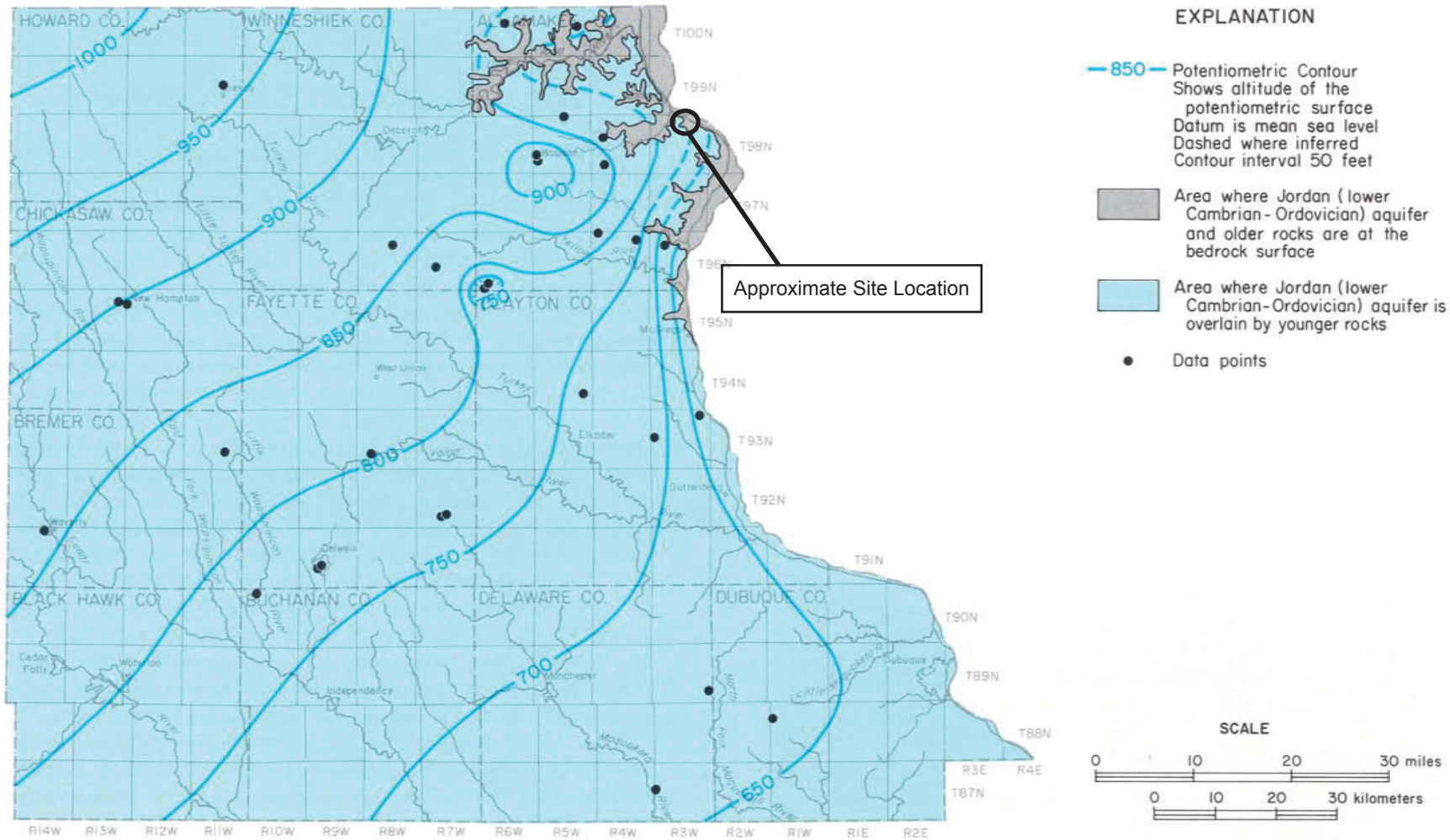


Figure 56. Potentiometric surface of the Jordan (lower Cambrian-Ordovician) aquifer

Source: Horick, Paul J., Water Resources of Northeast Iowa, Iowa Department of Natural Resources Water Atlas Number 8, October

Appendix B

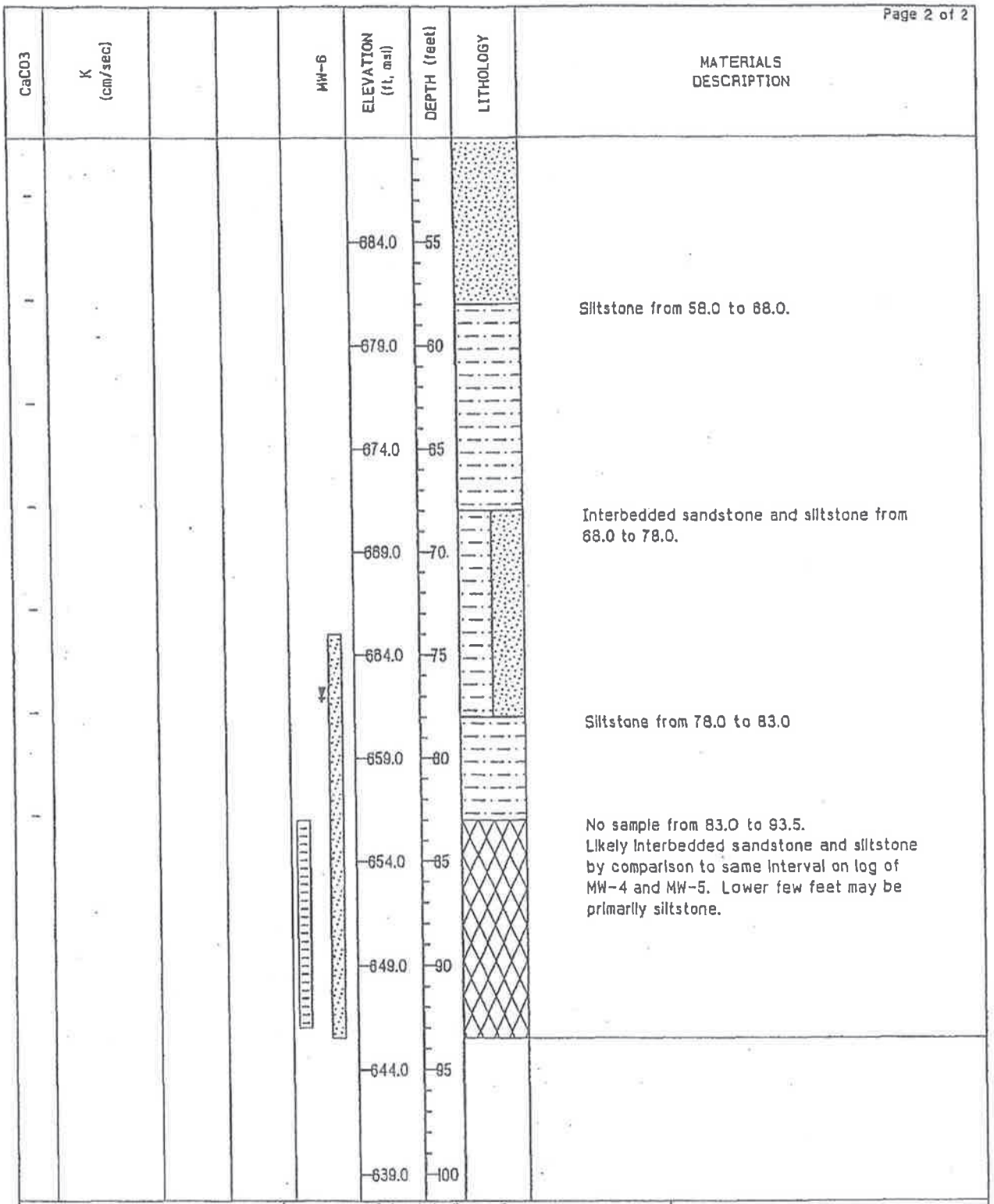
Boring Logs and Well Construction Documentation

CaCO3	K (cm/sec)			MW-6	ELEVATION (ft, msl)	DEPTH (feet)	LITHOLOGY	MATERIALS DESCRIPTION
					734.0	5		0.0 to 6.0 SILT Topsoil developed in silt from 0.0 to 1.5. Topsoil is dark brown. Clayey silt, trace sand is loess or colluvium (slopewash) derived from loess. Medium brown, changing gradually to yellow brown below 5.0.
					729.0	10		6.0 to 37.0 TALUS Light brown sandy silt with dolomite chunks.
					724.0	15		
					719.0	20		
					714.0	25		
					709.0	30		
					704.0	35		
					699.0	40		37.0 to 93.5 INTERBEDDED SANDSTONE AND SILTSTONE Sandstone is fine-grained, with quartz silt matrix, glauconitic. Siltsone contains minor amount of very fine quartz sand and glauconite. Sandstone is laminated light greenish gray with creamy color. Siltstone is light greenish gray. Sandstone from 37.0 to 58.0.
					694.0	45		
					689.0	50		

Howard R. Green Company
CONSULTING ENGINEERS

PROJECT Interstate Power Company
PROJECT NUMBER 717680-J
SURFACE ELEVATION 739.3 Feet MSL
TOTAL DEPTH OF HOLE 93.5 Feet

LOG OF MW-6
LOCATION Lansing, Iowa
GEOLOGIST Barbara Torney



Howard R. Green Company
CONSULTING ENGINEERS

PROJECT Interstate Power Company
PROJECT NUMBER 717680-J
SURFACE ELEVATION 739.3 Feet MSL
TOTAL DEPTH OF HOLE 93.5 Feet

LOG OF MW-6
LOCATION Lansing, Iowa
GEOLOGIST Barbara Torney

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL- Lansing Generating Station SCS#: 25215135.70		B-301

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Mike Mueller Cascade Drilling	11/2/2015	11/2/2015	hollow stem auger

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-301	Feet	639.4 Feet	8.0 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,744 N, 5,541,108 E S/C/N
NW 1/4 of SW 1/4 of Section 2, T 98 N, R 3 W
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S1	23	10 31 38 48	1–4	POORLY GRADED SAND, medium grained, very dark gray brown (10YR 3/2).	SP					M				
S2	24	32 47 50	5–6	POORLY GRADED SAND WITH SILT, medium grained, dark yellowish brown (10YR 3/4).	SP-SM					M				
S3	22	18 33 47 43	7–9	POORLY GRADED SAND WITH SILT AND GRAVEL, medium grained sand, large grained gravel, dark yellowish brown (10YR 3/6).	SP-SM					M				
S4	24	36 46 50	10–11	POORLY GRADED SAND WITH SILT, medium grained, dark yellowish brown (10YR 3/6).						S				Water @ 10 ft bgs
S5	22	13 9 7 10	12–14		SP-SM					S				
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel: 608-224-2830
Kyle Mueller	SCS Engineers 2830 Dairy Drive Madison, WI 53718	Fax:

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number B-301

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S6	20	3 2 4	16	SILT, black (10YR 3/1).	ML					S				
			17											
S7	24	2 2 2 2	18	SILT WITH SAND, black (10YR 3/1).	ML					S				
			19											
S8	24	2 2 4	20	POORLY GRADED SAND WITH SILT, black (10YR 3/1).	SP-SM					S				
			21											
			22											
S9	24	2 9 12 14	23	SILT, dark olive gray (5Y 3/2).	ML					S				
			24											
			25											
			26	End of Boring at 26 ft bgs.										

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Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL- Lansing Generating Station SCS#: 25215135.70		B-302

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Mike Mueller Cascade Drilling	11/4/2015	11/4/2015	hollow stem auger

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-302	Feet	635.9 Feet	8.0 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,929 N, 5,541,179 E S/C/N
NW 1/4 of SW 1/4 of Section 2, T 98 N, R 3 W
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	POORLY GRADED SAND, medium grained, dark grayish brown (10YR 4/2).										
S1	24	6 14 17 19	2 3		SP					M				
			4 5											
S2	24	26 45 50	6	SANDY SILT, trace small gravel, black (10YR 3/1).						M				
S3	24	12 13 10 8	7 8							M				
			9 10		ML									
S4	11	9 11 13 12	11	Large gravel						S				Saturation @ 11 ft bgs
			12											
S5	8	32 23 30 36	13	Large gravel						S				
			14 15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm SCS Engineers
2830 Dairy Drive Madison, WI 53718
Tel: 608-224-2830
Fax:

Boring Number B-302 Page 2 of 2

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
S6	24	5 5 6 8	16	SANDY SILT, trace small gravel, black (10YR 3/1). *(continued)*	ML					S				
			17											
S7	18		18	Silt, Black (10YR 3/1).	ML					S				
			19											
			20	End of Boring at 20 ft bgs.										

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL - Lansing Generating Station SCS#: 25218221.00		MW-302A

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	12/16/2019	12/17/2019	Rotosonic

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			13.01 Feet	636.2 Feet	6 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3957930.08 N, 5541186.04 E S / C / N
SW 1/4 of NW 1/4 of Section 02 , T 98 N, R 03 W
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Hydrovac to 9' to check for utilities.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
S1	46"		9	POORLY GRADED SAND with silt, clay and trace gravel, dark gray.	SP					W				
			10											
			11	SILT, gray, trace gravel.	ML									
			12											
			13	SILTY GRAVEL WITH SAND, gray, sand is fine to medium grained, gravel is subangular to angular.	GM									
			14											
S2	39"		15							W				
			16											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Firm SCS Engineers Tel: Fax:

Boring Number MW-302A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			17	SILTY GRAVEL WITH SAND, gray, sand is fine to medium grained, gravel is subangular to angular. *(continued)*	GM									
			18	SILT, dark gray, trace roots.										
			19											
			20		ML									
S3	48"		21							W				
			22	LEAN CLAY, dark gray, roots.										
			23											
			24											
			25		CL									
S4	40"		26	Same but dark brown.						W				
			27											
			28											
			29	SILTY SAND, gray to dark gray, fine to medium grained.										
			30		SM									
			31	LEAN CLAY, tan with yellow to brown mottling and gray layers, trace silt.										
S5	48"		32		CL					W				
			33	LEAN CLAY, reddish brown, massive, very dense.										
			34											
			35		CL									
			36	LEAN CLAY, gray.										
S6	48"		37							W				
			38		CL									
			39	POORLY GRADED SAND, brown, fine to medium grain, trace gravel.										
			40											
			41		SP									
S7	48"		42	Same with trace shells						W				

Boring Number MW-302A

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			43	POORLY GRADED SAND, brown, fine to medium grained, trace gravel. *(continued)*	SP									
			44	SILTY GRAVEL, light brown, subangular.	GM									
			45											
			46	LEAN CLAY, mostly light brown, trace gray, trace silt.										
S8	48"		47		CL					W				
			48											
			49	SILTY GRAVEL WITH SAND, light brown, gravel is subangular.	GM									
			50	End of boring at 50 feet.										

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL- Lansing Generating Station SCS#: 25215135.70		B-303

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Mike Mueller Cascade Drilling	11/2/2015	11/2/2015	hollow stem auger

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-303	Feet	653.9 Feet	8.0 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,857 N, 5,541,622 E S/C/N
NW 1/4 of SW 1/4 of Section 2, T 98 N, R 3 W
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	SILTY SAND, very dark gray (5Y 3/1).	SM									
S1	24	5 16 17 24	3	POORLY GRADED SAND, medium grained, dark grayish brown (10 YR 4/2).	SP					M				
S2	24	11 8 10	6							M				
S3	24	11 38 50	8	POORLY GRADED SAND , medium grained, grayish brown (2.5Y 5/2).						M				
S4	18	16 35 50	11		SP					M				
S5	16	27 50 50	13							M				
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm SCS Engineers
2830 Dairy Drive Madison, WI 53718
Tel: 608-224-2830
Fax:

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number B-303 Page 2 of 2

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S6	0	38 50	16	POORLY GRADED SAND , medium grained, grayish brown (2.5Y 5/2). *(continued)*						M				Rock in Spoon
			17		SP									
S7	18	17 25 40 47	18							S				Saturation @17 ft bgs.
			19											
			20	POORLY GRADED SAND, medium grained, very dark gray (5Y 3/1).										
S8	17	37 48 44	21							S				
			22											
S9	18	11 24 26 27	23		SP					S				
			24											
			25											
S10	24	37 50	26							S				
			27	End of Boring at 27 ft bgs.										

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL Lansing Generating Station SCS#: 25218221.00		MW304

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Eric Wetzel Roberts Environmental Drilling, Inc.	5/15/2019	5/15/2019	4.25" HSA

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW304	623.61 Feet MSL	635.5 Feet MSL	8.5 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,893 N, 5,540,876 E S/C/N
SE 1/4 of NE 1/4 of Section 3, T 98 N, R 3 W
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	12	3 6 3 3	1–2	SILT, mottled, (10YR 3/2), some black coal looking material.	ML					M				
	18	1 2 2 1	3–4	LEAN CLAY, (10YR 4/3), soft, some organic material.	CL					W				
	12	2 2 3 2	5–6	SILT, (10YR 2/2), uniform, trace fine sand and clay.	ML					M				
	18	1 1 3 2	7–8							W				
	18	1 2 1 1	9–10	POORLY GRADED SAND, fine to coarse, (10YR 3/4), (Alluvial).	SP					W				
	12	0 0 1 1	11–12							W				
	12	0 0 1 1	13–14							W				
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature for Zach Watson
Firm SCS Engineers
2830 Dairy Drive, Madison, WI 53718
Tel:
Fax:

Boring Number MW304 Page 2 of 2

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
		0 0 1 1	16	POORLY GRADED SAND, fine to coarse, (10YR 3/4), (Alluvial). *(continued)*						W				
			17	Same as above but more coarse, (2.5YR 5/4), trace silt.	SP									
		2 5 6 6	18							W				
			19											
			20	End of Boring at 20 feet.										

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL - Lansing Generating Station SCS#: 25218221.00		MW-304A

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	12/18/2019	12/19/2019	Rotosonic

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			10.7 Feet	635.6 Feet	6 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3957884.99 N, 5540876.5 E S / C / N
SE 1/4 of NE 1/4 of Section 03 , T 98 N, R 03 W
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Hydrovac to 9' to check for utilities.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10	SILT, grayish brown, toots and sticks.	ML									
			11	POORLY GRADED SAND WITH SILT AND GRAVEL, fine to medium grained, reddish brown.										
S1	49"		12		SP-SM					W				
			13											
			14	POORLY GRADED SAND, reddish brown, fine to medium grained.										
			15		SP									
			16											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm SCS Engineers Tel: Fax:

Boring Number MW-304A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			17	POORLY GRADED SAND, reddish brown, fine to medium grained. *(continued)*										
S2	21"		18							W				
			19		SP									
			20	Same but light brown, mostly fine grained.										
			21											
			22											
S3	59"		23							W				
				SANDY SILT, brown, fine grained.										
			24											
			25											
			26		ML									
			27											
S4	24"		28							W				
			29											
			30	SILTY SAND, light brown, fine grained.										
			31											
			32											
S5	30"		33		SM					W				
			34											
			35											
			36	POORLY GRADED SAND, light brown, fine to medium grained.										
			37											
S6	57"		38							W				
			39		SP									
			40											
			41											
				POORLY GRADED SAND, orange, fine grained.	SP									
			42	SANDY SILT WITH GRAVEL, sand is fine grained.	ML									

Boring Number MW-304A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
S7	54"		43 44	SANDY SILT WITH GRAVEL, sand is fine grained.*(continued)*	ML					W				
S8	9"		45 46	POORLY GRADED SAND, light brown, fine grain, trace coarse grained.	SP					W				
S9	48"		47 48 49 50 51	SANDY SILT WITH GRAVEL, light brown with trace yellow, fine grained. End of boring at 51 feet.	ML					W				

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL Lansing Generating Station SCS#: 25218221.00		MW305

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Eric Wetzel Roberts Environmental Drilling, Inc.	5/16/2019	5/16/2019	4.25" HSA

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW305	629.12 Feet MSL	631.8 Feet MSL	8.5 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,958,109 N, 5,541,533 E S/C/N
SE 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Hydrovaced to 9.5 feet.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10	FAT CLAY, dark greenish gray, (GLEY 13/10Y), soft, trace red sand, wood pieces and roots.										
	24	1 1 1 1	11		CH					W				
			12											
	24	0 0 0 2	13							W				
			14	Sand seams at 13.5 and 14.5 feet.										
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] for Zach Watson
Firm SCS Engineers
2830 Dairy Drive, Madison, WI 53718
Tel:
Fax:

Boring Number MW305 Page 2 of 2

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
				FAT CLAY, dark greenish gray, (GLEY 13/10Y), soft, trace red sand, wood pieces and roots. *(continued)*	CH					W				
			16	End of Boring at 16 feet.										

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL Lansing Generating Station SCS#: 25218221.00		MW306

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Eric Wetzel Roberts Environmental Drilling, Inc.	5/16/2019	5/16/2019	4.25" HSA

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW306	623.05 Feet MSL	636.7 Feet MSL	8.5 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,958,977 N, 5,541,203 E S/C/N
NE 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Hydrovaced to 12 feet.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10											
			11											
			12											
	12	1 2 4 3	13	POORLY GRADED SAND, medium to coarse, rusty in color, (10YR 4/6), trace fine silt.	SP					W				
			14											
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature for Brad Watson

Firm SCS Engineers
2830 Dairy Drive, Madison, WI 53718

Tel:
Fax:

Boring Number MW306 Page 2 of 2

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	18	1 2 2 4	16	POORLY GRADED SAND, medium to coarse, rusty in color, (10YR 4/6), trace fine silt. *(continued)* Same as above but gray, (10YR 4/2).						W				
	18	1 1 2 2	17							W				
			18											
	18		19							W				
			20		SP									
	18		21							W				
			22											
	18	3 1 2 2	23							W				
			24											
	18	2 1 3 2	25							W				
			26	End of Boring at 26 feet.										

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL - Lansing Generating Station SCS#: 25218221.00		MW-306A

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	12/17/2019	12/18/2019	Rotosonic

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			16.3 Feet	636.7 Feet	6 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3958980.99 N, 5541196.46 E S / C / N
NE 1/4 of NW 1/4 of Section 02, T 98 N, R 03 W
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Hydrovac to 9' to check for utilities.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10	POORLY GRADED SAND, reddish brown, trace shells, medium grained.										
			11											
			12											
S1	52"		13		SP					W				
			14											
			15											
			16											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Firm SCS Engineers Tel: Fax:

Boring Number MW-306A

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			17	POORLY GRADED SAND, reddish brown, trace shells, medium grained. *(continued)*										
S2	56"		18		SP					W				
			19											
			20	POORLY GRADED SAND, gray, fine to medium grained, trace coarse grained and shells.										
			21											
			22											
S3	57"		23							W				
			24											
			25	Same, mostly medium grained with fine grained.										
			26											
			27											
S4	54"		28							W				
			29											
			30	Same, fine to medium grained with trace coarse grained.	SP									
			31											
			32											
S5	58"		33							W				
			34											
			35	Same with shell fragments.										
			36											
			37											
S6	53"		38							W				
			39											
			40											
			41	LEAN CLAY, dark gray, massive, very dense with roots and sticks.										
			42		CL									

Boring Number MW-306A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
S7	58"		43	LEAN CLAY, dark gray, massive, very dense with roots and sticks. *(continued)*	CL					W				
			44	POORLY GRADED SAND, gray to dark gray, fine grained, trace coarse grain with shell fragments.										
			45											
			46											
			47		SP									
S8	52"		48							W				
			49											
			50	POORLY GRADED SAND, light gray, fine to medium grained.										
			51		SP									
			52	POORLY GRADED SAND, reddish tan, fine to medium grained with shell fragments.										
S9	58"		53							W				
			54		SP									
			55											
			56	End of boring at 56 feet.										

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-307

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/22/2021	6/22/2021	Roto-Sonic

DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		628.5 Feet	640.70 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,777 N, 5,541,269 E S / C / N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43 ° 20 ' 2.56 "
Long -91 ° 10 ' 9.97 "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Hydrovaced to 12' below ground surface with some cave-in to about 10'.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10	POORLY GRADED SAND, medium grained, yellowish brown (10YR 5/4) with 4" layer of gray sand (10YR 5/1), shells and subroundd gravel.										
S1	60		11		SP					W				
			12											
			13											
			14											
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-307

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			16	Same as above , shells still present with more gray sand.	SP									
			17											
S2	60		18	SILT, dark gray to black (5Y 2.5/2), with trace very fine grained sand and gravel/cobbles.	ML				0.75	W/M				
			19											
			20	Same as above but gray (5Y 4/1).										
S3	12									W/M				
			21	End of boring at 21' below ground surface.										
				Well placed from 20' with 10' screen at 20 to 10'.										

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-307A

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/22/2021	6/22/2021	Roto-Sonic

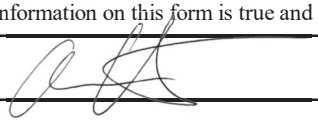
DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		622.8 Feet	640.60 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,775 N, 5,541,261 E S/C/N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43° 20' 2.54"
Long -91° 10' 10.08"
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1–9	Hydrovaced to 12' below ground surface with some cave-in to about 10'.										
S1	60		10–15	POORLY GRADED SAND, medium grained, yellowish brown (10YR 5/4) with 8" layer of gray sand (10YR 5/1) with trace shells and sub-rounded gravel.	SP					M/W				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature  Firm SCS Engineers
2830 Dairy Drive, Madison, WI 53718
Tel:
Fax:

Boring Number MW-307A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16											
			17											
S2	48		18		SP					W				
			19											
			20	SILT, dark gray, dark gray to black, (5Y 2.5/2) with fine grained sand and trace gravel.										
			21											
			22											
S3	60		23		ML				1.5-2.5	M				
			24											
			25	LEAN CLAY, black (5Y 2.5/1), soft.										
			26											
			27											
S4	60		28						0.75	W				
			29											
			30	Same as above but very soft with trace fine to medium grained sand.	CL									
			31											
			32											
S5	60		33						0.0	M/W				
			34											
			35											
			36	POORLY GRADED GRAVEL WITH SAND, fine to coarse gravel, sub-rounded to sub-angular, sand is fine to coarse grained, dark brownish gray (2.5Y 4/2) with trace silt.										
			37											
S6	24		38		GP				0.0	W				
			39											
			40											

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-307A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			41		GP									
			41	SILT, dark gray (5Y 3/1), with trace sand, gravel and cobbles.	ML									
			42	WELL GRADED SAND, fine to medium grained, yellow (2.Y 7/6) with gravel and pieces of shell.	SW									
S7	56		43	SILT, dark gray (5Y 4/1) and transitions to olive brown (2.5Y 4/4), very soft.	ML				0.0	W				
			44											
			45	POORLY GRADED SAND, fine to medium grained, light olive brown (2.5Y 5/4) with trace silt.	SP									
			46											
			47	SANDY SILT, light olive brown (2.5Y 5/3), very soft, sand is fine to medium grained.	ML									
			48	SILTY SAND, fine to coarse grained, olive yellow (2.5Y 6/8).	SM									
S8	70		49	POORLY GRADED GRAVEL WITH SAND AND SILT, coarse gravel, sand and silt are light olive brown (2.5Y 5/4), sand is fine to coarse grained.	GP-GM				0.0	W				
			50	SANDY SILT WITH GRAVEL, gray to dark gray (2.5Y 4/1), sand is fine to coarse grained, gravel is coarse, sub-rounded with trace cobbles, very soft.	ML									
			51											
			52	End of boring at 52' below ground surface.										

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-308

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/22/2021	6/22/2021	Roto-Sonic

DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		618.8 Feet	635.70 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,958,236 N, 5,541,333 E S / C / N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43 ° 20 ' 7.07 "
Long -91 ° 10 ' 8.94 "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			1	Hydrovaced to 8 feet below ground surface and blind drilled the from 8 to 10'.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											Blind drilled 2 ft of slough from 8 to 10' bgs.
			10	WELL SORTED SAND, fine to coarse grained, very dark grayish brown (10YR 3/2).	SW									
			11	SILT, gray to dark gray (2.5Y 3/2) with sticks, roots, and trace sand throughout, very soft.										
			12											
S1	60		13		ML				0.0	W				
			14											
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-308

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	Same as above but with trace roots, no sticks, and pockets of sand, very sort.										
			17											
S2	60		18		ML				0.0	W				
			19											
			20	Same as above but very trace roots.										
S3	40		21	SANDY SILT, gray to dark gray, (2.5Y 3/2), no visible roots, very soft.	ML				0.0	W				slough in hole, actual recovery was ~2"
			22	End of boring at 22' below ground surface.										

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-309

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/23/2021	6/23/2021	Roto-Sonic

DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		619.4 Feet	636.10 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,958,229 N, 5,541,010 E S / C / N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43° 20' 7.10"
Long -91° 10' 13.31"
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	Hydrovaced to 8' below ground surface.										
			1	Hole collapsed to 6' bgs.										
			2											
			3											
			4											
			5											
			6	WELL GRADED SAND, fine to coarse grained, grayish brown to brown (10YR 4/3) with trace coal (slough).										
S1	20		7											
			8		SP									Slough from 6 to 10 feet.
			9											
			10	SILT, dark gray to black (5Y 2.5/1) with trace roots, 4" layer of black organic soil with trace gravel and sticks.										
			11											
			12		ML-OL									
S2	60		13											
			14	SILTY SAND WITH GRAVEL, fine to coarse grained, gray to dark gray (5Y 4/1), gravel is										
			15		SM									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

Boring Number MW-309

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				sub-rounded.										
			16	SILT, dark gray (5Y 3/1), with roots and trace sticks, very soft.										
			17											
S3	60		18		ML									
			19											
			20	SANDY SILT, very dark gray (5Y 3/1) with roots, trace gravel and peices of limestone at bottom of sample, sand is fine to medium grain.										
			21											
			22											
S4	60		23		ML									
			24											
			25											
				End of boring at 25' below ground surface.										
				Well placed from 22' with 10' screen at 22 to 12'.										

Print Form

IOWA DEPARTMENT OF NATURAL RESOURCES

MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL-Lansing Generating Station Permit No.:

Well or Piezometer No: MW-301

Dates Started: 11/2/15 Date Completed: 11/2/15

A. SURVEYED LOCATIONS AND ELEVATIONS

Locations (± 0.5 ft):

Specify corner of site: NW

Distance & direction along boundary: 540' SE

Distance & direction from boundary to wall: 230' NE

Elevations (± 0.01 ft MSL):

Ground Surface: 639.35

Top of protective casing: 642.18

Top of well casing: 641.61

Benchmark elevation: 622.86, NAVD 1988 datum

Benchmark description: CP 300, iron rod in concrete

B. SOIL BORING INFORMATION

Name & Address of Construction Company:
Cascade Drilling
301 Alderson St.
Schofield, WI 54476

Name of Driller: Mike Mueller

Drilling Method: HSA

Drilling Fluid: None

Bore Hole Diameter: 8"

Soil Sampling Method: Spoon

Depth of Boring: 26

C. MONITORING WELL INSTALLATION

Casing material: PVC

Length of casing: 15 ft

Outside casing diameter: 2.40"

Inside casing diameter: 2"

Casing joint type: threaded

Casing/screen joint type: threaded

Screen material: PVC

Screen opening size: .010

Screen length: 10 ft

Depth of well: 25 ft

Filter Pack:

Material: Red Flint

Grain size: #40

Volume: 300 lbs

Seal (minimum 3 ft length above filter pack):

Material: 3/8" bentonite chips

Placement method: Gravity

Volume:

Backfill (if different from seal):

Material:

Placement method:

Volume:

Surface seal design:

Material of protective casing: Steel 6"

Material of grout between protective casing and well casing: sand

Protective cap:

Material: steel

Vented: ☒ Yes ☐ No Locking: ☐ Yes ☐ No

Well Cap:

Material: PVC

Vented: ☐ Yes ☒ No

D. GROUNDWATER MEASURMENT (± 0.01 ft below top of inner well casing)

Water level: 17.63 Stabilization Time: 2 hrs.

Well development method: Surged and pumped. Turbidity reduced but not eliminated.

Average depth of frostline: 4 ft.

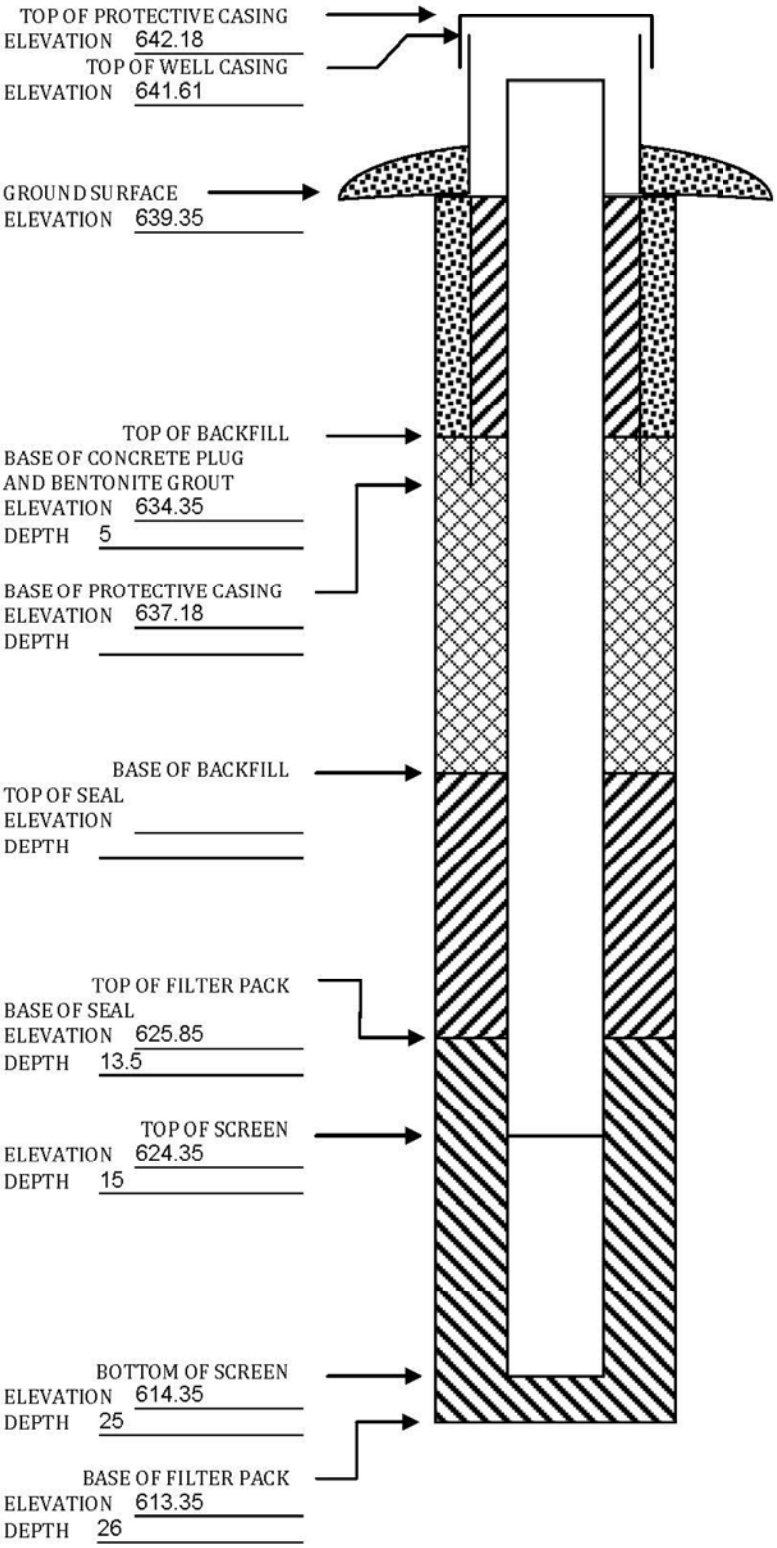
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½x11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed for to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319-0034.

Questions? Call or Email: Nina Koger, Environmental Engineer Sr., 515-281-8986, Nina.Koger@dnr.iowa.gov

ELEVATIONS: ± 0.01 ft MSL
DEPTHS: ± 0.1 ft FROM GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL.)



Print Form

IOWA DEPARTMENT OF NATURAL RESOURCES

MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL-Lansing Generating Station Permit No.:

Well or Piezometer No: MW-302

Dates Started: 11/4/15 Date Completed: 11/4/15

A. SURVEYED LOCATIONS AND ELEVATIONS

Locations (± 0.5 ft):

Specify corner of site: NW

Distance & direction along boundary: 465' SE

Distance & direction from boundary to wall: 405' NE

Elevations (± 0.01 ft MSL):

Ground Surface: 635.85

Top of protective casing: 638.72

Top of well casing: 638.40

Benchmark elevation: 633.86, NAVD 1988 datum

Benchmark description: CP 300, iron rod in concrete

B. SOIL BORING INFORMATION

Name & Address of Construction Company:
Cascade Drilling
301 Alderson St.
Schofield, WI 54476

Name of Driller: Mike Mueller

Drilling Method: HSA

Drilling Fluid: None

Bore Hole Diameter: 8"

Soil Sampling Method: Spoon

Depth of Boring: 20 ft

C. MONITORING WELL INSTALLATION

Casing material: PVC

Length of casing: 9'

Outside casing diameter: 2.40"

Inside casing diameter: 2"

Casing joint type: Threaded

Casing/screen joint type: Threaded

Screen material: PVC

Screen opening size: .01"

Screen length: 10'

Depth of well: 19'

Filter Pack:

Material: Red Flint

Grain size: #40

Volume: 120 lbs

Seal (minimum 3 ft length above filter pack):

Material: 3/8" hole plug

Placement method: Gravity

Volume:

Backfill (if different from seal):

Material:

Placement method:

Volume:

Surface seal design:

Material of protective casing: Steel 6"

Material of grout between protective casing and well casing: sand

Protective cap:

Material: steel

Vented: ☑ Yes ☐ No Locking: ☐ Yes ☐ No

Well Cap:

Material: PVC

Vented: ☐ Yes ☑ No

D. GROUNDWATER MEASURMENT (± 0.01 ft below top of inner well casing)

Water level: 9.95 Stabilization Time: 2 hrs.

Well development method: Surged and pumped. Turbidity reduced but not removed.

Average depth of frostline: 4 ft.

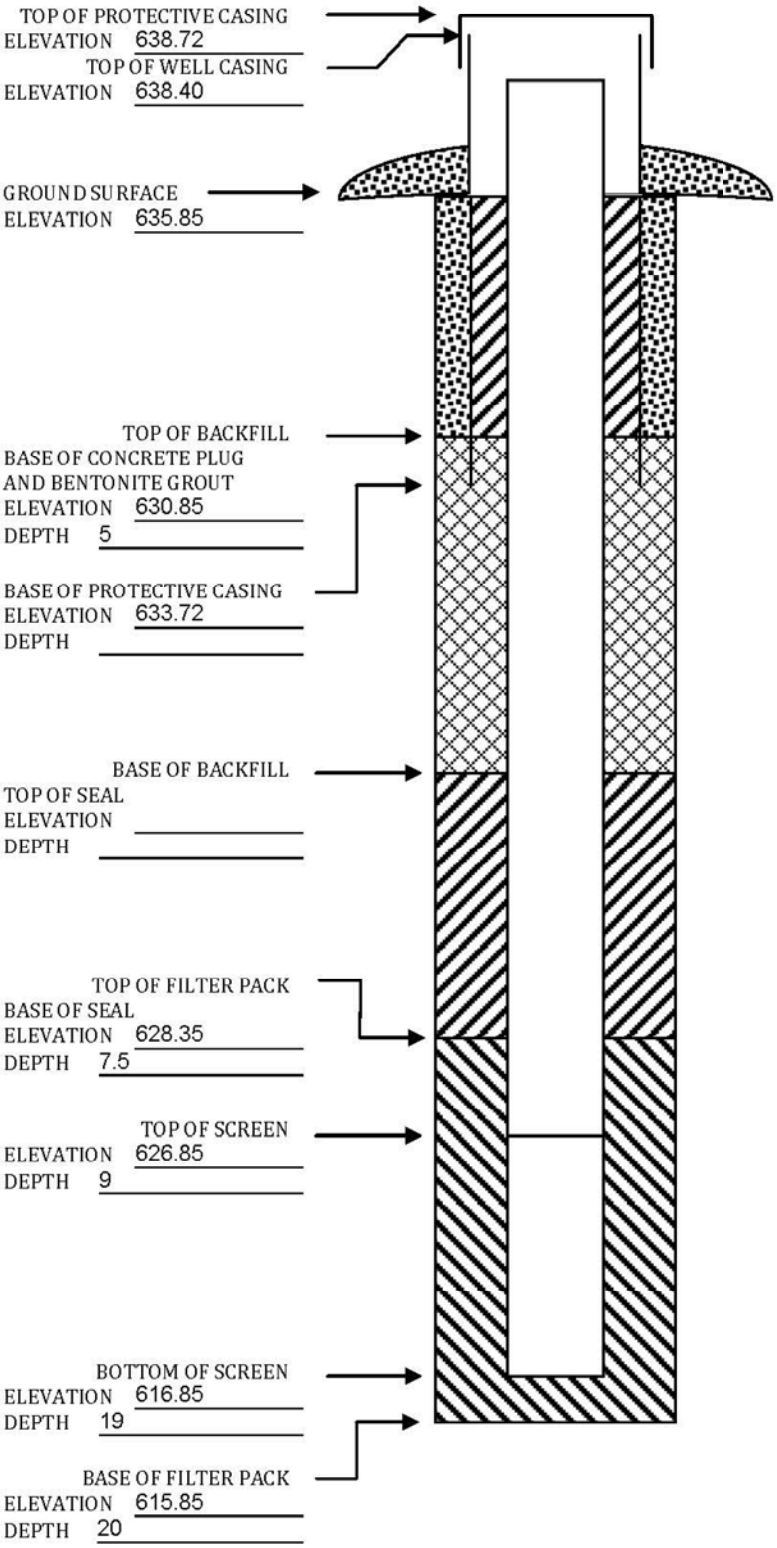
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½x11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed for to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319-0034.

Questions? Call or Email: Nina Koger, Environmental Engineer Sr., 515-281-8986, Nina.Koger@dnr.iowa.gov

ELEVATIONS: ± 0.01 ft MSL
DEPTHS: ± 0.1 ft FROM GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL.)



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Lansing Generating Station Permit No.:

Well or Piezometer No.: MW-302A Dates Started: 12/16/2019 Date Completed: 12/19/2019

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site: NW Distance and direction along boundary: 375 E

Distance and direction from boundary to surface monitoring well: 0 S

Elevation (+0.01 ft. MSL)

Ground Surface: 636.2' Top of protective casing: 638.93'

Top of well casing: 638.68' Benchmark elevation: 653.26'

Benchmark description: Brass cap in PCC walkway to weir structure on north side of entrance road

B. SOIL BORING INFORMATION

Construction Company Name: Cascade Drilling

Address: 301 Alderson St. City, State, Zip Code: Schofield, WI. 54476

Name of driller: Paul Dickinson

Drilling method: Rotosonic Drilling fluid: Water Bore Hole diameter: 6"

Soil sampling method: Sample bag Depth of boring: 50'

C. MONITORING WELL INSTALLATION

Casing material: Sch. 40 PVC

Length of casing: 52.45'

Outside casing diameter: 2.4"

Inside casing diameter: 2.04"

Casing joint type: Threaded

Casing/screen joint type: Threaded

Screen material: PVC

Screen opening size: 0.01'

Screen length: 5'

Depth of Well: 49'

Filter Pack:

Material: Filter Sand

Grain Size: #40 red flint, topped with #7

Volume: 2 cu. ft.

Seal (minimum 3 ft. length above filter pack):

Material: Bentonite Chips

Placement method: Poured

Volume: 2 cu. ft.

Backfill (if different from seal):

Material: Bentonite grout

Placement method: Pumped

Volume: 60 gal.

Surface seal design: Protop

Material of protective casing: Steel

Material of grout between protective casing and well casing: Sand

Protective cap: 6" Royer cap

Material: Aluminum

Vented?: ☒ Y ☐ N Locking?: ☒ Y ☐ N

Well cap:

Material: Plastic and rubber

Vented?: ☐ Y ☒ N

D. GROUNDWATER MEASUREMENT (±0.01 foot below top of inner well casing)

Water level: 15.88' **Stabilization time**: < 1 minute

Well development method: Surged and pumped

Average depth of frost line: 4 ft

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature: [signature] **Certification #**: 9361 **Date**: 12-19-2019

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½ inch x 11 inch map showing locations of all monitoring wells and piezometers.

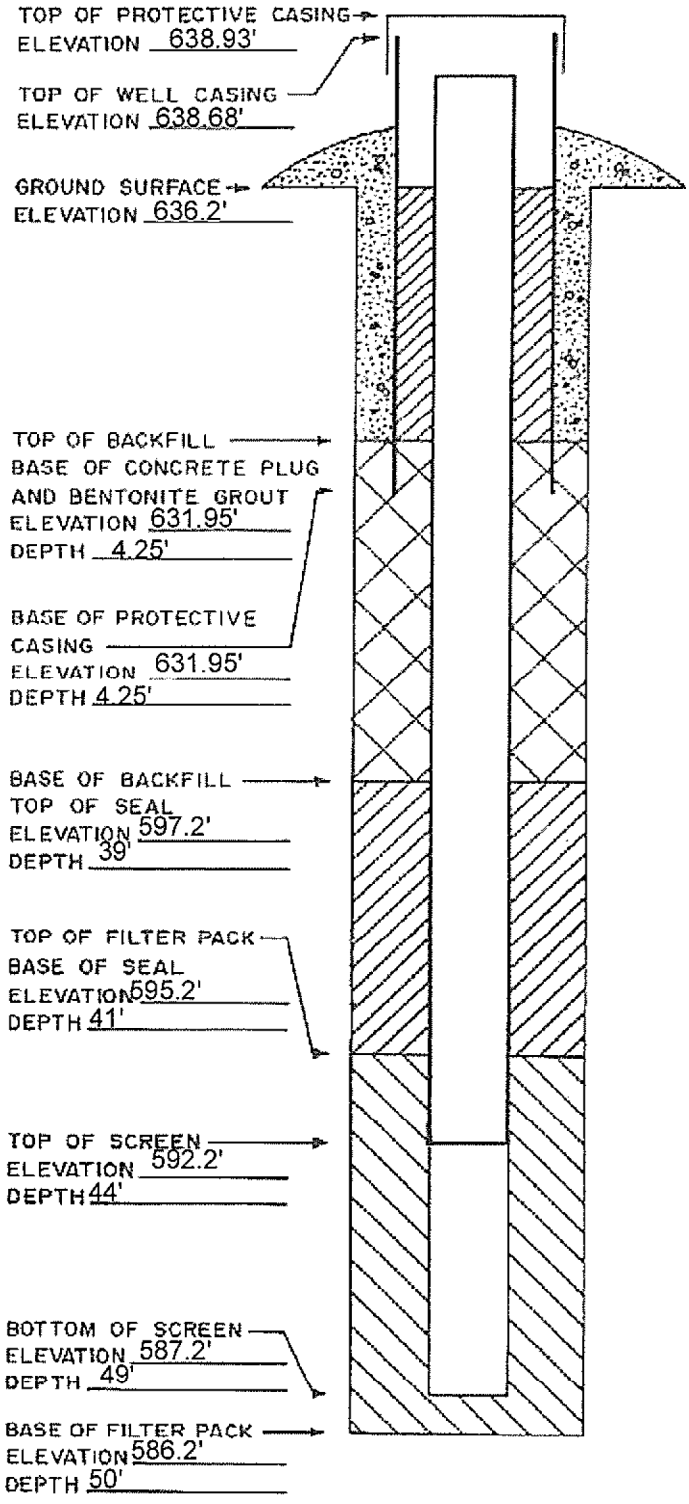
Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.

Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

ELEVATIONS: ± 0.01 FT. MSL

DEPTHS: ± 0.1 FT. FROM GROUND SERFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL).



Print Form

IOWA DEPARTMENT OF NATURAL RESOURCES

MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL-Lansing Generating Station Permit No.:

Well or Piezometer No: MW-303

Dates Started: 11/3/15 Date Completed: 11/4/15

A. SURVEYED LOCATIONS AND ELEVATIONS

Locations (± 0.5 ft):

Specify corner of site: NW

Distance & direction along boundary: 730' SE

Distance & direction from boundary to wall: 760' NE

Elevations (± 0.01 ft MSL):

Ground Surface: 653.85

Top of protective casing: 656.74

Top of well casing: 656.27

Benchmark elevation: 633.86, NAVD 1988 datum

Benchmark description: CP 300, iron rod in concrete

B. SOIL BORING INFORMATION

Name & Address of Construction Company:
Cascade Drilling
301 Alderson St
Schofield, WI 54476

Name of Driller: Mike Mueller

Drilling Method: HSA

Drilling Fluid: None

Bore Hole Diameter: 8"

Soil Sampling Method: Spoon

Depth of Boring: 27 feet

C. MONITORING WELL INSTALLATION

Casing material: PVC

Length of casing: 16

Outside casing diameter: 2.40"

Inside casing diameter: 2"

Casing joint type: threaded

Casing/screen joint type: threaded

Screen material: PVC

Screen opening size: .01"

Screen length: 10'

Depth of well: 26'

Filter Pack:

Material: Red Flint

Grain size: #40

Volume: 250 lbs

Seal (minimum 3 ft length above filter pack):

Material: 3/8" bentonite chips

Placement method: Gravity

Volume:

Backfill (if different from seal):

Material:

Placement method:

Volume:

Surface seal design:

Material of protective casing: Steel 6"

Material of grout between protective casing and well casing: sand

Protective cap:

Material: steel

Vented: ☑ Yes ☐ No Locking: ☐ Yes ☐ No

Well Cap:

Material: PVC

Vented: ☐ Yes ☑ No

D. GROUNDWATER MEASURMENT (± 0.01 ft below top of inner well casing)

Water level: 16.35 Stabilization Time: < 1 hr.

Well development method: Surged and pumped to reduce turbidity

Average depth of frostline: 4'

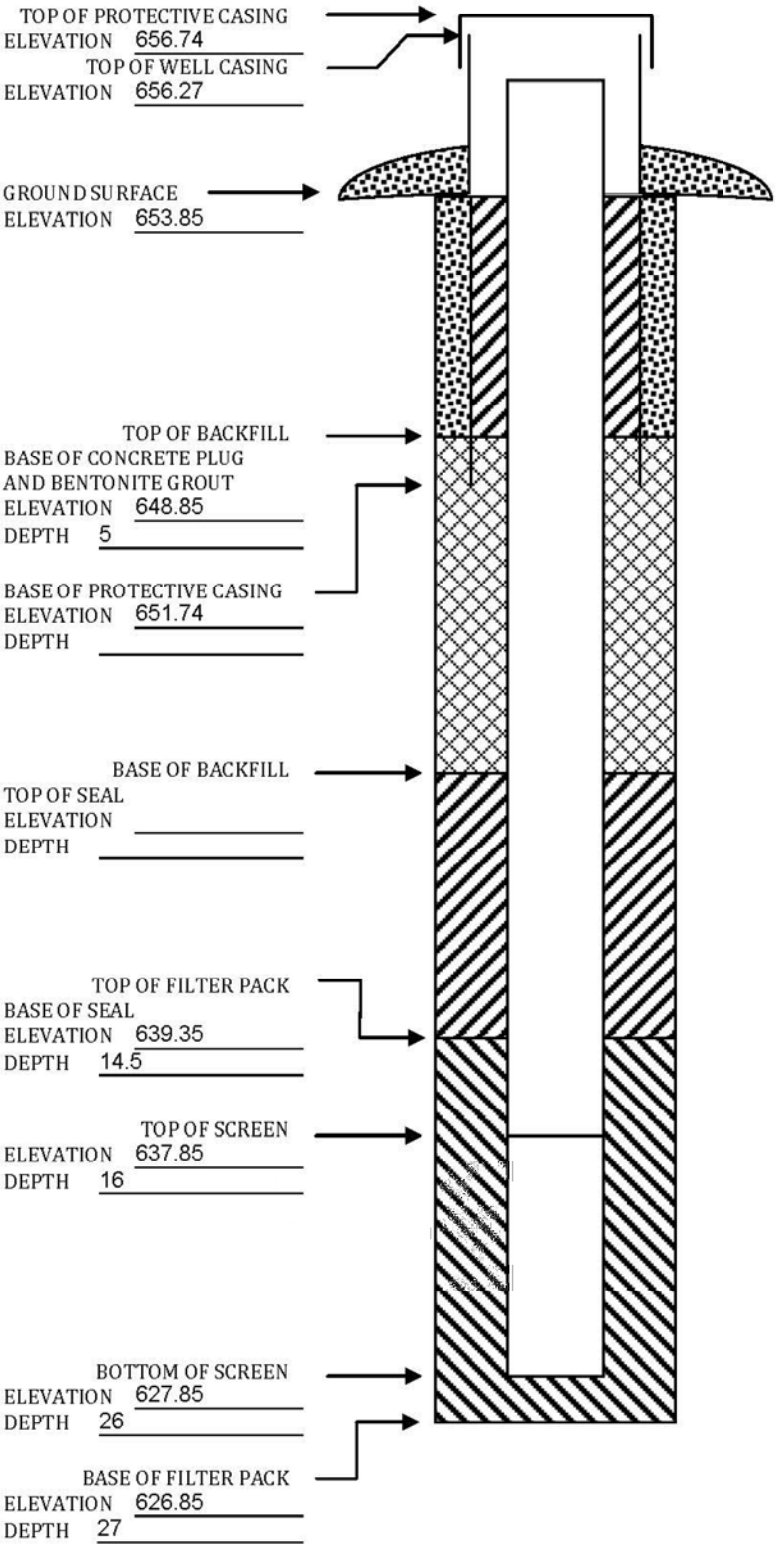
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½x11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed for to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319-0034.

Questions? Call or Email: Nina Koger, Environmental Engineer Sr., 515-281-8986, Nina.Koger@dnr.iowa.gov

ELEVATIONS: ± 0.01 ft MSL
DEPTHS: ± 0.1 ft FROM GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL.)



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Lansing Generating Station — Permit No.:

Well or Piezometer No.: MW304 — Dates Started: 5/15/2019 — Date Completed: 5/15/2019

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site: NW — Distance and direction along boundary: 1,340 S

Distance and direction from boundary to surface monitoring well: 10 E

Elevation (+0.01 ft. MSL):

Ground Surface: 635.47 — Top of protective casing: 636.68

Top of well casing: 636.43 — Benchmark elevation: 653.26

Benchmark description: Brass cap in PCC walkway to weir structure on north side of entrance road

B. SOIL BORING INFORMATION

Construction Company Name: Roberts Environmental Drilling Inc.

Address: 1107 South Mulberry Street — City, State, Zip Code: Millstadt, IL, 62260

Name of driller: Eric Wetzel

Drilling method: 4 1/4" HSA — Drilling fluid: None — Bore Hole diameter: 8.5"

Soil sampling method: Split Spoon — Depth of boring: 22'

C. MONITORING WELL INSTALLATION

Casing material: PVC

Length of casing: 20.26'

Outside casing diameter: 2.4"

Inside casing diameter: 2.0"

Casing joint type: Threaded

Casing/screen joint type: Threaded

Screen material: PVC

Screen opening size: 0.01'

Screen length: 10'

Depth of Well: 20'

Filter Pack:

Material: Filter Sand

Grain Size:

Volume: 19.4 cubic feet

Seal (minimum 3 ft. length above filter pack):

Material: Bentonite

Placement method: Gravity

Volume:

Backfill (if different from seal):

Material:

Placement method:

Volume:

Surface seal design: Concrete

Material of protective casing: Steel

Material of grout between protective casing and well casing: Bentonite chips

Protective cap:

Material: Steel

Vented?: ☒ Y ☐ N — Locking?: ☒ Y ☐ N

Well cap:

Material: Plastic

Vented?: ☒ Y ☐ N

D. GROUNDWATER MEASUREMENT (±0.01 foot below top of inner well casing)

Water level: 13.21' — **Stabilization time:** <1 hour

Well development method: Surged & pumped to reduce turbidity

Average depth of frost line: 4

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature: [signature] — **Certification #:** 11509 — **Date:** 8/8/2019

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½ inch x 11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.

Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

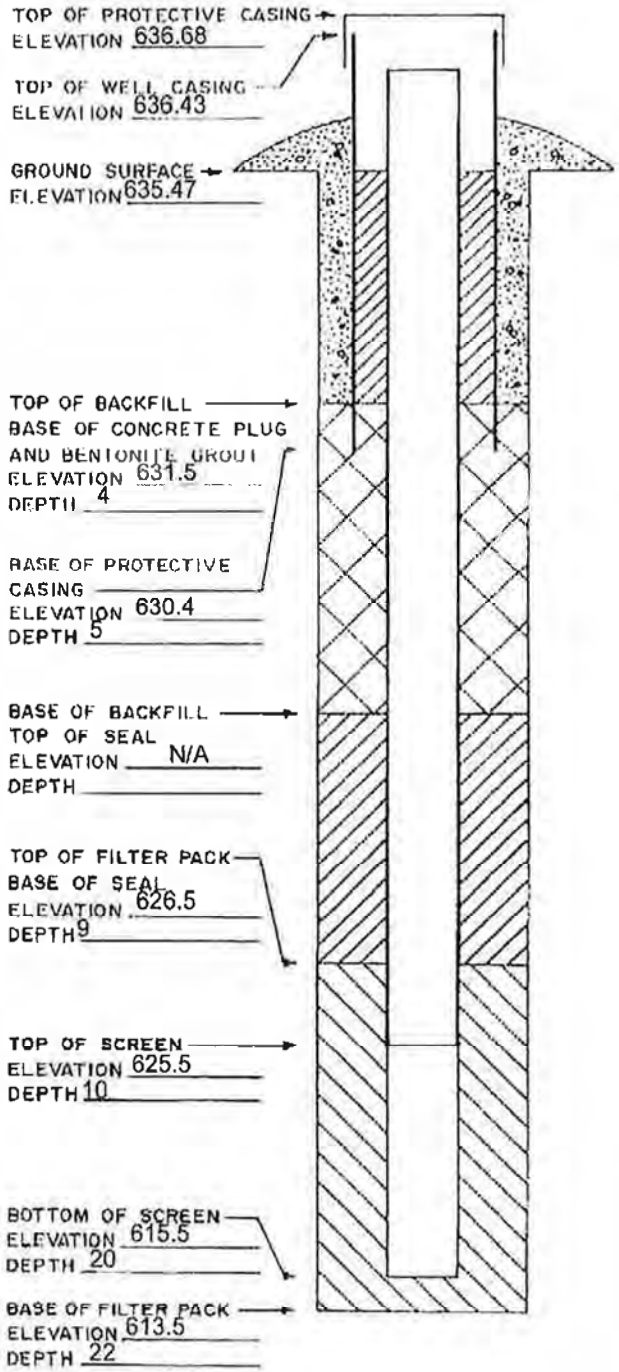
09/2017 cmc

DNR Form 542-1277

ELEVATIONS: ± 0.01 FT. MSL

DEPTHS: ± 0.1 FT. FROM GROUND SERFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL).



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Lansing Generating Station Permit No.:

Well or Piezometer No.: MW-304A Dates Started: 12/18/2019 Date Completed: 12/19/2019

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site: NW Distance and direction along boundary: 1340 S

Distance and direction from boundary to surface monitoring well: 10 E

Elevation (+0.01 ft. MSL)

Ground Surface: 635.6 Top of protective casing: 638.6

Top of well casing: 638.36 Benchmark elevation: 653.26

Benchmark description: Brass cap in PCC walkway to weir structure on north side of entrance road

B. SOIL BORING INFORMATION

Construction Company Name: Cascade Drilling

Address: 301 Alderson St. City, State, Zip Code: Schofield, WI. 54476

Name of driller: Paul Dickinson

Drilling method: Rotosonic Drilling fluid: Water Bore Hole diameter: 6"

Soil sampling method: Sample bag Depth of boring: 51'

C. MONITORING WELL INSTALLATION

Casing material: Sch. 80 PVC

Length of casing: 52.45'

Outside casing diameter: 2.4"

Inside casing diameter: 1.939"

Casing joint type: Threaded

Casing/screen joint type: Threaded

Screen material: PVC

Screen opening size: 0.01'

Screen length: 5'

Depth of Well: 50'

Filter Pack:

Material: Filter Sand

Grain Size: #40 red flint, topped with #7

Volume: 1.5cu. ft.

Seal (minimum 3 ft. length above filter pack):

Material: Bentonite Chips

Placement method: Poured

Volume: 2 cu. ft.

Backfill (if different from seal):

Material: Bentonite grout

Placement method: Pumped

Volume: 60 gal.

Surface seal design: Protop

Material of protective casing: Steel

Material of grout between protective casing and well casing: Sand

Protective cap: 6" Royer cap

Material: Aluminum

Vented?: ☒ Y ☐ N Locking?: ☒ Y ☐ N

Well cap:

Material: Plastic and rubber

Vented?: ☐ Y ☒ N

D. GROUNDWATER MEASUREMENT (±0.01 foot below top of inner well casing)

Water level: 13.35' **Stabilization time**: >1hr

Well development method: Surged and pumped

Average depth of frost line: 4 ft

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature: [signature] **Certification #**: 7361 **Date**: 12-19-2019

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½ inch x 11 inch map showing locations of all monitoring wells and piezometers.

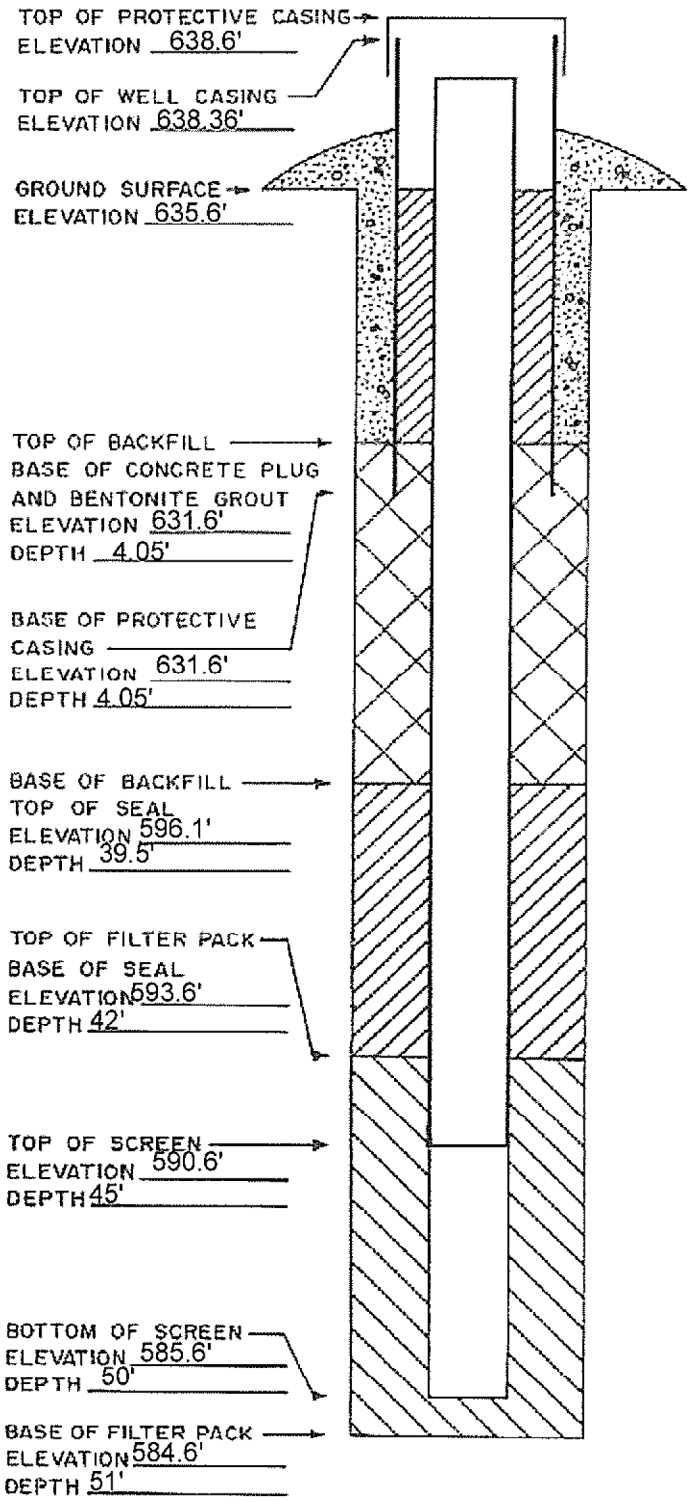
Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.

Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

ELEVATIONS: ± 0.01 FT. MSL

DEPTHS: ± 0.1 FT. FROM GROUND SERFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL).



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Lansing Generating Station — Permit No.:

Well or Piezometer No.: MW305 — Dates Started: 5/16/2019 — Date Completed: 5/16/2019

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site: NW — Distance and direction along boundary: 1,125 S

Distance and direction from boundary to surface monitoring well: 630 E

Elevation (+0.01 ft. MSL):

Ground Surface: 631.75 — Top of protective casing: 634.32

Top of well casing: 633.87 — Benchmark elevation: 653.26

Benchmark description: Brass cap in PCC walkway to weir structure on north side of entrance road

B. SOIL BORING INFORMATION

Construction Company Name: Roberts Environmental Drilling Inc.

Address: 1107 South Mulberry Street — City, State, Zip Code: Millstadt, IL, 62260

Name of driller: Eric Wetzel

Drilling method: 4 1/4" HSA — Drilling fluid: — Bore Hole diameter: 8.5"

Soil sampling method: Split Spoon — Depth of boring: 16'

C. MONITORING WELL INSTALLATION

Casing material: PVC

Length of casing: 5'

Outside casing diameter: 2.4"

Inside casing diameter: 2.0"

Casing joint type: Threaded

Casing/screen joint type: Threaded

Screen material: PVC

Screen opening size: 0.01'

Screen length: 10'

Depth of Well: 14.5'

Filter Pack:

Material: Filter Sand

Grain Size:

Volume: 23 bags

Seal (minimum 3 ft. length above filter pack):

Material: Bentonite

Placement method: Gravity

Volume: 2.7 cubic ft

Backfill (if different from seal):

Material:

Placement method:

Volume:

Surface seal design: Concrete

Material of protective casing: Steel

Material of grout between protective casing and well casing: Bentonite chips

Protective cap:

Material: steel

Vented?: ☒ Y ☐ N — Locking?: ☒ Y ☐ N

Well cap:

Material: Plastic

Vented?: ☒ Y ☐ N

D. GROUNDWATER MEASUREMENT (+0.01 foot below top of inner well casing)

Water level: 12.13' — **Stabilization time:** < 1 hr

Well development method: Surged and pumped to remove turbidity

Average depth of frost line: 4 ft

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature: [signature] — **Certification #:** 11509 — **Date:** 8/8/2019

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½ inch x 11 inch map showing locations of all monitoring wells and piezometers.

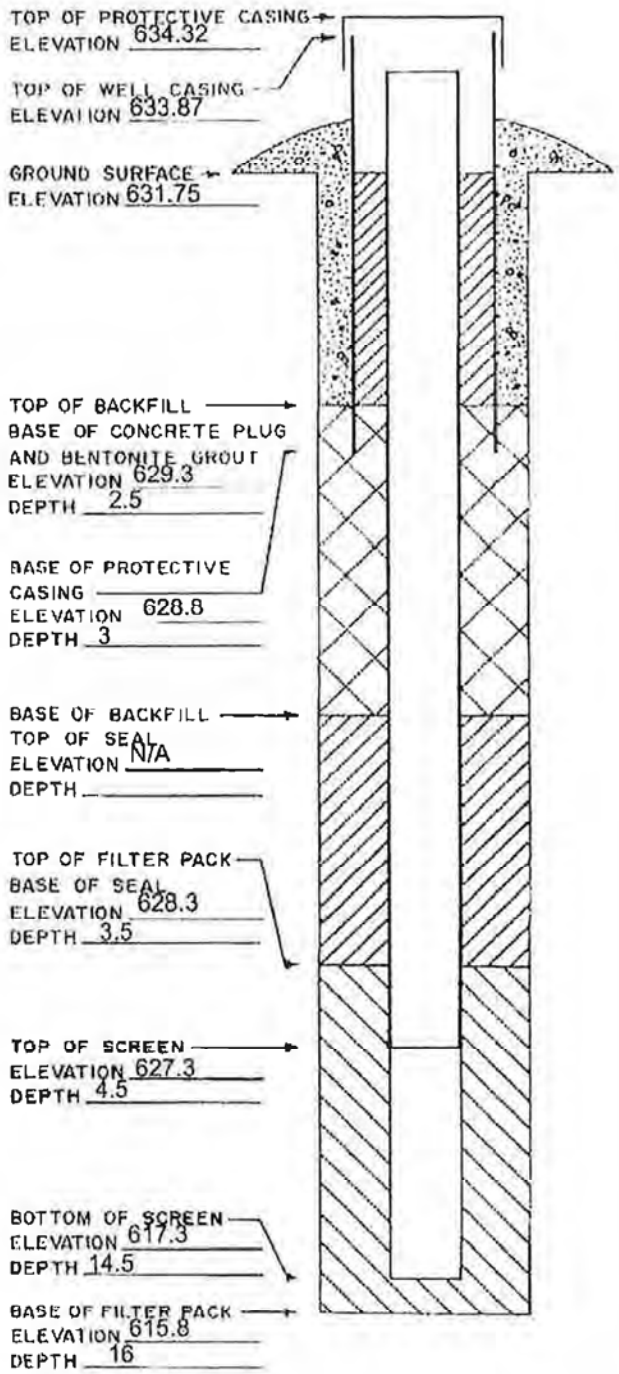
Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.

Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

ELEVATIONS: ± 0.01 FT. MSL

DEPTHS: ± 0.1 FT. FROM GROUND SERFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL).



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Lansing Generating Station | Permit No.:

Well or Piezometer No.: MW306 | Dates Started: 5/16/2019 | Date Completed: 5/16/2019

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site: NW | Distance and direction along boundary: 420 SE

Distance and direction from boundary to surface monitoring well: 60 SW

Elevation (+0.01 ft. MSL):

Ground Surface: 636.74 | Top of protective casing: 637.71

Top of well casing: 637.48 | Benchmark elevation: 653.26

Benchmark description: Brass cap in PCC walkway to weir structure on north side of entrance road

B. SOIL BORING INFORMATION

Construction Company Name: Roberts Environmental Drilling Inc.

Address: 1107 South Mulberry Street | City, State, Zip Code: Millstadt, IL, 62260

Name of driller: Eric Wetzel

Drilling method: 4 1/4" HSA | Drilling fluid: | Bore Hole diameter: 8.5"

Soil sampling method: Split Spoon | Depth of boring: 26'

C. MONITORING WELL INSTALLATION

Casing material: PVC | Placement method: Gravity

Length of casing: 26' | Volume:

Outside casing diameter: 2.4" | Backfill (if different from seal):

Inside casing diameter: 2.0" | Material:

Casing joint type: Threaded | Placement method:

Casing/screen joint type: Threaded | Volume:

Screen material: PVC | Surface seal design: Concrete

Screen opening size: 0.01' | Material of protective casing: Steel

Material of grout between protective casing and well casing: Bentonite chips

Screen length: 10'

Depth of Well: 25' | Protective cap:

Filter Pack: | Material: Steel

Material: Filter Sand | Vented?: ☒ Y ☐ N | Locking?: ☒ Y ☐ N

Grain Size: | Well cap:

Volume: 37 cubic feet | Material: Plastic

Seal (minimum 3 ft. length above filter pack): | Vented?: ☒ Y ☐ N

Material: Bentonite

D. GROUNDWATER MEASUREMENT (+0.01 foot below top of inner well casing)

Water level: 13.11' | **Stabilization time**: <1 hr

Well development method: Surged and pumped to reduce turbidity

Average depth of frost line: 4 ft

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature: [signature] | **Certification #**: 11509 | **Date**: 8/8/2019

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½ inch x 11 inch map showing locations of all monitoring wells and piezometers.

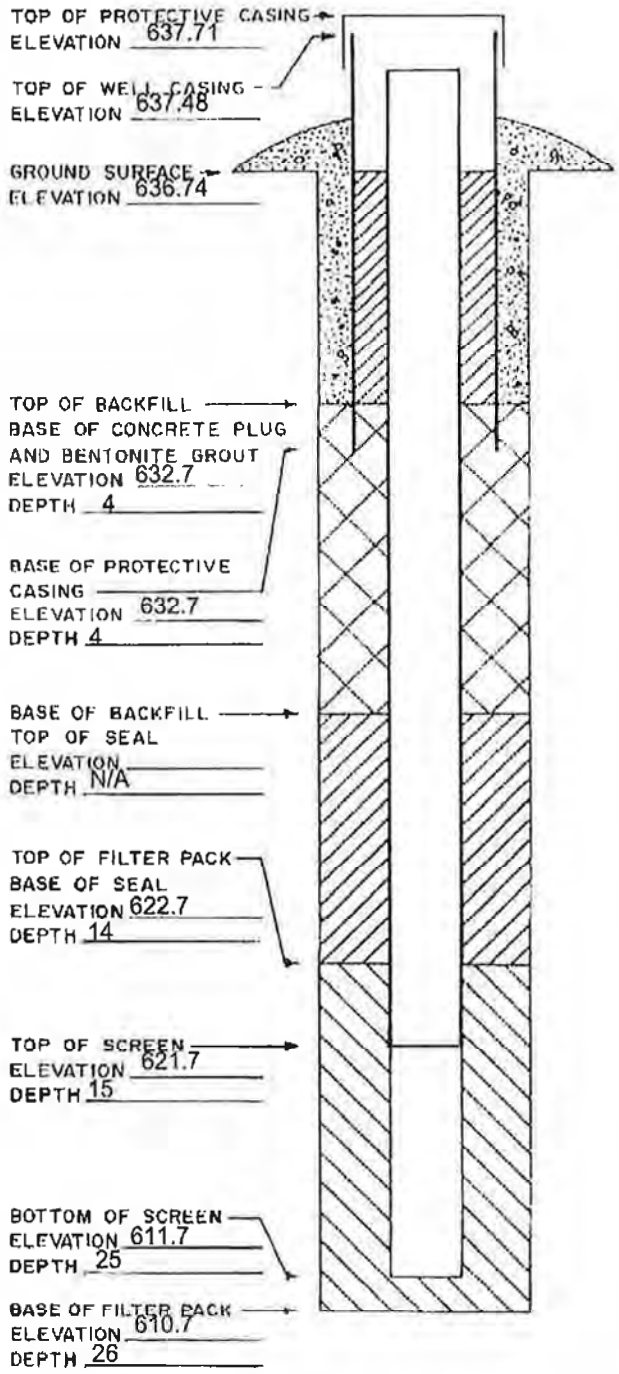
Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.

Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

ELEVATIONS: ± 0.01 FT. MSL

DEPTHS: ± 0.1 FT. FROM GROUND SERFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL)



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Lansing Generating Station Permit No.:

Well or Piezometer No.: MW-306A Dates Started: 5/17/2019 Date Completed: 12/19/2019

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site: NW Distance and direction along boundary: 420 SE

Distance and direction from boundary to surface monitoring well: 60 SW

Elevation (+0.01 ft. MSL)

Ground Surface: 636.7 Top of protective casing: 639.56

Top of well casing: 639.33 Benchmark elevation: 653.26

Benchmark description: Brass cap in PCC walkway to weir structure on north side of entrance road

B. SOIL BORING INFORMATION

Construction Company Name: Cascade Drilling

Address: 301 Alderson St. City, State, Zip Code: Schofield, WI. 54476

Name of driller: Paul Dickinson

Drilling method: Rotosonic Drilling fluid: Water Bore Hole diameter: 6"

Soil sampling method: Sample bag Depth of boring: 56'

C. MONITORING WELL INSTALLATION

Casing material: Sch. 80 PVC

Length of casing: 58.06'

Outside casing diameter: 2.4"

Inside casing diameter: 1.939"

Casing joint type: Threaded

Casing/screen joint type: Threaded

Screen material: PVC

Screen opening size: 0.01'

Screen length: 5'

Depth of Well: 55'

Filter Pack:

Material: Filter Sand

Grain Size: #40 red flint, topped with #7

Volume: 1.5cu. ft.

Seal (minimum 3 ft. length above filter pack):

Material: Bentonite Chips

Placement method: Poured

Volume: 2 cu. ft.

Backfill (if different from seal):

Material: Bentonite grout

Placement method: Pumped

Volume: 60 gal.

Surface seal design: Protop

Material of protective casing: Steel

Material of grout between protective casing and well casing: Sand

Protective cap: 6" Royer cap

Material: Aluminum

Vented?: ☒ Y ☐ N Locking?: ☒ Y ☐ N

Well cap:

Material: Plastic and rubber

Vented?: ☐ Y ☒ N

D. GROUNDWATER MEASUREMENT (±0.01 foot below top of inner well casing)

Water level: 19.56' **Stabilization time**: < 1 minute

Well development method: Surged and pumped

Average depth of frost line: 4 ft

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature: [signature] **Certification #**: 9361 **Date**: 12-19-2019

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½ inch x 11 inch map showing locations of all monitoring wells and piezometers.

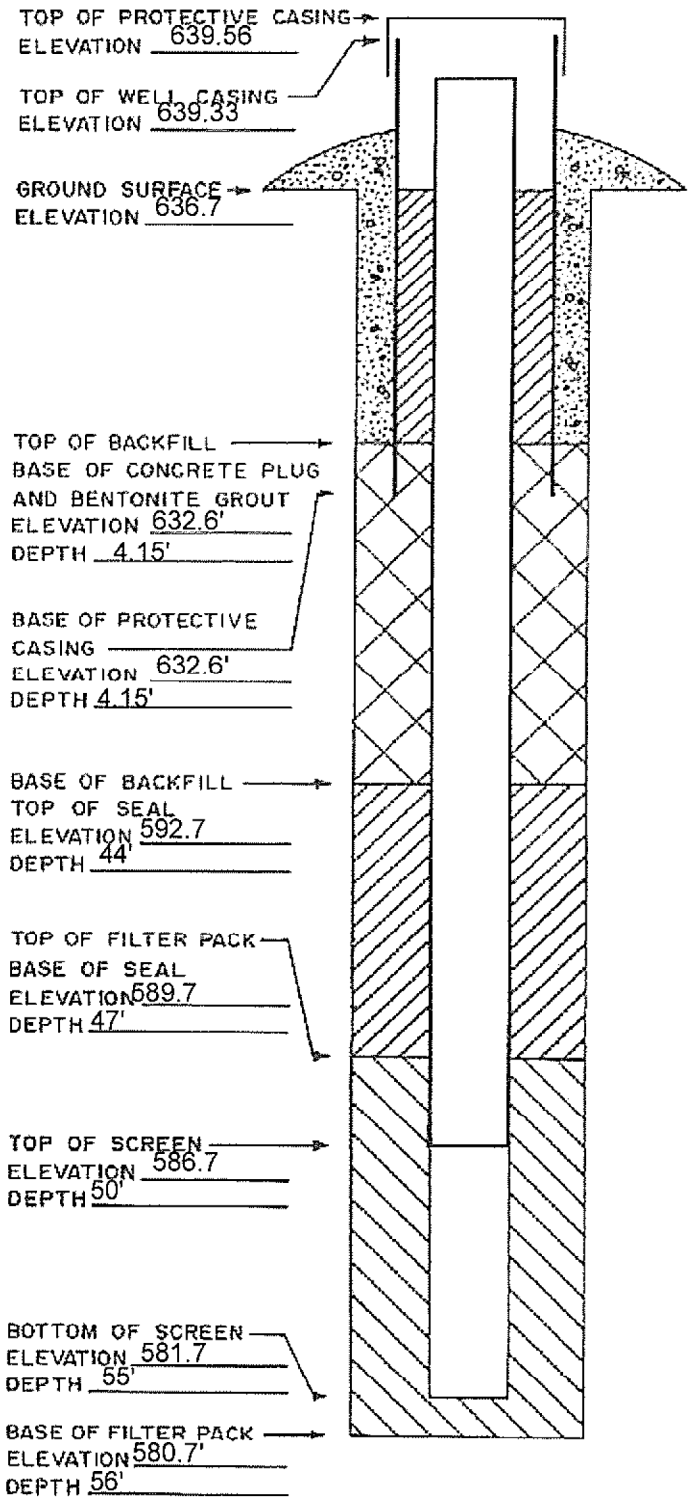
Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.

Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

ELEVATIONS: ± 0.01 FT. MSL

DEPTHS: ± 0.1 FT. FROM GROUND SERFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL).



SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-307

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/22/2021	6/22/2021	Roto-Sonic

DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		628.5 Feet	640.70 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,777 N, 5,541,269 E S / C / N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43 ° 20 ' 2.56 "
Long -91 ° 10 ' 9.97 "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Hydrovaced to 12' below ground surface with some cave-in to about 10'.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10	POORLY GRADED SAND, medium grained, yellowish brown (10YR 5/4) with 4" layer of gray sand (10YR 5/1), shells and subroundd gravel.										
S1	60		11		SP					W				
			12											
			13											
			14											
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-307

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			16	Same as above , shells still present with more gray sand.	SP									
			17											
S2	60		18	SILT, dark gray to black (5Y 2.5/2), with trace very fine grained sand and gravel/cobbles.	ML				0.75	W/M				
			19											
			20	Same as above but gray (5Y 4/1).										
S3	12									W/M				
			21	End of boring at 21' below ground surface.										
				Well placed from 20' with 10' screen at 20 to 10'.										

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-307A

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/22/2021	6/22/2021	Roto-Sonic

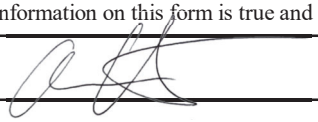
DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		622.8 Feet	640.60 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,775 N, 5,541,261 E S/C/N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43° 20' 2.54"
Long -91° 10' 10.08"
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1–9	Hydrovaced to 12' below ground surface with some cave-in to about 10'.										
S1	60		10–15	POORLY GRADED SAND, medium grained, yellowish brown (10YR 5/4) with 8" layer of gray sand (10YR 5/1) with trace shells and sub-rounded gravel.	SP					M/W				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature  Firm SCS Engineers
2830 Dairy Drive, Madison, WI 53718
Tel:
Fax:

Boring Number MW-307A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16											
			17											
S2	48		18		SP					W				
			19											
			20	SILT, dark gray, dark gray to black, (5Y 2.5/2) with fine grained sand and trace gravel.										
			21											
			22											
S3	60		23		ML				1.5-2.5	M				
			24											
			25	LEAN CLAY, black (5Y 2.5/1), soft.										
			26											
			27											
S4	60		28						0.75	W				
			29											
			30	Same as above but very soft with trace fine to medium grained sand.	CL									
			31											
			32											
S5	60		33						0.0	M/W				
			34											
			35											
			36	POORLY GRADED GRAVEL WITH SAND, fine to coarse gravel, sub-rounded to sub-angular, sand is fine to coarse grained, dark brownish gray (2.5Y 4/2) with trace silt.										
			37											
S6	24		38		GP				0.0	W				
			39											
			40											

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-307A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			41		GP									
			41	SILT, dark gray (5Y 3/1), with trace sand, gravel and cobbles.	ML									
			42	WELL GRADED SAND, fine to medium grained, yellow (2.Y 7/6) with gravel and pieces of shell.	SW									
S7	56		43	SILT, dark gray (5Y 4/1) and transitions to olive brown (2.5Y 4/4), very soft.	ML				0.0	W				
			44											
			45	POORLY GRADED SAND, fine to medium grained, light olive brown (2.5Y 5/4) with trace silt.	SP									
			46											
			47	SANDY SILT, light olive brown (2.5Y 5/3), very soft, sand is fine to medium grained.	ML									
			48	SILTY SAND, fine to coarse grained, olive yellow (2.5Y 6/8).	SM									
S8	70		49	POORLY GRADED GRAVEL WITH SAND AND SILT, coarse gravel, sand and silt are light olive brown (2.5Y 5/4), sand is fine to coarse grained.	GP-GM				0.0	W				
			50	SANDY SILT WITH GRAVEL, gray to dark gray (2.5Y 4/1), sand is fine to coarse grained, gravel is coarse, sub-rounded with trace cobbles, very soft.	ML									
			51											
			52	End of boring at 52' below ground surface.										

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-308

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/22/2021	6/22/2021	Roto-Sonic

DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		618.8 Feet	635.70 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,958,236 N, 5,541,333 E S / C / N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43 ° 20 ' 7.07 "
Long -91 ° 10 ' 8.94 "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			1	Hydrovaced to 8 feet below ground surface and blind drilled the from 8 to 10'.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											Blind drilled 2 ft of slough from 8 to 10' bgs.
			10	WELL SORTED SAND, fine to coarse grained, very dark grayish brown (10YR 3/2).	SW									
			11	SILT, gray to dark gray (2.5Y 3/2) with sticks, roots, and trace sand throughout, very soft.										
			12											
S1	60		13		ML				0.0	W				
			14											
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-308

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	Same as above but with trace roots, no sticks, and pockets of sand, very sort.										
			17											
S2	60		18		ML				0.0	W				
			19											
			20	Same as above but very trace roots.										
S3	40		21	SANDY SILT, gray to dark gray, (2.5Y 3/2), no visible roots, very soft.	ML				0.0	W				slough in hole, actual recovery was ~2"
			22	End of boring at 22' below ground surface.										

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-309

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/23/2021	6/23/2021	Roto-Sonic

DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		619.4 Feet	636.10 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,958,229 N, 5,541,010 E S / C / N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43° 20' 7.10"
Long -91° 10' 13.31"
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	Hydrovaced to 8' below ground surface.										
			1	Hole collapsed to 6' bgs.										
			2											
			3											
			4											
			5											
			6	WELL GRADED SAND, fine to coarse grained, grayish brown to brown (10YR 4/3) with trace coal (slough).										
S1	20		7											
			8		SP									Slough from 6 to 10 feet.
			9											
			10	SILT, dark gray to black (5Y 2.5/1) with trace roots, 4" layer of black organic soil with trace gravel and sticks.										
			11											
			12		ML-OL									
S2	60		13											
			14	SILTY SAND WITH GRAVEL, fine to coarse grained, gray to dark gray (5Y 4/1), gravel is										
			15		SM									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

Boring Number MW-309

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				sub-rounded.										
			16	SILT, dark gray (5Y 3/1), with roots and trace sticks, very soft.										
			17											
S3	60		18		ML									
			19											
			20	SANDY SILT, very dark gray (5Y 3/1) with roots, trace gravel and peices of limestone at bottom of sample, sand is fine to medium grain.										
			21											
			22											
S4	60		23		ML									
			24											
			25											
				End of boring at 25' below ground surface.										
				Well placed from 22' with 10' screen at 22 to 12'.										

Appendix C

Laboratory Reports

eurofins | Environment Testing

ANALYTICAL REPORT

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-242903-1
Client Project/Site: Alliant Lansing 25222070

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett

Jodie Bracken

Authorized for release by:
11/4/2022 8:58:24 AM
Jodie Bracken, Project Management Assistant II
Jodie.Bracken@et.eurofinsus.com

Designee for

Sandie Fredrick, Project Manager II
(920)261-1660
Sandra.Fredrick@et.eurofinsus.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Case Narrative

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Job ID: 310-242903-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative
310-242903-1

Comments
No additional comments.

Receipt
The samples were received on 10/21/2022 9:35 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 6 coolers at receipt time were -1.1º C, -0.8º C, -0.8º C, -0.7º C, -0.4º C and -0.3º C.

HPLC/IC
Method 9056A: The following samples were diluted due to the nature of the sample matrix: MW-301 (310-242903-1), MW-302 (310-242903-2), MW-303 (310-242903-3), MW-304 (310-242903-4), MW-305 (310-242903-5), MW-306 (310-242903-6), MW-302A (310-242903-7), MW-304A (310-242903-8), MW-306A (310-242903-9), MW-307 (310-242903-10), MW-307A (310-242903-11), MW-6 (310-242903-12) and Field Blank (310-242903-13). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-242903-1	MW-301	Water	10/17/22 15:15	10/21/22 09:35
310-242903-2	MW-302	Water	10/19/22 12:50	10/21/22 09:35
310-242903-3	MW-303	Water	10/17/22 16:25	10/21/22 09:35
310-242903-4	MW-304	Water	10/17/22 11:40	10/21/22 09:35
310-242903-5	MW-305	Water	10/18/22 17:00	10/21/22 09:35
310-242903-6	MW-306	Water	10/19/22 09:55	10/21/22 09:35
310-242903-7	MW-302A	Water	10/17/22 13:45	10/21/22 09:35
310-242903-8	MW-304A	Water	10/17/22 12:30	10/21/22 09:35
310-242903-9	MW-306A	Water	10/19/22 11:00	10/21/22 09:35
310-242903-10	MW-307	Water	10/18/22 11:55	10/21/22 09:35
310-242903-11	MW-307A	Water	10/18/22 11:00	10/21/22 09:35
310-242903-12	MW-6	Water	10/18/22 09:15	10/21/22 09:35
310-242903-13	Field Blank	Water	10/19/22 10:30	10/21/22 09:35

Detection Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-301 — Lab Sample ID: 310-242903-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	15		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	63		5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	5.0		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	160		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	260		100	58	ug/L	1		6020A	Total/NA
Calcium	67		0.50	0.19	mg/L	1		6020A	Total/NA
Lithium	8.7	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	12		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	280		50	26	mg/L	1		SM 2540C	Total/NA
pH	8.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	630.79				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-185.1				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.08				mg/L	1		Field Sampling	Total/NA
pH, Field	8.10				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	526.0				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	12.5				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	1.31				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-302 — Lab Sample ID: 310-242903-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11		5.0	2.3	mg/L	5		9056A	Total/NA
Arsenic	51		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	790		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	780		100	58	ug/L	1		6020A	Total/NA
Calcium	110		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	1.2		0.50	0.19	ug/L	1		6020A	Total/NA
Lead	0.39	J	0.50	0.24	ug/L	1		6020A	Total/NA
Molybdenum	1.2	J	2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	520		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	629.51				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-186.2				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.03				mg/L	1		Field Sampling	Total/NA
pH, Field	6.87				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1045.0				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	14.5				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	23.33				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-303 — Lab Sample ID: 310-242903-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	17		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	58		5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	1.9	J	2.0	0.75	ug/L	1		6020A	Total/NA
Barium	230		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	590		100	58	ug/L	1		6020A	Total/NA
Calcium	42		0.50	0.19	mg/L	1		6020A	Total/NA
Lithium	10		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	22		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	200		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample ID: MW-303 (Continued) — Lab Sample ID: 310-242903-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ground Water Elevation	639.39				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	25.5				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.11				mg/L	1		Field Sampling	Total/NA
pH, Field	7.66				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	397.1				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	23.1				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	2.07				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-304 — Lab Sample ID: 310-242903-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.6		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	14		5.0	2.0	mg/L	5		9056A	Total/NA
Barium	49		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	78	J	100	58	ug/L	1		6020A	Total/NA
Calcium	79		0.50	0.19	mg/L	1		6020A	Total/NA
Molybdenum	2.1		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	290		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	621.21				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	169.2				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	6.97				mg/L	1		Field Sampling	Total/NA
pH, Field	7.17				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	643.3				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	11.9				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.01				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-305 — Lab Sample ID: 310-242903-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.5		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	3.6	J	5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	4.7		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	230		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	240		100	58	ug/L	1		6020A	Total/NA
Calcium	80		0.50	0.19	mg/L	1		6020A	Total/NA
Total Dissolved Solids	300		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	626.36				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-186.6				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.06				mg/L	1		Field Sampling	Total/NA
pH, Field	7.32				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	607.2				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	15.7				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	8.17				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-306 — Lab Sample ID: 310-242903-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	32		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	500		20	8.0	mg/L	20		9056A	Total/NA
Arsenic	7.1		2.0	0.75	ug/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-306 (Continued) — Lab Sample ID: 310-242903-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	390		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	600		100	58	ug/L	1		6020A	Total/NA
Calcium	280		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.30	J	0.50	0.19	ug/L	1		6020A	Total/NA
Lithium	27		10	2.5	ug/L	1		6020A	Total/NA
Total Dissolved Solids	1500		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	619.79				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-173.1				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.07				mg/L	1		Field Sampling	Total/NA
pH, Field	6.80				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	2120.0				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	15.4				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.98				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-302A — Lab Sample ID: 310-242903-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.2		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	44		5.0	2.0	mg/L	5		9056A	Total/NA
Barium	50		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	190		100	58	ug/L	1		6020A	Total/NA
Calcium	74		0.50	0.19	mg/L	1		6020A	Total/NA
Total Dissolved Solids	310		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.5	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	622.97				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	105.7				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	6.27				mg/L	1		Field Sampling	Total/NA
pH, Field	7.28				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	619.9				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	11.6				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	1.39				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-304A — Lab Sample ID: 310-242903-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	16		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	69		5.0	2.0	mg/L	5		9056A	Total/NA
Barium	29		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	1600		100	58	ug/L	1		6020A	Total/NA
Cadmium	0.076	J	0.10	0.055	ug/L	1		6020A	Total/NA
Calcium	37		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.88		0.50	0.19	ug/L	1		6020A	Total/NA
Lead	1.1		0.50	0.24	ug/L	1		6020A	Total/NA
Molybdenum	130		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	270		50	26	mg/L	1		SM 2540C	Total/NA
pH	8.0	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	623.56				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-24.7				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.13				mg/L	1		Field Sampling	Total/NA
pH, Field	7.81				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	480.6				umhos/cm	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-304A (Continued) — Lab Sample ID: 310-242903-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Temperature, Field	10.6				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	77.88				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-306A — Lab Sample ID: 310-242903-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.8		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	34		5.0	2.0	mg/L	5		9056A	Total/NA
Barium	62		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	290		100	58	ug/L	1		6020A	Total/NA
Calcium	77		0.50	0.19	mg/L	1		6020A	Total/NA
Total Dissolved Solids	350		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.5	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	620.05				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-91.1				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	1.30				mg/L	1		Field Sampling	Total/NA
pH, Field	7.25				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	624.3				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	14.0				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	3.21				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-307 — Lab Sample ID: 310-242903-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	120		5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	2.7		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	280		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	1100		100	58	ug/L	1		6020A	Total/NA
Calcium	39		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.19	J	0.50	0.19	ug/L	1		6020A	Total/NA
Lithium	13		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	25		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	900		50	26	mg/L	1		SM 2540C	Total/NA
pH	8.1	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	639.23				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-175.6				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.16				mg/L	1		Field Sampling	Total/NA
pH, Field	8.44				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	399.6				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	15.7				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	4.34				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-307A — Lab Sample ID: 310-242903-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	27		5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	1.9	J	2.0	0.75	ug/L	1		6020A	Total/NA
Barium	100		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	680		100	58	ug/L	1		6020A	Total/NA
Calcium	52		0.50	0.19	mg/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-307A (Continued) — Lab Sample ID: 310-242903-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.65		0.50	0.19	ug/L	1		6020A	Total/NA
Molybdenum	6.6		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	270		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.7	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	625.77				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-99.4				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.10				mg/L	1		Field Sampling	Total/NA
pH, Field	7.59				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	518.7				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	11.4				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	2.57				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-6 — Lab Sample ID: 310-242903-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.1		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	21		5.0	2.0	mg/L	5		9056A	Total/NA
Barium	49		2.0	0.88	ug/L	1		6020A	Total/NA
Calcium	70		0.50	0.19	mg/L	1		6020A	Total/NA
Total Dissolved Solids	250		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.6	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	665.34				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	47.3				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	8.16				mg/L	1		Field Sampling	Total/NA
pH, Field	7.40				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	552.6				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	9.7				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.60				NTU	1		Field Sampling	Total/NA

Client Sample ID: Field Blank — Lab Sample ID: 310-242903-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	7.1	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-301

Date Collected: 10/17/22 15:15
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-1

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**15**		5.0	2.3	mg/L			11/02/22 23:24	5
Fluoride	<0.22		0.50	0.22	mg/L			11/02/22 23:24	5
Sulfate	**63**		5.0	2.0	mg/L			11/02/22 23:24	5

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		10/24/22 10:00	11/02/22 17:58	1
Arsenic	**5.0**		2.0	0.75	ug/L		10/24/22 10:00	11/02/22 17:58	1
Barium	**160**		2.0	0.88	ug/L		10/24/22 10:00	11/02/22 17:58	1
Beryllium	<0.27		1.0	0.27	ug/L		10/24/22 10:00	11/02/22 17:58	1
Boron	**260**		100	58	ug/L		10/24/22 10:00	11/02/22 17:58	1
Cadmium	<0.055		0.10	0.055	ug/L		10/24/22 10:00	11/02/22 17:58	1
Calcium	**67**		0.50	0.19	mg/L		10/24/22 10:00	11/02/22 17:58	1
Chromium	<1.1		5.0	1.1	ug/L		10/24/22 10:00	11/02/22 17:58	1
Cobalt	<0.19		0.50	0.19	ug/L		10/24/22 10:00	11/02/22 17:58	1
Lead	<0.24		0.50	0.24	ug/L		10/24/22 10:00	11/02/22 17:58	1
Lithium	**8.7**	**J**	10	2.5	ug/L		10/24/22 10:00	11/02/22 17:58	1
Molybdenum	**12**		2.0	1.2	ug/L		10/24/22 10:00	11/02/22 17:58	1
Selenium	<0.96		5.0	0.96	ug/L		10/24/22 10:00	11/02/22 17:58	1
Thallium	<0.26		1.0	0.26	ug/L		10/24/22 10:00	11/02/22 17:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**280**		50	26	mg/L			10/22/22 10:34	1
pH (SM 4500 H+ B)	**8.2**	**HF**	0.1	0.1	SU			10/21/22 12:03	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**630.79**				ft			10/17/22 15:15	1
Oxidation Reduction Potential	**-185.1**				millivolts			10/17/22 15:15	1
Oxygen, Dissolved, Client Supplied	**0.08**				mg/L			10/17/22 15:15	1
pH, Field	**8.10**				SU			10/17/22 15:15	1
Specific Conductance, Field	**526.0**				umhos/cm			10/17/22 15:15	1
Temperature, Field	**12.5**				Degrees C			10/17/22 15:15	1
Turbidity, Field	**1.31**				NTU			10/17/22 15:15	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-302

Date Collected: 10/19/22 12:50
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-2

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11**		5.0	2.3	mg/L			11/02/22 23:37	5
Fluoride	<0.22		0.50	0.22	mg/L			11/02/22 23:37	5
Sulfate	<2.0		5.0	2.0	mg/L			11/02/22 23:37	5

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		10/24/22 10:00	11/02/22 18:01	1
Arsenic	**51**		2.0	0.75	ug/L		10/24/22 10:00	11/02/22 18:01	1
Barium	**790**		2.0	0.88	ug/L		10/24/22 10:00	11/02/22 18:01	1
Beryllium	<0.27		1.0	0.27	ug/L		10/24/22 10:00	11/02/22 18:01	1
Boron	**780**		100	58	ug/L		10/24/22 10:00	11/02/22 18:01	1
Cadmium	<0.055		0.10	0.055	ug/L		10/24/22 10:00	11/02/22 18:01	1
Calcium	**110**		0.50	0.19	mg/L		10/24/22 10:00	11/02/22 18:01	1
Chromium	<1.1		5.0	1.1	ug/L		10/24/22 10:00	11/02/22 18:01	1
Cobalt	**1.2**		0.50	0.19	ug/L		10/24/22 10:00	11/02/22 18:01	1
Lead	**0.39**	**J**	0.50	0.24	ug/L		10/24/22 10:00	11/02/22 18:01	1
Lithium	<2.5		10	2.5	ug/L		10/24/22 10:00	11/02/22 18:01	1
Molybdenum	**1.2**	**J**	2.0	1.2	ug/L		10/24/22 10:00	11/02/22 18:01	1
Selenium	<0.96		5.0	0.96	ug/L		10/24/22 10:00	11/02/22 18:01	1
Thallium	<0.26		1.0	0.26	ug/L		10/24/22 10:00	11/02/22 18:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**520**		50	26	mg/L			10/24/22 17:04	1
pH (SM 4500 H+ B)	**7.0**	**HF**	0.1	0.1	SU			10/21/22 12:20	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**629.51**				ft			10/19/22 12:50	1
Oxidation Reduction Potential	**-186.2**				millivolts			10/19/22 12:50	1
Oxygen, Dissolved, Client Supplied	**0.03**				mg/L			10/19/22 12:50	1
pH, Field	**6.87**				SU			10/19/22 12:50	1
Specific Conductance, Field	**1045.0**				umhos/cm			10/19/22 12:50	1
Temperature, Field	**14.5**				Degrees C			10/19/22 12:50	1
Turbidity, Field	**23.33**				NTU			10/19/22 12:50	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-303

Date Collected: 10/17/22 16:25
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-3

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17		5.0	2.3	mg/L			11/02/22 23:50	5
Fluoride	<0.22		0.50	0.22	mg/L			11/02/22 23:50	5
Sulfate	58		5.0	2.0	mg/L			11/02/22 23:50	5

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		10/24/22 10:00	11/02/22 18:04	1
Arsenic	1.9	J	2.0	0.75	ug/L		10/24/22 10:00	11/02/22 18:04	1
Barium	230		2.0	0.88	ug/L		10/24/22 10:00	11/02/22 18:04	1
Beryllium	<0.27		1.0	0.27	ug/L		10/24/22 10:00	11/02/22 18:04	1
Boron	590		100	58	ug/L		10/24/22 10:00	11/02/22 18:04	1
Cadmium	<0.055		0.10	0.055	ug/L		10/24/22 10:00	11/02/22 18:04	1
Calcium	42		0.50	0.19	mg/L		10/24/22 10:00	11/02/22 18:04	1
Chromium	<1.1		5.0	1.1	ug/L		10/24/22 10:00	11/02/22 18:04	1
Cobalt	<0.19		0.50	0.19	ug/L		10/24/22 10:00	11/02/22 18:04	1
Lead	<0.24		0.50	0.24	ug/L		10/24/22 10:00	11/02/22 18:04	1
Lithium	10		10	2.5	ug/L		10/24/22 10:00	11/02/22 18:04	1
Molybdenum	22		2.0	1.2	ug/L		10/24/22 10:00	11/02/22 18:04	1
Selenium	<0.96		5.0	0.96	ug/L		10/24/22 10:00	11/02/22 18:04	1
Thallium	<0.26		1.0	0.26	ug/L		10/24/22 10:00	11/02/22 18:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	200		50	26	mg/L			10/22/22 10:34	1
pH (SM 4500 H+ B)	7.4	HF	0.1	0.1	SU			10/21/22 12:04	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	639.39				ft			10/17/22 16:25	1
Oxidation Reduction Potential	25.5				millivolts			10/17/22 16:25	1
Oxygen, Dissolved, Client Supplied	0.11				mg/L			10/17/22 16:25	1
pH, Field	7.66				SU			10/17/22 16:25	1
Specific Conductance, Field	397.1				umhos/cm			10/17/22 16:25	1
Temperature, Field	23.1				Degrees C			10/17/22 16:25	1
Turbidity, Field	2.07				NTU			10/17/22 16:25	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-304

Date Collected: 10/17/22 11:40
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-4

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.6**		5.0	2.3	mg/L			11/03/22 00:03	5
Fluoride	<0.22		0.50	0.22	mg/L			11/03/22 00:03	5
Sulfate	**14**		5.0	2.0	mg/L			11/03/22 00:03	5

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		10/24/22 10:00	11/02/22 18:07	1
Arsenic	<0.75		2.0	0.75	ug/L		10/24/22 10:00	11/02/22 18:07	1
Barium	**49**		2.0	0.88	ug/L		10/24/22 10:00	11/02/22 18:07	1
Beryllium	<0.27		1.0	0.27	ug/L		10/24/22 10:00	11/02/22 18:07	1
Boron	**78**	**J**	100	58	ug/L		10/24/22 10:00	11/02/22 18:07	1
Cadmium	<0.055		0.10	0.055	ug/L		10/24/22 10:00	11/02/22 18:07	1
Calcium	**79**		0.50	0.19	mg/L		10/24/22 10:00	11/02/22 18:07	1
Chromium	<1.1		5.0	1.1	ug/L		10/24/22 10:00	11/02/22 18:07	1
Cobalt	<0.19		0.50	0.19	ug/L		10/24/22 10:00	11/02/22 18:07	1
Lead	<0.24		0.50	0.24	ug/L		10/24/22 10:00	11/02/22 18:07	1
Lithium	<2.5		10	2.5	ug/L		10/24/22 10:00	11/02/22 18:07	1
Molybdenum	**2.1**		2.0	1.2	ug/L		10/24/22 10:00	11/02/22 18:07	1
Selenium	<0.96		5.0	0.96	ug/L		10/24/22 10:00	11/02/22 18:07	1
Thallium	<0.26		1.0	0.26	ug/L		10/24/22 10:00	11/02/22 18:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**290**		50	26	mg/L			10/22/22 10:34	1
pH (SM 4500 H+ B)	**7.4**	**HF**	0.1	0.1	SU			10/21/22 12:05	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**621.21**				ft			10/17/22 11:40	1
Oxidation Reduction Potential	**169.2**				millivolts			10/17/22 11:40	1
Oxygen, Dissolved, Client Supplied	**6.97**				mg/L			10/17/22 11:40	1
pH, Field	**7.17**				SU			10/17/22 11:40	1
Specific Conductance, Field	**643.3**				umhos/cm			10/17/22 11:40	1
Temperature, Field	**11.9**				Degrees C			10/17/22 11:40	1
Turbidity, Field	**0.01**				NTU			10/17/22 11:40	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-305

Date Collected: 10/18/22 17:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-5

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.5**		5.0	2.3	mg/L			11/03/22 00:41	5
Fluoride	<0.22		0.50	0.22	mg/L			11/03/22 00:41	5
Sulfate	**3.6**	**J**	5.0	2.0	mg/L			11/03/22 00:41	5

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		10/24/22 10:00	11/02/22 18:11	1
Arsenic	**4.7**		2.0	0.75	ug/L		10/24/22 10:00	11/02/22 18:11	1
Barium	**230**		2.0	0.88	ug/L		10/24/22 10:00	11/02/22 18:11	1
Beryllium	<0.27		1.0	0.27	ug/L		10/24/22 10:00	11/02/22 18:11	1
Boron	**240**		100	58	ug/L		10/24/22 10:00	11/02/22 18:11	1
Cadmium	<0.055		0.10	0.055	ug/L		10/24/22 10:00	11/02/22 18:11	1
Calcium	**80**		0.50	0.19	mg/L		10/24/22 10:00	11/02/22 18:11	1
Chromium	<1.1		5.0	1.1	ug/L		10/24/22 10:00	11/02/22 18:11	1
Cobalt	<0.19		0.50	0.19	ug/L		10/24/22 10:00	11/02/22 18:11	1
Lead	<0.24		0.50	0.24	ug/L		10/24/22 10:00	11/02/22 18:11	1
Lithium	<2.5		10	2.5	ug/L		10/24/22 10:00	11/02/22 18:11	1
Molybdenum	<1.2		2.0	1.2	ug/L		10/24/22 10:00	11/02/22 18:11	1
Selenium	<0.96		5.0	0.96	ug/L		10/24/22 10:00	11/02/22 18:11	1
Thallium	<0.26		1.0	0.26	ug/L		10/24/22 10:00	11/02/22 18:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**300**		50	26	mg/L			10/22/22 11:38	1
pH (SM 4500 H+ B)	**7.4**	**HF**	0.1	0.1	SU			10/21/22 12:06	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**626.36**				ft			10/18/22 17:00	1
Oxidation Reduction Potential	**-186.6**				millivolts			10/18/22 17:00	1
Oxygen, Dissolved, Client Supplied	**0.06**				mg/L			10/18/22 17:00	1
pH, Field	**7.32**				SU			10/18/22 17:00	1
Specific Conductance, Field	**607.2**				umhos/cm			10/18/22 17:00	1
Temperature, Field	**15.7**				Degrees C			10/18/22 17:00	1
Turbidity, Field	**8.17**				NTU			10/18/22 17:00	1

Client Sample Results

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-306

Date Collected: 10/19/22 09:55
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-6

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**32**		5.0	2.3	mg/L			11/03/22 00:54	5
Fluoride	<0.22		0.50	0.22	mg/L			11/03/22 00:54	5
Sulfate	**500**		20	8.0	mg/L			11/03/22 09:24	20

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		10/24/22 10:00	11/02/22 18:17	1
Arsenic	**7.1**		2.0	0.75	ug/L		10/24/22 10:00	11/02/22 18:17	1
Barium	**390**		2.0	0.88	ug/L		10/24/22 10:00	11/02/22 18:17	1
Beryllium	<0.27		1.0	0.27	ug/L		10/24/22 10:00	11/02/22 18:17	1
Boron	**600**		100	58	ug/L		10/24/22 10:00	11/02/22 18:17	1
Cadmium	<0.055		0.10	0.055	ug/L		10/24/22 10:00	11/02/22 18:17	1
Calcium	**280**		0.50	0.19	mg/L		10/24/22 10:00	11/02/22 18:17	1
Chromium	<1.1		5.0	1.1	ug/L		10/24/22 10:00	11/02/22 18:17	1
Cobalt	**0.30**	**J**	0.50	0.19	ug/L		10/24/22 10:00	11/02/22 18:17	1
Lead	<0.24		0.50	0.24	ug/L		10/24/22 10:00	11/02/22 18:17	1
Lithium	**27**		10	2.5	ug/L		10/24/22 10:00	11/02/22 18:17	1
Molybdenum	<1.2		2.0	1.2	ug/L		10/24/22 10:00	11/02/22 18:17	1
Selenium	<0.96		5.0	0.96	ug/L		10/24/22 10:00	11/02/22 18:17	1
Thallium	<0.26		1.0	0.26	ug/L		10/24/22 10:00	11/02/22 18:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1500**		50	26	mg/L			10/24/22 17:04	1
pH (SM 4500 H+ B)	**7.0**	**HF**	0.1	0.1	SU			10/21/22 12:07	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**619.79**				ft			10/19/22 09:55	1
Oxidation Reduction Potential	**-173.1**				millivolts			10/19/22 09:55	1
Oxygen, Dissolved, Client Supplied	**0.07**				mg/L			10/19/22 09:55	1
pH, Field	**6.80**				SU			10/19/22 09:55	1
Specific Conductance, Field	**2120.0**				umhos/cm			10/19/22 09:55	1
Temperature, Field	**15.4**				Degrees C			10/19/22 09:55	1
Turbidity, Field	**0.98**				NTU			10/19/22 09:55	1

Client Sample Results

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-302A

Date Collected: 10/17/22 13:45
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-7

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.2**		5.0	2.3	mg/L			11/03/22 01:07	5
Fluoride	<0.22		0.50	0.22	mg/L			11/03/22 01:07	5
Sulfate	**44**		5.0	2.0	mg/L			11/03/22 01:07	5

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		10/24/22 10:00	11/02/22 18:20	1
Arsenic	<0.75		2.0	0.75	ug/L		10/24/22 10:00	11/02/22 18:20	1
Barium	**50**		2.0	0.88	ug/L		10/24/22 10:00	11/02/22 18:20	1
Beryllium	<0.27		1.0	0.27	ug/L		10/24/22 10:00	11/02/22 18:20	1
Boron	**190**		100	58	ug/L		10/24/22 10:00	11/02/22 18:20	1
Cadmium	<0.055		0.10	0.055	ug/L		10/24/22 10:00	11/02/22 18:20	1
Calcium	**74**		0.50	0.19	mg/L		10/24/22 10:00	11/02/22 18:20	1
Chromium	<1.1		5.0	1.1	ug/L		10/24/22 10:00	11/02/22 18:20	1
Cobalt	<0.19		0.50	0.19	ug/L		10/24/22 10:00	11/02/22 18:20	1
Lead	<0.24		0.50	0.24	ug/L		10/24/22 10:00	11/02/22 18:20	1
Lithium	<2.5		10	2.5	ug/L		10/24/22 10:00	11/02/22 18:20	1
Molybdenum	<1.2		2.0	1.2	ug/L		10/24/22 10:00	11/02/22 18:20	1
Selenium	<0.96		5.0	0.96	ug/L		10/24/22 10:00	11/02/22 18:20	1
Thallium	<0.26		1.0	0.26	ug/L		10/24/22 10:00	11/02/22 18:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**310**		50	26	mg/L			10/22/22 10:34	1
pH (SM 4500 H+ B)	**7.5**	**HF**	0.1	0.1	SU			10/21/22 12:08	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**622.97**				ft			10/17/22 13:45	1
Oxidation Reduction Potential	**105.7**				millivolts			10/17/22 13:45	1
Oxygen, Dissolved, Client Supplied	**6.27**				mg/L			10/17/22 13:45	1
pH, Field	**7.28**				SU			10/17/22 13:45	1
Specific Conductance, Field	**619.9**				umhos/cm			10/17/22 13:45	1
Temperature, Field	**11.6**				Degrees C			10/17/22 13:45	1
Turbidity, Field	**1.39**				NTU			10/17/22 13:45	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-304A

Date Collected: 10/17/22 12:30
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-8

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**16**		5.0	2.3	mg/L			11/03/22 01:20	5
Fluoride	<0.22		0.50	0.22	mg/L			11/03/22 01:20	5
Sulfate	**69**		5.0	2.0	mg/L			11/03/22 01:20	5

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		10/24/22 10:00	11/02/22 18:46	1
Arsenic	<0.75		2.0	0.75	ug/L		10/24/22 10:00	11/02/22 18:46	1
Barium	**29**		2.0	0.88	ug/L		10/24/22 10:00	11/02/22 18:46	1
Beryllium	<0.27		1.0	0.27	ug/L		10/24/22 10:00	11/02/22 18:46	1
Boron	**1600**		100	58	ug/L		10/24/22 10:00	11/02/22 18:46	1
Cadmium	**0.076**	**J**	0.10	0.055	ug/L		10/24/22 10:00	11/02/22 18:46	1
Calcium	**37**		0.50	0.19	mg/L		10/24/22 10:00	11/02/22 18:46	1
Chromium	<1.1		5.0	1.1	ug/L		10/24/22 10:00	11/02/22 18:46	1
Cobalt	**0.88**		0.50	0.19	ug/L		10/24/22 10:00	11/02/22 18:46	1
Lead	**1.1**		0.50	0.24	ug/L		10/24/22 10:00	11/02/22 18:46	1
Lithium	<2.5		10	2.5	ug/L		10/24/22 10:00	11/02/22 18:46	1
Molybdenum	**130**		2.0	1.2	ug/L		10/24/22 10:00	11/02/22 18:46	1
Selenium	<0.96		5.0	0.96	ug/L		10/24/22 10:00	11/02/22 18:46	1
Thallium	<0.26		1.0	0.26	ug/L		10/24/22 10:00	11/02/22 18:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**270**		50	26	mg/L			10/22/22 10:34	1
pH (SM 4500 H+ B)	**8.0**	**HF**	0.1	0.1	SU			10/21/22 12:10	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**623.56**				ft			10/17/22 12:30	1
Oxidation Reduction Potential	**-24.7**				millivolts			10/17/22 12:30	1
Oxygen, Dissolved, Client Supplied	**0.13**				mg/L			10/17/22 12:30	1
pH, Field	**7.81**				SU			10/17/22 12:30	1
Specific Conductance, Field	**480.6**				umhos/cm			10/17/22 12:30	1
Temperature, Field	**10.6**				Degrees C			10/17/22 12:30	1
Turbidity, Field	**77.88**				NTU			10/17/22 12:30	1

Client Sample Results

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-306A

Date Collected: 10/19/22 11:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-9

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.8**		5.0	2.3	mg/L			11/03/22 01:33	5
Fluoride	<0.22		0.50	0.22	mg/L			11/03/22 01:33	5
Sulfate	**34**		5.0	2.0	mg/L			11/03/22 01:33	5

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		10/24/22 10:00	11/02/22 19:11	1
Arsenic	<0.75		2.0	0.75	ug/L		10/24/22 10:00	11/02/22 19:11	1
Barium	**62**		2.0	0.88	ug/L		10/24/22 10:00	11/02/22 19:11	1
Beryllium	<0.27		1.0	0.27	ug/L		10/24/22 10:00	11/02/22 19:11	1
Boron	**290**		100	58	ug/L		10/24/22 10:00	11/02/22 19:11	1
Cadmium	<0.055		0.10	0.055	ug/L		10/24/22 10:00	11/02/22 19:11	1
Calcium	**77**		0.50	0.19	mg/L		10/24/22 10:00	11/02/22 19:11	1
Chromium	<1.1		5.0	1.1	ug/L		10/24/22 10:00	11/02/22 19:11	1
Cobalt	<0.19		0.50	0.19	ug/L		10/24/22 10:00	11/02/22 19:11	1
Lead	<0.24		0.50	0.24	ug/L		10/24/22 10:00	11/02/22 19:11	1
Lithium	<2.5		10	2.5	ug/L		10/24/22 10:00	11/02/22 19:11	1
Molybdenum	<1.2		2.0	1.2	ug/L		10/24/22 10:00	11/02/22 19:11	1
Selenium	<0.96		5.0	0.96	ug/L		10/24/22 10:00	11/02/22 19:11	1
Thallium	<0.26		1.0	0.26	ug/L		10/24/22 10:00	11/02/22 19:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**350**		50	26	mg/L			10/24/22 17:04	1
pH (SM 4500 H+ B)	**7.5**	**HF**	0.1	0.1	SU			10/21/22 12:09	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**620.05**				ft			10/19/22 11:00	1
Oxidation Reduction Potential	**-91.1**				millivolts			10/19/22 11:00	1
Oxygen, Dissolved, Client Supplied	**1.30**				mg/L			10/19/22 11:00	1
pH, Field	**7.25**				SU			10/19/22 11:00	1
Specific Conductance, Field	**624.3**				umhos/cm			10/19/22 11:00	1
Temperature, Field	**14.0**				Degrees C			10/19/22 11:00	1
Turbidity, Field	**3.21**				NTU			10/19/22 11:00	1

Client Sample Results

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-307

Date Collected: 10/18/22 11:55
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-10

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**18**		5.0	2.3	mg/L			11/03/22 01:46	5
Fluoride	<0.22		0.50	0.22	mg/L			11/03/22 01:46	5
Sulfate	**120**		5.0	2.0	mg/L			11/03/22 01:46	5

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		10/24/22 10:00	11/02/22 19:14	1
Arsenic	**2.7**		2.0	0.75	ug/L		10/24/22 10:00	11/02/22 19:14	1
Barium	**280**		2.0	0.88	ug/L		10/24/22 10:00	11/02/22 19:14	1
Beryllium	<0.27		1.0	0.27	ug/L		10/24/22 10:00	11/02/22 19:14	1
Boron	**1100**		100	58	ug/L		10/24/22 10:00	11/02/22 19:14	1
Cadmium	<0.055		0.10	0.055	ug/L		10/24/22 10:00	11/02/22 19:14	1
Calcium	**39**		0.50	0.19	mg/L		10/24/22 10:00	11/02/22 19:14	1
Chromium	<1.1		5.0	1.1	ug/L		10/24/22 10:00	11/02/22 19:14	1
Cobalt	**0.19**	**J**	0.50	0.19	ug/L		10/24/22 10:00	11/02/22 19:14	1
Lead	<0.24		0.50	0.24	ug/L		10/24/22 10:00	11/02/22 19:14	1
Lithium	**13**		10	2.5	ug/L		10/24/22 10:00	11/02/22 19:14	1
Molybdenum	**25**		2.0	1.2	ug/L		10/24/22 10:00	11/02/22 19:14	1
Selenium	<0.96		5.0	0.96	ug/L		10/24/22 10:00	11/02/22 19:14	1
Thallium	<0.26		1.0	0.26	ug/L		10/24/22 10:00	11/02/22 19:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**900**		50	26	mg/L			10/22/22 11:38	1
pH (SM 4500 H+ B)	**8.1**	**HF**	0.1	0.1	SU			10/21/22 12:11	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**639.23**				ft			10/18/22 11:55	1
Oxidation Reduction Potential	**-175.6**				millivolts			10/18/22 11:55	1
Oxygen, Dissolved, Client Supplied	**0.16**				mg/L			10/18/22 11:55	1
pH, Field	**8.44**				SU			10/18/22 11:55	1
Specific Conductance, Field	**399.6**				umhos/cm			10/18/22 11:55	1
Temperature, Field	**15.7**				Degrees C			10/18/22 11:55	1
Turbidity, Field	**4.34**				NTU			10/18/22 11:55	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-307A

Date Collected: 10/18/22 11:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-11

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11**		5.0	2.3	mg/L			11/03/22 01:59	5
Fluoride	<0.22		0.50	0.22	mg/L			11/03/22 01:59	5
Sulfate	**27**		5.0	2.0	mg/L			11/03/22 01:59	5

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		10/24/22 10:00	11/02/22 19:17	1
Arsenic	**1.9**	**J**	2.0	0.75	ug/L		10/24/22 10:00	11/02/22 19:17	1
Barium	**100**		2.0	0.88	ug/L		10/24/22 10:00	11/02/22 19:17	1
Beryllium	<0.27		1.0	0.27	ug/L		10/24/22 10:00	11/02/22 19:17	1
Boron	**680**		100	58	ug/L		10/24/22 10:00	11/02/22 19:17	1
Cadmium	<0.055		0.10	0.055	ug/L		10/24/22 10:00	11/02/22 19:17	1
Calcium	**52**		0.50	0.19	mg/L		10/24/22 10:00	11/02/22 19:17	1
Chromium	<1.1		5.0	1.1	ug/L		10/24/22 10:00	11/02/22 19:17	1
Cobalt	**0.65**		0.50	0.19	ug/L		10/24/22 10:00	11/02/22 19:17	1
Lead	<0.24		0.50	0.24	ug/L		10/24/22 10:00	11/02/22 19:17	1
Lithium	<2.5		10	2.5	ug/L		10/24/22 10:00	11/02/22 19:17	1
Molybdenum	**6.6**		2.0	1.2	ug/L		10/24/22 10:00	11/02/22 19:17	1
Selenium	<0.96		5.0	0.96	ug/L		10/24/22 10:00	11/02/22 19:17	1
Thallium	<0.26		1.0	0.26	ug/L		10/24/22 10:00	11/02/22 19:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**270**		50	26	mg/L			10/22/22 11:38	1
pH (SM 4500 H+ B)	**7.7**	**HF**	0.1	0.1	SU			10/21/22 12:23	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**625.77**				ft			10/18/22 11:00	1
Oxidation Reduction Potential	**-99.4**				millivolts			10/18/22 11:00	1
Oxygen, Dissolved, Client Supplied	**0.10**				mg/L			10/18/22 11:00	1
pH, Field	**7.59**				SU			10/18/22 11:00	1
Specific Conductance, Field	**518.7**				umhos/cm			10/18/22 11:00	1
Temperature, Field	**11.4**				Degrees C			10/18/22 11:00	1
Turbidity, Field	**2.57**				NTU			10/18/22 11:00	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-6

Date Collected: 10/18/22 09:15
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-12

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.1**		5.0	2.3	mg/L			11/03/22 02:12	5
Fluoride	<0.22		0.50	0.22	mg/L			11/03/22 02:12	5
Sulfate	**21**		5.0	2.0	mg/L			11/03/22 02:12	5

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		10/24/22 10:00	11/02/22 19:20	1
Arsenic	<0.75		2.0	0.75	ug/L		10/24/22 10:00	11/02/22 19:20	1
Barium	**49**		2.0	0.88	ug/L		10/24/22 10:00	11/02/22 19:20	1
Beryllium	<0.27		1.0	0.27	ug/L		10/24/22 10:00	11/02/22 19:20	1
Boron	<58		100	58	ug/L		10/24/22 10:00	11/02/22 19:20	1
Cadmium	<0.055		0.10	0.055	ug/L		10/24/22 10:00	11/02/22 19:20	1
Calcium	**70**		0.50	0.19	mg/L		10/24/22 10:00	11/02/22 19:20	1
Chromium	<1.1		5.0	1.1	ug/L		10/24/22 10:00	11/02/22 19:20	1
Cobalt	<0.19		0.50	0.19	ug/L		10/24/22 10:00	11/02/22 19:20	1
Lead	<0.24		0.50	0.24	ug/L		10/24/22 10:00	11/02/22 19:20	1
Lithium	<2.5		10	2.5	ug/L		10/24/22 10:00	11/02/22 19:20	1
Molybdenum	<1.2		2.0	1.2	ug/L		10/24/22 10:00	11/02/22 19:20	1
Selenium	<0.96		5.0	0.96	ug/L		10/24/22 10:00	11/02/22 19:20	1
Thallium	<0.26		1.0	0.26	ug/L		10/24/22 10:00	11/02/22 19:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**250**		50	26	mg/L			10/22/22 10:34	1
pH (SM 4500 H+ B)	**7.6**	**HF**	0.1	0.1	SU			10/21/22 12:22	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**665.34**				ft			10/18/22 09:15	1
Oxidation Reduction Potential	**47.3**				millivolts			10/18/22 09:15	1
Oxygen, Dissolved, Client Supplied	**8.16**				mg/L			10/18/22 09:15	1
pH, Field	**7.40**				SU			10/18/22 09:15	1
Specific Conductance, Field	**552.6**				umhos/cm			10/18/22 09:15	1
Temperature, Field	**9.7**				Degrees C			10/18/22 09:15	1
Turbidity, Field	**0.60**				NTU			10/18/22 09:15	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: Field Blank

Date Collected: 10/19/22 10:30
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-13

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.45		1.0	0.45	mg/L			11/03/22 02:24	1
Fluoride	<0.044		0.10	0.044	mg/L			11/03/22 02:24	1
Sulfate	<0.40		1.0	0.40	mg/L			11/03/22 02:24	1

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		10/24/22 10:00	11/02/22 19:23	1
Arsenic	<0.75		2.0	0.75	ug/L		10/24/22 10:00	11/02/22 19:23	1
Barium	<0.88		2.0	0.88	ug/L		10/24/22 10:00	11/02/22 19:23	1
Beryllium	<0.27		1.0	0.27	ug/L		10/24/22 10:00	11/02/22 19:23	1
Boron	<58		100	58	ug/L		10/24/22 10:00	11/02/22 19:23	1
Cadmium	<0.055		0.10	0.055	ug/L		10/24/22 10:00	11/02/22 19:23	1
Calcium	<0.19		0.50	0.19	mg/L		10/24/22 10:00	11/02/22 19:23	1
Chromium	<1.1		5.0	1.1	ug/L		10/24/22 10:00	11/02/22 19:23	1
Cobalt	<0.19		0.50	0.19	ug/L		10/24/22 10:00	11/02/22 19:23	1
Lead	<0.24		0.50	0.24	ug/L		10/24/22 10:00	11/02/22 19:23	1
Lithium	<2.5		10	2.5	ug/L		10/24/22 10:00	11/02/22 19:23	1
Molybdenum	<1.2		2.0	1.2	ug/L		10/24/22 10:00	11/02/22 19:23	1
Selenium	<0.96		5.0	0.96	ug/L		10/24/22 10:00	11/02/22 19:23	1
Thallium	<0.26		1.0	0.26	ug/L		10/24/22 10:00	11/02/22 19:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	<26		50	26	mg/L			10/22/22 11:38	1
pH (SM 4500 H+ B)	**7.1**	**HF**	0.1	0.1	SU			10/21/22 12:21	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-370820/3
Matrix: Water
Analysis Batch: 370820

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.45		1.0	0.45	mg/L			11/02/22 20:49	1
Fluoride	<0.044		0.10	0.044	mg/L			11/02/22 20:49	1
Sulfate	<0.40		1.0	0.40	mg/L			11/02/22 20:49	1

Lab Sample ID: LCS 310-370820/4
Matrix: Water
Analysis Batch: 370820

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.02		mg/L		90	90 - 110
Fluoride	2.00	1.99		mg/L		99	90 - 110
Sulfate	10.0	9.53		mg/L		95	90 - 110

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-369464/1-A
Matrix: Water
Analysis Batch: 370744

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 369464

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		10/24/22 10:00	11/02/22 17:03	1
Arsenic	<0.75		2.0	0.75	ug/L		10/24/22 10:00	11/02/22 17:03	1
Barium	<0.88		2.0	0.88	ug/L		10/24/22 10:00	11/02/22 17:03	1
Beryllium	<0.27		1.0	0.27	ug/L		10/24/22 10:00	11/02/22 17:03	1
Boron	<58		100	58	ug/L		10/24/22 10:00	11/02/22 17:03	1
Cadmium	<0.055		0.10	0.055	ug/L		10/24/22 10:00	11/02/22 17:03	1
Calcium	<0.19		0.50	0.19	mg/L		10/24/22 10:00	11/02/22 17:03	1
Chromium	<1.1		5.0	1.1	ug/L		10/24/22 10:00	11/02/22 17:03	1
Cobalt	<0.19		0.50	0.19	ug/L		10/24/22 10:00	11/02/22 17:03	1
Lead	<0.24		0.50	0.24	ug/L		10/24/22 10:00	11/02/22 17:03	1
Lithium	<2.5		10	2.5	ug/L		10/24/22 10:00	11/02/22 17:03	1
Molybdenum	<1.2		2.0	1.2	ug/L		10/24/22 10:00	11/02/22 17:03	1
Selenium	<0.96		5.0	0.96	ug/L		10/24/22 10:00	11/02/22 17:03	1
Thallium	<0.26		1.0	0.26	ug/L		10/24/22 10:00	11/02/22 17:03	1

Lab Sample ID: LCS 310-369464/2-A
Matrix: Water
Analysis Batch: 370744

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 369464

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	226		ug/L		113	80 - 120
Arsenic	200	197		ug/L		98	80 - 120
Barium	100	111		ug/L		111	80 - 120
Beryllium	100	105		ug/L		105	80 - 120
Boron	200	220		ug/L		110	80 - 120
Cadmium	100	103		ug/L		103	80 - 120
Calcium	2.00	2.36		mg/L		118	80 - 120
Chromium	100	93.3		ug/L		93	80 - 120
Cobalt	100	107		ug/L		107	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-369464/2-A
Matrix: Water
Analysis Batch: 370744

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 369464

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	200	208		ug/L		104	80 - 120
Lithium	200	212		ug/L		106	80 - 120
Molybdenum	200	216		ug/L		108	80 - 120
Selenium	400	397		ug/L		99	80 - 120
Thallium	200	227		ug/L		114	80 - 120

Lab Sample ID: 310-242903-5 DU
Matrix: Water
Analysis Batch: 370744

Client Sample ID: MW-305
Prep Type: Total/NA
Prep Batch: 369464

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<0.69		<0.69		ug/L		NC	20
Arsenic	4.7		4.66		ug/L		0	20
Barium	230		231		ug/L		1	20
Beryllium	<0.27		<0.27		ug/L		NC	20
Boron	240		239		ug/L		2	20
Cadmium	<0.055		<0.055		ug/L		NC	20
Calcium	80		79.3		mg/L		0.3	20
Chromium	<1.1		<1.1		ug/L		NC	20
Cobalt	<0.19		<0.19		ug/L		NC	20
Lead	<0.24		<0.24		ug/L		NC	20
Lithium	<2.5		<2.5		ug/L		NC	20
Molybdenum	<1.2		<1.2		ug/L		NC	20
Selenium	<0.96		<0.96		ug/L		NC	20
Thallium	<0.26		<0.26		ug/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-369496/1
Matrix: Water
Analysis Batch: 369496

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		50	26	mg/L			10/22/22 10:34	1

Lab Sample ID: LCS 310-369496/2
Matrix: Water
Analysis Batch: 369496

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	928		mg/L		93	90 - 110

Lab Sample ID: MB 310-369500/1
Matrix: Water
Analysis Batch: 369500

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		50	26	mg/L			10/22/22 11:38	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 310-369500/2
Matrix: Water
Analysis Batch: 369500

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	926		mg/L		93	90 - 110		

Lab Sample ID: 310-242903-11 DU
Matrix: Water
Analysis Batch: 369500

Client Sample ID: MW-307A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	270			248		mg/L				7	20

Lab Sample ID: MB 310-369625/1
Matrix: Water
Analysis Batch: 369625

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		50	26	mg/L			10/24/22 17:04	1

Lab Sample ID: LCS 310-369625/2
Matrix: Water
Analysis Batch: 369625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	972		mg/L		97	90 - 110		

Lab Sample ID: 310-242903-2 DU
Matrix: Water
Analysis Batch: 369625

Client Sample ID: MW-302
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	520			506		mg/L				3	20

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-369425/1
Matrix: Water
Analysis Batch: 369425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH			7.00	7.1		SU		101	98 - 102		

Lab Sample ID: LCS 310-369425/28
Matrix: Water
Analysis Batch: 369425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH			7.00	7.1		SU		101	98 - 102		

QC Association Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

HPLC/IC

Analysis Batch: 370820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-1	MW-301	Total/NA	Water	9056A	
310-242903-2	MW-302	Total/NA	Water	9056A	
310-242903-3	MW-303	Total/NA	Water	9056A	
310-242903-4	MW-304	Total/NA	Water	9056A	
310-242903-5	MW-305	Total/NA	Water	9056A	
310-242903-6	MW-306	Total/NA	Water	9056A	
310-242903-6	MW-306	Total/NA	Water	9056A	
310-242903-7	MW-302A	Total/NA	Water	9056A	
310-242903-8	MW-304A	Total/NA	Water	9056A	
310-242903-9	MW-306A	Total/NA	Water	9056A	
310-242903-10	MW-307	Total/NA	Water	9056A	
310-242903-11	MW-307A	Total/NA	Water	9056A	
310-242903-12	MW-6	Total/NA	Water	9056A	
310-242903-13	Field Blank	Total/NA	Water	9056A	
MB 310-370820/3	Method Blank	Total/NA	Water	9056A	
LCS 310-370820/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 369464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-1	MW-301	Total/NA	Water	3005A	
310-242903-2	MW-302	Total/NA	Water	3005A	
310-242903-3	MW-303	Total/NA	Water	3005A	
310-242903-4	MW-304	Total/NA	Water	3005A	
310-242903-5	MW-305	Total/NA	Water	3005A	
310-242903-6	MW-306	Total/NA	Water	3005A	
310-242903-7	MW-302A	Total/NA	Water	3005A	
310-242903-8	MW-304A	Total/NA	Water	3005A	
310-242903-9	MW-306A	Total/NA	Water	3005A	
310-242903-10	MW-307	Total/NA	Water	3005A	
310-242903-11	MW-307A	Total/NA	Water	3005A	
310-242903-12	MW-6	Total/NA	Water	3005A	
310-242903-13	Field Blank	Total/NA	Water	3005A	
MB 310-369464/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-369464/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-242903-5 DU	MW-305	Total/NA	Water	3005A	

Analysis Batch: 370744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-1	MW-301	Total/NA	Water	6020A	369464
310-242903-2	MW-302	Total/NA	Water	6020A	369464
310-242903-3	MW-303	Total/NA	Water	6020A	369464
310-242903-4	MW-304	Total/NA	Water	6020A	369464
310-242903-5	MW-305	Total/NA	Water	6020A	369464
310-242903-6	MW-306	Total/NA	Water	6020A	369464
310-242903-7	MW-302A	Total/NA	Water	6020A	369464
310-242903-8	MW-304A	Total/NA	Water	6020A	369464
310-242903-9	MW-306A	Total/NA	Water	6020A	369464
310-242903-10	MW-307	Total/NA	Water	6020A	369464
310-242903-11	MW-307A	Total/NA	Water	6020A	369464

Metals (Continued)

Analysis Batch: 370744 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-12	MW-6	Total/NA	Water	6020A	369464
310-242903-13	Field Blank	Total/NA	Water	6020A	369464
MB 310-369464/1-A	Method Blank	Total/NA	Water	6020A	369464
LCS 310-369464/2-A	Lab Control Sample	Total/NA	Water	6020A	369464
310-242903-5 DU	MW-305	Total/NA	Water	6020A	369464

General Chemistry

Analysis Batch: 369425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-1	MW-301	Total/NA	Water	SM 4500 H+ B	
310-242903-2	MW-302	Total/NA	Water	SM 4500 H+ B	
310-242903-3	MW-303	Total/NA	Water	SM 4500 H+ B	
310-242903-4	MW-304	Total/NA	Water	SM 4500 H+ B	
310-242903-5	MW-305	Total/NA	Water	SM 4500 H+ B	
310-242903-6	MW-306	Total/NA	Water	SM 4500 H+ B	
310-242903-7	MW-302A	Total/NA	Water	SM 4500 H+ B	
310-242903-8	MW-304A	Total/NA	Water	SM 4500 H+ B	
310-242903-9	MW-306A	Total/NA	Water	SM 4500 H+ B	
310-242903-10	MW-307	Total/NA	Water	SM 4500 H+ B	
310-242903-11	MW-307A	Total/NA	Water	SM 4500 H+ B	
310-242903-12	MW-6	Total/NA	Water	SM 4500 H+ B	
310-242903-13	Field Blank	Total/NA	Water	SM 4500 H+ B	
LCS 310-369425/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCS 310-369425/28	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 369496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-1	MW-301	Total/NA	Water	SM 2540C	
310-242903-3	MW-303	Total/NA	Water	SM 2540C	
310-242903-4	MW-304	Total/NA	Water	SM 2540C	
310-242903-7	MW-302A	Total/NA	Water	SM 2540C	
310-242903-8	MW-304A	Total/NA	Water	SM 2540C	
310-242903-12	MW-6	Total/NA	Water	SM 2540C	
MB 310-369496/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-369496/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 369500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-5	MW-305	Total/NA	Water	SM 2540C	
310-242903-10	MW-307	Total/NA	Water	SM 2540C	
310-242903-11	MW-307A	Total/NA	Water	SM 2540C	
310-242903-13	Field Blank	Total/NA	Water	SM 2540C	
MB 310-369500/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-369500/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-242903-11 DU	MW-307A	Total/NA	Water	SM 2540C	

Analysis Batch: 369625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-2	MW-302	Total/NA	Water	SM 2540C	
310-242903-6	MW-306	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 369625 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-9	MW-306A	Total/NA	Water	SM 2540C	
MB 310-369625/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-369625/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-242903-2 DU	MW-302	Total/NA	Water	SM 2540C	

Field Service / Mobile Lab

Analysis Batch: 369576

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-1	MW-301	Total/NA	Water	Field Sampling	
310-242903-2	MW-302	Total/NA	Water	Field Sampling	
310-242903-3	MW-303	Total/NA	Water	Field Sampling	
310-242903-4	MW-304	Total/NA	Water	Field Sampling	
310-242903-5	MW-305	Total/NA	Water	Field Sampling	
310-242903-6	MW-306	Total/NA	Water	Field Sampling	
310-242903-7	MW-302A	Total/NA	Water	Field Sampling	
310-242903-8	MW-304A	Total/NA	Water	Field Sampling	
310-242903-9	MW-306A	Total/NA	Water	Field Sampling	
310-242903-10	MW-307	Total/NA	Water	Field Sampling	
310-242903-11	MW-307A	Total/NA	Water	Field Sampling	
310-242903-12	MW-6	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-301
Date Collected: 10/17/22 15:15
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	370820	J7CK	EET CF	11/02/22 23:24
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 17:58
Total/NA	Analysis	SM 2540C		1	369496	WZC8	EET CF	10/22/22 10:34
Total/NA	Analysis	SM 4500 H+ B		1	369425	A3GU	EET CF	10/21/22 12:03
Total/NA	Analysis	Field Sampling		1	369576	BJ0R	EET CF	10/17/22 15:15

Client Sample ID: MW-302
Date Collected: 10/19/22 12:50
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	370820	J7CK	EET CF	11/02/22 23:37
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 18:01
Total/NA	Analysis	SM 2540C		1	369625	ENB7	EET CF	10/24/22 17:04
Total/NA	Analysis	SM 4500 H+ B		1	369425	A3GU	EET CF	10/21/22 12:20
Total/NA	Analysis	Field Sampling		1	369576	BJ0R	EET CF	10/19/22 12:50

Client Sample ID: MW-303
Date Collected: 10/17/22 16:25
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	370820	J7CK	EET CF	11/02/22 23:50
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 18:04
Total/NA	Analysis	SM 2540C		1	369496	WZC8	EET CF	10/22/22 10:34
Total/NA	Analysis	SM 4500 H+ B		1	369425	A3GU	EET CF	10/21/22 12:04
Total/NA	Analysis	Field Sampling		1	369576	BJ0R	EET CF	10/17/22 16:25

Client Sample ID: MW-304
Date Collected: 10/17/22 11:40
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	370820	J7CK	EET CF	11/03/22 00:03
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 18:07
Total/NA	Analysis	SM 2540C		1	369496	WZC8	EET CF	10/22/22 10:34
Total/NA	Analysis	SM 4500 H+ B		1	369425	A3GU	EET CF	10/21/22 12:05
Total/NA	Analysis	Field Sampling		1	369576	BJ0R	EET CF	10/17/22 11:40

Lab Chronicle

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-305
Date Collected: 10/18/22 17:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	370820	J7CK	EET CF	11/03/22 00:41
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 18:11
Total/NA	Analysis	SM 2540C		1	369500	WZC8	EET CF	10/22/22 11:38
Total/NA	Analysis	SM 4500 H+ B		1	369425	A3GU	EET CF	10/21/22 12:06
Total/NA	Analysis	Field Sampling		1	369576	BJ0R	EET CF	10/18/22 17:00

Client Sample ID: MW-306
Date Collected: 10/19/22 09:55
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	370820	J7CK	EET CF	11/03/22 00:54
Total/NA	Analysis	9056A		20	370820	J7CK	EET CF	11/03/22 09:24
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 18:17
Total/NA	Analysis	SM 2540C		1	369625	ENB7	EET CF	10/24/22 17:04
Total/NA	Analysis	SM 4500 H+ B		1	369425	A3GU	EET CF	10/21/22 12:07
Total/NA	Analysis	Field Sampling		1	369576	BJ0R	EET CF	10/19/22 09:55

Client Sample ID: MW-302A
Date Collected: 10/17/22 13:45
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	370820	J7CK	EET CF	11/03/22 01:07
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 18:20
Total/NA	Analysis	SM 2540C		1	369496	WZC8	EET CF	10/22/22 10:34
Total/NA	Analysis	SM 4500 H+ B		1	369425	A3GU	EET CF	10/21/22 12:08
Total/NA	Analysis	Field Sampling		1	369576	BJ0R	EET CF	10/17/22 13:45

Client Sample ID: MW-304A
Date Collected: 10/17/22 12:30
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	370820	J7CK	EET CF	11/03/22 01:20
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 18:46
Total/NA	Analysis	SM 2540C		1	369496	WZC8	EET CF	10/22/22 10:34
Total/NA	Analysis	SM 4500 H+ B		1	369425	A3GU	EET CF	10/21/22 12:10
Total/NA	Analysis	Field Sampling		1	369576	BJ0R	EET CF	10/17/22 12:30

Lab Chronicle

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: MW-306A
Date Collected: 10/19/22 11:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	370820	J7CK	EET CF	11/03/22 01:33
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 19:11
Total/NA	Analysis	SM 2540C		1	369625	ENB7	EET CF	10/24/22 17:04
Total/NA	Analysis	SM 4500 H+ B		1	369425	A3GU	EET CF	10/21/22 12:09
Total/NA	Analysis	Field Sampling		1	369576	BJ0R	EET CF	10/19/22 11:00

Client Sample ID: MW-307
Date Collected: 10/18/22 11:55
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	370820	J7CK	EET CF	11/03/22 01:46
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 19:14
Total/NA	Analysis	SM 2540C		1	369500	WZC8	EET CF	10/22/22 11:38
Total/NA	Analysis	SM 4500 H+ B		1	369425	A3GU	EET CF	10/21/22 12:11
Total/NA	Analysis	Field Sampling		1	369576	BJ0R	EET CF	10/18/22 11:55

Client Sample ID: MW-307A
Date Collected: 10/18/22 11:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	370820	J7CK	EET CF	11/03/22 01:59
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 19:17
Total/NA	Analysis	SM 2540C		1	369500	WZC8	EET CF	10/22/22 11:38
Total/NA	Analysis	SM 4500 H+ B		1	369425	A3GU	EET CF	10/21/22 12:23
Total/NA	Analysis	Field Sampling		1	369576	BJ0R	EET CF	10/18/22 11:00

Client Sample ID: MW-6
Date Collected: 10/18/22 09:15
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	370820	J7CK	EET CF	11/03/22 02:12
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 19:20
Total/NA	Analysis	SM 2540C		1	369496	WZC8	EET CF	10/22/22 10:34
Total/NA	Analysis	SM 4500 H+ B		1	369425	A3GU	EET CF	10/21/22 12:22
Total/NA	Analysis	Field Sampling		1	369576	BJ0R	EET CF	10/18/22 09:15

Lab Chronicle

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Client Sample ID: Field Blank

Date Collected: 10/19/22 10:30
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		1	370820	J7CK	EET CF	11/03/22 02:24
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 19:23
Total/NA	Analysis	SM 2540C		1	369500	WZC8	EET CF	10/22/22 11:38
Total/NA	Analysis	SM 4500 H+ B		1	369425	A3GU	EET CF	10/21/22 12:21

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: SCS Engineers
Job ID: 310-242903-1
Project/Site: Alliant Lansing 25222070

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-23

Method Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020A	Metals (ICP/MS)	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-242903 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/7/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes ☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes ☐ No	*If yes:* Cooler # 1 of 6
Cooler Custody Seals Present? No	☒ Yes ☐ No	*If yes:* Cooler custody seals intact? ☒ Yes ☐
Sample Custody Seals Present? No	☐ Yes ☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐
Trip Blank Present?	☐ Yes ☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): | Corrected Temp (°C):

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:	PLSTNT	
Uncorrected Temp (°C):	-0.8	
Corrected Temp (°C):	-0.8	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 2 of 6
Cooler Custody Seals Present? No	☒ Yes	☐ No	*If yes:* Cooler custody seals intact? ☒ Yes ☐
Sample Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 7 | Correction Factor (°C): +0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.3 | Corrected Temp (°C): -0.3

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 3 of 6

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.7 | Corrected Temp (°C): -0.7

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 4 of 6

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.8 | Corrected Temp (°C): -0.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

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Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 5 of 6

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.6 | Corrected Temp (°C): -0.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 6 of 6

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 7 | Correction Factor (°C): +0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -1.1 | Corrected Temp (°C): -1.1

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

est-mer ca Des Moines SC
214

Client Information	Sampler: Ethan Schaefer	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 310-74995-16398 1
Client Contact: Mr Tom Karwoski	Phone: 414-897-4253	E-Mail: Sandra Fredrick@et eurofinsus com	State of Origin:	Page: Page 1 of 2
Company: SCS Engineers	PWSID:			Job #:
Address: 2830 Dairy Drive	Due Date Requested:			
City: Madison	TAT Requested (days):			
State Zip: W 53718-6751	Compliance Project: Δ Yes Δ No			
Phone:	PO #: 25222070			
Email: *karwoski@scseng neers com	WO #:			
Project Name: Alliant Lansing 25222070	Project #: 31011020			
Site:	SSOW#:			

Analysis Requested

Preservation Codes
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid O=waste/oil, BT=Tissue A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A Metals (14)	2540C Calcd, 9056A, ORGFM_28D, SM4500 H+	903 0 Radium 226	904 0 Radium 228	Total Number of containers	Special Instructions/Note
			Preservation Code:				D	N	D	D		
MW-301	10/17/22	15:15	G	Water			X	X	X	X		
MW-302	10/19/22	12:50		Water			X	X	X	X		
MW-303	10/17/22	16:25		Water			X	X	X	X		
MW-304	10/17/22	11:40		Water			X	X	X	X		
MW-305	10/18/22	17:00		Water			X	X	X	X		
MW-306	10/19/22	9:55		Water			X	X	X	X		
MW-302A	10/17/22	13:45		Water			X	X	X	X		
MW-304A	10/17/22	12:30		Water			X	X	X	X		
MW-306A	10/19/22	11:00		Water			X	X	X	X		
MW-307	10/18/22	11:55		Water			X	X	X	X		
MW-307A	10/18/22	11:00	↓	Water			X	X	X	X		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: II III IV Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company
	10/20/22 9:30	SCS		10/21/22 0935	
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No:

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613
Phone. 319-277-2401 Fax 319-277-2425

Chain of Custody Record

Client Information	Sampler: Ethan Shepler	Lab PM: Fredrick Sandie	Carrier Tracking No(s):	COC No: 310-74995-16398 2
Client Contact: Mr Tom Karwoski	Phone: 414-897-4253	E-Mail: Sandra Fredrick@et eurofinsus com	State of Origin:	Page: Page 2 of 2
Company: SCS Engineers	PWSID:	Analysis Requested		Job #:
Address: 2830 Dairy Drive	Due Date Requested:			Preservation Codes: A - HCL; B NaOH; C - Zn Acetate; D Nitric Acid; E NaHSO4; F MeOH; G Amchlor; H Ascorbic Acid; I Ice; J DI Water; K EDTA; L EDA; M Hexane; N None; O AsNaO2; P Na2O4S; Q Na2SO3; R Na2S2O3; S H2SO4; T TSP Dodecahydrate; U Acetone; V MCAA; W pH 4-5; Y Trizma; Z other (specify); Other:
City: Madison	TAT Requested (days):			
State, Zip: WI 53718-6751	Compliance Project: Δ Yes Δ No			
Phone:	PO #: 25222070			
Email: karwoski@scseng neers com	WO #:			
Project Name: Alliant Lansing 25222070	Project #: 31011020			
Site:	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater S=solid O=waste/oil, BT=Tissue A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A Metals (14)	2540C Calcd 9056A, ORGFM 28D, SM4500 H+	903 0 Radium 226	904 0 Radium 228	Total Number of containers	Special Instructions/Note
			Preservation Code:		X	X	D	N	D	D	X	
MW-6	10/18/22	9:15	G	Water			X	X	X	X		
Field Blank	10/18/22	10:30		Water			X	X	X	X		
				Water								

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by	Date	Time	Method of Shipment

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	10/20/22 9 30	SO		10/21/22 0935	
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time.	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks.

Ver 06/08/2021

Table 2. Sampling Points and Parameters CCR Rule Sampling Program Lansing Generating Station / SCS Engineers Project #25221070.00

		Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-302A	MW-304A	MW-306A	MW-307	MW-307A	MW-308	MW-309	MW-6	Field Blank	TOTAL
COCs #1 (non-radium) & #2 (radium) - CCR Rule Parameters	Appendix III Parameters, Total (Unfiltered)	Boron	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Calcium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Chloride	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Fluoride	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		pH	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Sulfate	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		TDS	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Appendix IV Parameters, Total (Unfiltered)	Antimony	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Arsenic	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Barium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Beryllium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Cadmium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Chromium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Cobalt	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Fluoride	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Lead	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Lithium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Mercury	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Molybdenum	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Selenium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Thallium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Radium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Field Parameters	Groundwater Elevation	X	X	X	X	X	X	X	X	X	X	X	X	X	X		14
		pH (field)	X	X	X	X	X	X	X	X	X	X	X			X		12
		Specific Conductance	X	X	X	X	X	X	X	X	X	X	X			X		12
		Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X	X			X		12
		ORP	X	X	X	X	X	X	X	X	X	X	X			X		12
		Temperature	X	X	X	X	X	X	X	X	X	X	X			X		12
		Turbidity	X	X	X	X	X	X	X	X	X	X	X			X		12
		Color	X	X	X	X	X	X	X	X	X	X	X			X		12
		Odor	X	X	X	X	X	X	X	X	X	X	X			X		12
COC #3 - MNA Parameters	Total (Unfiltered)	Alkalinity - Carbonate	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Alkalinity - Bicarbonate	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Iron	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Magnesium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Manganese	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Potassium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Sodium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Dissolved (Filtered)	Arsenic		X				X										2
		Iron	X	X	X	X	X	X	X	X	X	X	X			X		12
		Manganese	X	X	X	X	X	X	X	X	X	X	X			X		12
		Molybdenum								X								1
	Field Parameters	Sulfide, Field	X	X	X	X	X	X	X	X	X	X	X			X		12
		Ferrous Iron, Field	X	X	X	X	X	X	X	X	X	X	X			X		12

Table 1, page 1 of 1

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-242903-1

Login Number: 242903
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Groundwater Monitoring Results - Field Parameters
Lansing Generating Station / SCS Engineers Project #25222070.0
October 2022

Sample	Sample Date/Time	Groundwater Elevation (ft AMSL)	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)	Turbidity (NTU)
MW-6	10/18/2022 9:15	665.34	9.7	7.40	8.16	552.6	47.3	0.60
MW-301	10/17/2022 15:15	630.79	12.5	8.10	0.08	526.0	-185.1	1.31
MW-302	10/19/2022 12:50	629.51	14.5	6.87	0.03	1045.0	-186.2	23.33
MW-302A	10/17/2022 13:45	622.97	11.6	7.28	6.27	619.9	105.7	1.39
MW-303	10/17/2022 16:25	639.39	23.1	7.66	0.11	397.1	25.5	2.07
MW-304	10/17/2022 11:40	621.21	11.9	7.17	6.97	643.3	169.2	0.01
MW-304A	10/17/2022 12:30	623.56	10.6	7.81	0.13	480.6	-24.7	77.88
MW-305	10/18/2022 17:00	626.36	15.7	7.32	0.06	607.2	-186.6	8.17
MW-306	10/19/2022 9:55	619.79	15.4	6.80	0.07	2120.0	-173.1	0.98
MW-306A	10/19/2022 11:00	620.05	14.0	7.25	1.30	624.3	-91.1	3.21
MW-307	10/18/2022 11:55	639.23	15.7	8.44	0.16	399.6	-175.6	4.34
MW-307A	10/18/2022 11:00	625.77	11.4	7.59	0.10	518.7	-99.4	2.57

Abbreviations:
AMSL = above mean sea level
µmhos/cm = microSiemens per centimeter
mg/L = milligrams per liter
mV = millivolts
ORP = Oxidation Reduction (REDOX)
NTU = Nephelometric Turbidity Units

Laboratory Notes/Qualifiers:
none

Created by: NDK Date: 10/20/2022
Last revision by: EMS Date: 10/21/2022
Checked by: NDK Date: 10/21/2022

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eurofins | Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison Wisconsin 53718

Generated 11/22/2022 8:36:23 AM

JOB DESCRIPTION

Alliant Lansing 25222070

JOB NUMBER

310-242903-2

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

myEOL

Table of Contents

Job ID: 310-242903-2

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative
310-242903-2

Comments
No additional comments.

Receipt
The samples were received on 10/21/2022 9:35 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 6 coolers at receipt time were -1.1º C, -0.8º C, -0.8º C, -0.7º C, -0.4º C and -0.3º C.

RAD
Method 903.0: Radium-226 batch 587654
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-301 (310-242903-1), MW-302 (310-242903-2), MW-303 (310-242903-3), MW-304 (310-242903-4), MW-305 (310-242903-5), MW-306 (310-242903-6), MW-302A (310-242903-7), MW-304A (310-242903-8), MW-306A (310-242903-9), MW-307 (310-242903-10), MW-307A (310-242903-11), MW-6 (310-242903-12), Field Blank (310-242903-13), (LCS 160-587654/2-A), (MB 160-587654/1-A) and (310-242903-G-11-A DU)

Method 904.0: Radium-228 prep batch 160-587664:
The following sample(s) did not meet the requested limit (RL) due to the reduced sample volume attributed to the presence of matrix interference. During preparation the analyst visually noted matrix effects. The data have been reported with this narrative. MW-304A (310-242903-8)

Method 904.0: Radium-228 prep batch 160-587664:
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.MW-301 (310-242903-1), MW-302 (310-242903-2), MW-303 (310-242903-3), MW-304 (310-242903-4), MW-305 (310-242903-5), MW-306 (310-242903-6), MW-302A (310-242903-7), MW-304A (310-242903-8), MW-306A (310-242903-9), MW-307 (310-242903-10), MW-307A (310-242903-11), MW-6 (310-242903-12), Field Blank (310-242903-13), (LCS 160-587664/2-A), (MB 160-587664/1-A) and (310-242903-G-11-B DU)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-242903-1	MW-301	Water	10/17/22 15:15	10/21/22 09:35
310-242903-2	MW-302	Water	10/19/22 12:50	10/21/22 09:35
310-242903-3	MW-303	Water	10/17/22 16:25	10/21/22 09:35
310-242903-4	MW-304	Water	10/17/22 11:40	10/21/22 09:35
310-242903-5	MW-305	Water	10/18/22 17:00	10/21/22 09:35
310-242903-6	MW-306	Water	10/19/22 09:55	10/21/22 09:35
310-242903-7	MW-302A	Water	10/17/22 13:45	10/21/22 09:35
310-242903-8	MW-304A	Water	10/17/22 12:30	10/21/22 09:35
310-242903-9	MW-306A	Water	10/19/22 11:00	10/21/22 09:35
310-242903-10	MW-307	Water	10/18/22 11:55	10/21/22 09:35
310-242903-11	MW-307A	Water	10/18/22 11:00	10/21/22 09:35
310-242903-12	MW-6	Water	10/18/22 09:15	10/21/22 09:35
310-242903-13	Field Blank	Water	10/19/22 10:30	10/21/22 09:35

Detection Summary

Client: SCS Engineers
Job ID: 310-242903-2
Project/Site: Alliant Lansing 25222070

Client Sample ID: MW-301 — Lab Sample ID: 310-242903-1

No Detections.

Client Sample ID: MW-302 — Lab Sample ID: 310-242903-2

No Detections.

Client Sample ID: MW-303 — Lab Sample ID: 310-242903-3

No Detections.

Client Sample ID: MW-304 — Lab Sample ID: 310-242903-4

No Detections.

Client Sample ID: MW-305 — Lab Sample ID: 310-242903-5

No Detections.

Client Sample ID: MW-306 — Lab Sample ID: 310-242903-6

No Detections.

Client Sample ID: MW-302A — Lab Sample ID: 310-242903-7

No Detections.

Client Sample ID: MW-304A — Lab Sample ID: 310-242903-8

No Detections.

Client Sample ID: MW-306A — Lab Sample ID: 310-242903-9

No Detections.

Client Sample ID: MW-307 — Lab Sample ID: 310-242903-10

No Detections.

Client Sample ID: MW-307A — Lab Sample ID: 310-242903-11

No Detections.

Client Sample ID: MW-6 — Lab Sample ID: 310-242903-12

No Detections.

Client Sample ID: Field Blank — Lab Sample ID: 310-242903-13

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-301

Date Collected: 10/17/22 15:15
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-1

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.296		0.134	0.137	1.00	0.162	pCi/L	10/28/22 11:19	11/21/22 10:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*89.2*		*40 - 110*	*10/28/22 11:19*	*11/21/22 10:36*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.534		0.358	0.361	1.00	0.527	pCi/L	10/28/22 12:46	11/16/22 13:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*89.2*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:56*	*1*
Y Carrier	*81.5*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:56*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.830		0.382	0.386	5.00	0.527	pCi/L		11/21/22 22:08	1

Client Sample ID: MW-302

Date Collected: 10/19/22 12:50
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-2

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.888		0.251	0.264	1.00	0.238	pCi/L	10/28/22 11:19	11/21/22 10:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*82.4*		*40 - 110*	*10/28/22 11:19*	*11/21/22 10:36*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	3.44		0.804	0.864	1.00	0.824	pCi/L	10/28/22 12:46	11/16/22 13:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*82.4*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:56*	*1*
Y Carrier	*83.7*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:56*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	4.33		0.842	0.903	5.00	0.824	pCi/L		11/21/22 22:08	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Client Sample ID: MW-303

Date Collected: 10/17/22 16:25
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-3

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.200		0.107	0.108	1.00	0.128	pCi/L	10/28/22 11:19	11/21/22 10:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*86.5*		*40 - 110*	*10/28/22 11:19*	*11/21/22 10:36*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.312	U	0.383	0.384	1.00	0.635	pCi/L	10/28/22 12:46	11/16/22 13:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*86.5*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:56*	*1*
Y Carrier	*82.2*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:56*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.512	U	0.398	0.399	5.00	0.635	pCi/L		11/21/22 22:08	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Client Sample ID: MW-304

Date Collected: 10/17/22 11:40
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-4

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.0692	U	0.0822	0.0825	1.00	0.134	pCi/L	10/28/22 11:19	11/21/22 10:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*80.9*		*40 - 110*	*10/28/22 11:19*	*11/21/22 10:36*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	-0.288	U	0.310	0.311	1.00	0.654	pCi/L	10/28/22 12:46	11/16/22 13:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*80.9*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:56*	*1*
Y Carrier	*84.1*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:56*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.0692	U	0.321	0.322	5.00	0.654	pCi/L		11/21/22 22:08	1

Client Sample ID: MW-305

Date Collected: 10/18/22 17:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-5

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.331		0.133	0.136	1.00	0.141	pCi/L	10/28/22 11:19	11/21/22 10:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*87.5*		*40 - 110*	*10/28/22 11:19*	*11/21/22 10:36*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.871		0.369	0.378	1.00	0.460	pCi/L	10/28/22 12:46	11/16/22 13:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*87.5*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:56*	*1*
Y Carrier	*84.5*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:56*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	1.20		0.392	0.402	5.00	0.460	pCi/L		11/21/22 22:08	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Client Sample ID: MW-306

Date Collected: 10/19/22 09:55
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-6

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.431		0.173	0.177	1.00	0.189	pCi/L	10/28/22 11:19	11/21/22 10:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*87.3*		*40 - 110*	*10/28/22 11:19*	*11/21/22 10:37*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.262	U	0.381	0.381	1.00	0.644	pCi/L	10/28/22 12:46	11/16/22 13:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*87.3*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:56*	*1*
Y Carrier	*85.2*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:56*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.693		0.418	0.420	5.00	0.644	pCi/L		11/21/22 22:08	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Client Sample ID: MW-302A

Date Collected: 10/17/22 13:45
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-7

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.0611	U	0.0737	0.0739	1.00	0.120	pCi/L	10/28/22 11:19	11/21/22 10:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*91.9*		*40 - 110*	*10/28/22 11:19*	*11/21/22 10:37*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.310	U	0.314	0.315	1.00	0.505	pCi/L	10/28/22 12:46	11/16/22 13:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*91.9*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:57*	*1*
Y Carrier	*83.7*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:57*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.371	U	0.323	0.324	5.00	0.505	pCi/L		11/21/22 22:08	1

Client Sample ID: MW-304A

Date Collected: 10/17/22 12:30
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-8

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.207	U	0.186	0.187	1.00	0.286	pCi/L	10/28/22 11:19	11/21/22 10:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*89.2*		*40 - 110*	*10/28/22 11:19*	*11/21/22 10:37*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.0889	U G	0.574	0.574	1.00	1.05	pCi/L	10/28/22 12:46	11/16/22 13:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*89.2*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:59*	*1*
Y Carrier	*80.7*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:59*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.296	U	0.603	0.604	5.00	1.05	pCi/L		11/21/22 22:08	1

Client Sample ID: MW-306A

Date Collected: 10/19/22 11:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-9

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.193	U	0.135	0.136	1.00	0.198	pCi/L	10/28/22 11:19	11/21/22 10:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*85.0*		*40 - 110*	*10/28/22 11:19*	*11/21/22 10:37*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	**0.990**		0.409	0.419	1.00	0.507	pCi/L	10/28/22 12:46	11/16/22 13:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*85.0*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:59*	*1*
Y Carrier	*81.9*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:59*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**1.18**		0.431	0.441	5.00	0.507	pCi/L		11/21/22 22:08	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Client Sample ID: MW-307

Date Collected: 10/18/22 11:55
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-10

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.166	U	0.132	0.133	1.00	0.194	pCi/L	10/28/22 11:19	11/21/22 10:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*90.7*		*40 - 110*	*10/28/22 11:19*	*11/21/22 10:37*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	**1.34**		0.564	0.578	1.00	0.749	pCi/L	10/28/22 12:46	11/16/22 13:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*90.7*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:59*	*1*
Y Carrier	*85.2*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:59*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**1.51**		0.579	0.593	5.00	0.749	pCi/L		11/21/22 22:08	1

Client Sample ID: MW-307A

Date Collected: 10/18/22 11:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-11

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.0963	U	0.0944	0.0948	1.00	0.147	pCi/L	10/28/22 11:19	11/21/22 10:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*84.6*		*40 - 110*	*10/28/22 11:19*	*11/21/22 10:37*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	**0.587**		0.381	0.384	1.00	0.562	pCi/L	10/28/22 12:46	11/16/22 13:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*84.6*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:59*	*1*
Y Carrier	*84.9*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:59*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**0.683**		0.393	0.396	5.00	0.562	pCi/L		11/21/22 22:08	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Client Sample ID: MW-6

Date Collected: 10/18/22 09:15
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-12

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.109	U	0.112	0.113	1.00	0.179	pCi/L	10/28/22 11:19	11/21/22 10:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*75.5*		*40 - 110*	*10/28/22 11:19*	*11/21/22 10:41*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	**1.18**		0.462	0.474	1.00	0.566	pCi/L	10/28/22 12:46	11/16/22 14:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*75.5*		*40 - 110*	*10/28/22 12:46*	*11/16/22 14:00*	*1*
Y Carrier	*84.5*		*40 - 110*	*10/28/22 12:46*	*11/16/22 14:00*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**1.29**		0.475	0.487	5.00	0.566	pCi/L		11/21/22 22:08	1

Client Sample ID: Field Blank

Date Collected: 10/19/22 10:30
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-13

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.0433	U	0.0917	0.0917	1.00	0.164	pCi/L	10/28/22 11:19	11/21/22 10:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*87.3*		*40 - 110*	*10/28/22 11:19*	*11/21/22 10:41*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	**0.556**		0.324	0.328	1.00	0.458	pCi/L	10/28/22 12:46	11/16/22 14:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*87.3*		*40 - 110*	*10/28/22 12:46*	*11/16/22 14:00*	*1*
Y Carrier	*88.6*		*40 - 110*	*10/28/22 12:46*	*11/16/22 14:00*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**0.599**		0.337	0.341	5.00	0.458	pCi/L		11/21/22 22:08	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-587654/1-A
Matrix: Water
Analysis Batch: 590889

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 587654

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.04165	U	0.0862	0.0863	1.00	0.154	pCi/L	10/28/22 11:19	11/21/22 10:36	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*99.0*		*40 - 110*	*10/28/22 11:19*	*11/21/22 10:36*	*1*

Lab Sample ID: LCS 160-587654/2-A
Matrix: Water
Analysis Batch: 590889

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 587654

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium 226			11.3	9.402		1.04	1.00	0.149	pCi/L	83	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba	*92.9*		*40 - 110*

Lab Sample ID: 310-242903-11 DU
Matrix: Water
Analysis Batch: 590889

Client Sample ID: MW-307A
Prep Type: Total/NA
Prep Batch: 587654

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium 226	0.0963	U		0.07207	U	0.0946	1.00	0.158	pCi/L			0.13	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba	*86.8*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-587664/1-A
Matrix: Water
Analysis Batch: 590349

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 587664

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.009908	U	0.181	0.181	1.00	0.354	pCi/L	10/28/22 12:46	11/16/22 13:55	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*99.0*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:55*	*1*
Y Carrier	*85.6*		*40 - 110*	*10/28/22 12:46*	*11/16/22 13:55*	*1*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-587664/2-A
Matrix: Water
Analysis Batch: 590349

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 587664

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium 228			8.44	8.591		1.20	1.00	0.531	pCi/L	102	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba	*92.9*		*40 - 110*
Y Carrier	*85.6*		*40 - 110*

Lab Sample ID: 310-242903-11 DU
Matrix: Water
Analysis Batch: 590348

Client Sample ID: MW-307A
Prep Type: Total/NA
Prep Batch: 587664

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium 228	0.587			0.7598		0.394	1.00	0.538	pCi/L			0.22	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba	*86.8*		*40 - 110*
Y Carrier	*86.7*		*40 - 110*

QC Association Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Rad

Prep Batch: 587654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-1	MW-301	Total/NA	Water	PrecSep-21	
310-242903-2	MW-302	Total/NA	Water	PrecSep-21	
310-242903-3	MW-303	Total/NA	Water	PrecSep-21	
310-242903-4	MW-304	Total/NA	Water	PrecSep-21	
310-242903-5	MW-305	Total/NA	Water	PrecSep-21	
310-242903-6	MW-306	Total/NA	Water	PrecSep-21	
310-242903-7	MW-302A	Total/NA	Water	PrecSep-21	
310-242903-8	MW-304A	Total/NA	Water	PrecSep-21	
310-242903-9	MW-306A	Total/NA	Water	PrecSep-21	
310-242903-10	MW-307	Total/NA	Water	PrecSep-21	
310-242903-11	MW-307A	Total/NA	Water	PrecSep-21	
310-242903-12	MW-6	Total/NA	Water	PrecSep-21	
310-242903-13	Field Blank	Total/NA	Water	PrecSep-21	
MB 160-587654/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-587654/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
310-242903-11 DU	MW-307A	Total/NA	Water	PrecSep-21	

Prep Batch: 587664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-1	MW-301	Total/NA	Water	PrecSep_0	
310-242903-2	MW-302	Total/NA	Water	PrecSep_0	
310-242903-3	MW-303	Total/NA	Water	PrecSep_0	
310-242903-4	MW-304	Total/NA	Water	PrecSep_0	
310-242903-5	MW-305	Total/NA	Water	PrecSep_0	
310-242903-6	MW-306	Total/NA	Water	PrecSep_0	
310-242903-7	MW-302A	Total/NA	Water	PrecSep_0	
310-242903-8	MW-304A	Total/NA	Water	PrecSep_0	
310-242903-9	MW-306A	Total/NA	Water	PrecSep_0	
310-242903-10	MW-307	Total/NA	Water	PrecSep_0	
310-242903-11	MW-307A	Total/NA	Water	PrecSep_0	
310-242903-12	MW-6	Total/NA	Water	PrecSep_0	
310-242903-13	Field Blank	Total/NA	Water	PrecSep_0	
MB 160-587664/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-587664/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
310-242903-11 DU	MW-307A	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Client Sample ID: MW-301
Date Collected: 10/17/22 15:15
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			587654	BMP	EET SL	10/28/22 11:19
Total/NA	Analysis	903.0		1	590889	FLC	EET SL	11/21/22 10:36
Total/NA	Prep	PrecSep_0			587664	BMP	EET SL	10/28/22 12:46
Total/NA	Analysis	904.0		1	590349	JCB	EET SL	11/16/22 13:56
Total/NA	Analysis	Ra226_Ra228 Pos		1	590900	MLK	EET SL	11/21/22 22:08

Client Sample ID: MW-302
Date Collected: 10/19/22 12:50
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			587654	BMP	EET SL	10/28/22 11:19
Total/NA	Analysis	903.0		1	590889	FLC	EET SL	11/21/22 10:36
Total/NA	Prep	PrecSep_0			587664	BMP	EET SL	10/28/22 12:46
Total/NA	Analysis	904.0		1	590349	JCB	EET SL	11/16/22 13:56
Total/NA	Analysis	Ra226_Ra228 Pos		1	590900	MLK	EET SL	11/21/22 22:08

Client Sample ID: MW-303
Date Collected: 10/17/22 16:25
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			587654	BMP	EET SL	10/28/22 11:19
Total/NA	Analysis	903.0		1	590889	FLC	EET SL	11/21/22 10:36
Total/NA	Prep	PrecSep_0			587664	BMP	EET SL	10/28/22 12:46
Total/NA	Analysis	904.0		1	590349	JCB	EET SL	11/16/22 13:56
Total/NA	Analysis	Ra226_Ra228 Pos		1	590900	MLK	EET SL	11/21/22 22:08

Client Sample ID: MW-304
Date Collected: 10/17/22 11:40
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			587654	BMP	EET SL	10/28/22 11:19
Total/NA	Analysis	903.0		1	590889	FLC	EET SL	11/21/22 10:36
Total/NA	Prep	PrecSep_0			587664	BMP	EET SL	10/28/22 12:46
Total/NA	Analysis	904.0		1	590349	JCB	EET SL	11/16/22 13:56
Total/NA	Analysis	Ra226_Ra228 Pos		1	590900	MLK	EET SL	11/21/22 22:08

Lab Chronicle

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Client Sample ID: MW-305
Date Collected: 10/18/22 17:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			587654	BMP	EET SL	10/28/22 11:19
Total/NA	Analysis	903.0		1	590889	FLC	EET SL	11/21/22 10:36
Total/NA	Prep	PrecSep_0			587664	BMP	EET SL	10/28/22 12:46
Total/NA	Analysis	904.0		1	590349	JCB	EET SL	11/16/22 13:56
Total/NA	Analysis	Ra226_Ra228 Pos		1	590900	MLK	EET SL	11/21/22 22:08

Client Sample ID: MW-306
Date Collected: 10/19/22 09:55
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			587654	BMP	EET SL	10/28/22 11:19
Total/NA	Analysis	903.0		1	590889	FLC	EET SL	11/21/22 10:37
Total/NA	Prep	PrecSep_0			587664	BMP	EET SL	10/28/22 12:46
Total/NA	Analysis	904.0		1	590349	JCB	EET SL	11/16/22 13:56
Total/NA	Analysis	Ra226_Ra228 Pos		1	590900	MLK	EET SL	11/21/22 22:08

Client Sample ID: MW-302A
Date Collected: 10/17/22 13:45
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			587654	BMP	EET SL	10/28/22 11:19
Total/NA	Analysis	903.0		1	590889	FLC	EET SL	11/21/22 10:37
Total/NA	Prep	PrecSep_0			587664	BMP	EET SL	10/28/22 12:46
Total/NA	Analysis	904.0		1	590349	JCB	EET SL	11/16/22 13:57
Total/NA	Analysis	Ra226_Ra228 Pos		1	590900	MLK	EET SL	11/21/22 22:08

Client Sample ID: MW-304A
Date Collected: 10/17/22 12:30
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			587654	BMP	EET SL	10/28/22 11:19
Total/NA	Analysis	903.0		1	590889	FLC	EET SL	11/21/22 10:37
Total/NA	Prep	PrecSep_0			587664	BMP	EET SL	10/28/22 12:46
Total/NA	Analysis	904.0		1	590348	SCB	EET SL	11/16/22 13:59
Total/NA	Analysis	Ra226_Ra228 Pos		1	590900	MLK	EET SL	11/21/22 22:08

Lab Chronicle

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Client Sample ID: MW-306A
Date Collected: 10/19/22 11:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			587654	BMP	EET SL	10/28/22 11:19
Total/NA	Analysis	903.0		1	590889	FLC	EET SL	11/21/22 10:37
Total/NA	Prep	PrecSep_0			587664	BMP	EET SL	10/28/22 12:46
Total/NA	Analysis	904.0		1	590348	SCB	EET SL	11/16/22 13:59
Total/NA	Analysis	Ra226_Ra228 Pos		1	590900	MLK	EET SL	11/21/22 22:08

Client Sample ID: MW-307
Date Collected: 10/18/22 11:55
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			587654	BMP	EET SL	10/28/22 11:19
Total/NA	Analysis	903.0		1	590889	FLC	EET SL	11/21/22 10:37
Total/NA	Prep	PrecSep_0			587664	BMP	EET SL	10/28/22 12:46
Total/NA	Analysis	904.0		1	590348	SCB	EET SL	11/16/22 13:59
Total/NA	Analysis	Ra226_Ra228 Pos		1	590900	MLK	EET SL	11/21/22 22:08

Client Sample ID: MW-307A
Date Collected: 10/18/22 11:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			587654	BMP	EET SL	10/28/22 11:19
Total/NA	Analysis	903.0		1	590889	FLC	EET SL	11/21/22 10:37
Total/NA	Prep	PrecSep_0			587664	BMP	EET SL	10/28/22 12:46
Total/NA	Analysis	904.0		1	590348	SCB	EET SL	11/16/22 13:59
Total/NA	Analysis	Ra226_Ra228 Pos		1	590900	MLK	EET SL	11/21/22 22:08

Client Sample ID: MW-6
Date Collected: 10/18/22 09:15
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			587654	BMP	EET SL	10/28/22 11:19
Total/NA	Analysis	903.0		1	590887	FLC	EET SL	11/21/22 10:41
Total/NA	Prep	PrecSep_0			587664	BMP	EET SL	10/28/22 12:46
Total/NA	Analysis	904.0		1	590348	SCB	EET SL	11/16/22 14:00
Total/NA	Analysis	Ra226_Ra228 Pos		1	590900	MLK	EET SL	11/21/22 22:08

Lab Chronicle

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Client Sample ID: Field Blank

Date Collected: 10/19/22 10:30
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			587654	BMP	EET SL	10/28/22 11:19
Total/NA	Analysis	903.0		1	590887	FLC	EET SL	11/21/22 10:41
Total/NA	Prep	PrecSep_0			587664	BMP	EET SL	10/28/22 12:46
Total/NA	Analysis	904.0		1	590348	SCB	EET SL	11/16/22 14:00
Total/NA	Analysis	Ra226_Ra228 Pos		1	590900	MLK	EET SL	11/21/22 22:08

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: SCS Engineers
Job ID: 310-242903-2
Project/Site: Alliant Lansing 25222070

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	11-30-22
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228 Pos	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

eurofins | Environment Testing America

310-242903 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 1 of 6

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): | Corrected Temp (°C):

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:	PLSTNAT	
Uncorrected Temp (°C):	-0.8	
Corrected Temp (°C):	-0.8	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 2 of 6
Cooler Custody Seals Present? No	☒ Yes	☐ No	*If yes:* Cooler custody seals intact? ☒ Yes ☐
Sample Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 7 | Correction Factor (°C): +0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.3 | Corrected Temp (°C): -0.3

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

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Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 3 of 6

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.7 | Corrected Temp (°C): -0.7

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

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Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 4 of 6

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.8 | Corrected Temp (°C): -0.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

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Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/27/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 5 of 6
Cooler Custody Seals Present? No	☒ Yes	☐ No	*If yes:* Cooler custody seals intact? ☒ Yes ☐ No
Sample Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.6 | Corrected Temp (°C): -0.6

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

eurofins | Environment Testing America

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Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 6 of 6

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 7 | Correction Factor (°C): +0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -1.1 | Corrected Temp (°C): -1.1

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

est-mer ca Des Moines SC
214

Client Information	Sampler: Ethan Schaefer	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 310-74995-16398 1
Client Contact: Mr Tom Karwoski	Phone: 414-897-4253	E-Mail: Sandra Fredrick@et eurofinsus com	State of Origin:	Page: Page 1 of 2
Company: SCS Engineers	PWSID:			Job #:
Address: 2830 Dairy Drive	Due Date Requested:			
City: Madison	TAT Requested (days):			
State Zip: W 53718-6751	Compliance Project: Δ Yes Δ No			
Phone:	PO #: 25222070			
Email: *karwoski@scseng neers com	WO #:			
Project Name: Alliant Lansing 25222070	Project #: 31011020			
Site:	SSOW#:			

Analysis Requested

Preservation Codes
A HCL, B NaOH, C - Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M - Hexane, N - None, O - AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid O=waste/oil, BT=Tissue A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A Metals (14)	2540C Calcd, 9056A, ORGFM_28D, SM4500 H+	903 0 Radium 226	904 0 Radium 228	Total Number of containers	Special Instructions/Note
			Preservation Code:				D	N	D	D		
MW-301	10/17/22	15:15	G	Water			X	X	X	X		
MW-302	10/19/22	12:50		Water			X	X	X	X		
MW-303	10/17/22	16:25		Water			X	X	X	X		
MW-304	10/17/22	11:40		Water			X	X	X	X		
MW-305	10/18/22	17:00		Water			X	X	X	X		
MW-306	10/19/22	9:55		Water			X	X	X	X		
MW-302A	10/17/22	13:45		Water			X	X	X	X		
MW-304A	10/17/22	12:30		Water			X	X	X	X		
MW-306A	10/19/22	11:00		Water			X	X	X	X		
MW-307	10/18/22	11:55		Water			X	X	X	X		
MW-307A	10/18/22	11:00	↓	Water			X	X	X	X		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: II III IV Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company
	10/20/22 9:30	SCS		10/21/22 0935	
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No:

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613
Phone. 319-277-2401 Fax 319-277-2425

Chain of Custody Record

Client Information	Sampler: Ethan Shepler	Lab PM: Fredrick Sandie	Carrier Tracking No(s):	COC No: 310-74995-16398 2
Client Contact: Mr Tom Karwoski	Phone: 414-897-4253	E-Mail: Sandra Fredrick@et eurofinsus com	State of Origin:	Page: Page 2 of 2
Company: SCS Engineers	PWSID:	Analysis Requested		Job #:
Address: 2830 Dairy Drive	Due Date Requested:			Preservation Codes: A - HCL; B NaOH; C - Zn Acetate; D Nitric Acid; E NaHSO4; F MeOH; G Amchlor; H Ascorbic Acid; I Ice; J DI Water; K EDTA; L EDA; M Hexane; N None; O AsNaO2; P Na2O4S; Q Na2SO3; R Na2S2O3; S H2SO4; T TSP Dodecahydrate; U Acetone; V MCAA; W pH 4-5; Y Trizma; Z other (specify); Other:
City: Madison	TAT Requested (days):			
State, Zip: WI 53718-6751	Compliance Project: Δ Yes Δ No			
Phone:	PO #: 25222070			
Email: karwoski@scseng neers com	WO #:			
Project Name: Alliant Lansing 25222070	Project #: 31011020			
Site:	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater S=solid O=waste/oil, BT=Tissue A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A Metals (14)	2540C Calcd 9056A, ORGFM 28D, SM4500 H+	903 0 Radium 226	904 0 Radium 228	Total Number of containers	Special Instructions/Note
			Preservation Code:				D	N	D	D		
MW-6	10/18/22	9:15	G	Water			X	X	X	X		
Field Blank	10/18/22	10:30		Water			X	X	X	X		
				Water								

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify

Special Instructions/QC Requirements.

Empty Kit Relinquished by	Date	Time	Method of Shipment

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	10/20/22 9 30	SO		10/21/22 0935	
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time.	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks.

Ver 06/08/2021

Table 2. Sampling Points and Parameters CCR Rule Sampling Program Lansing Generating Station / SCS Engineers Project #25221070.00

COC	Group	Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-302A	MW-304A	MW-306A	MW-307	MW-307A	MW-308	MW-309	MW-6	Field Blank	TOTAL
COCs #1 (non-radium) & #2 (radium) - CCR Rule Parameters	Appendix III Parameters, Total (Unfiltered)	Boron	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Calcium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Chloride	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Fluoride	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		pH	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Sulfate	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		TDS	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Appendix IV Parameters, Total (Unfiltered)	Antimony	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Arsenic	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Barium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Beryllium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Cadmium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Chromium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Cobalt	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Fluoride	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Lead	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Lithium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Mercury	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Molybdenum	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Selenium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Thallium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Radium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Field Parameters	Groundwater Elevation	X	X	X	X	X	X	X	X	X	X	X	X	X	X		14
		pH (field)	X	X	X	X	X	X	X	X	X	X	X			X		12
		Specific Conductance	X	X	X	X	X	X	X	X	X	X	X			X		12
		Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X	X			X		12
		ORP	X	X	X	X	X	X	X	X	X	X	X			X		12
		Temperature	X	X	X	X	X	X	X	X	X	X	X			X		12
		Turbidity	X	X	X	X	X	X	X	X	X	X	X			X		12
		Color	X	X	X	X	X	X	X	X	X	X	X			X		12
		Odor	X	X	X	X	X	X	X	X	X	X	X			X		12
COC #3 - MNA Parameters	Total (Unfiltered)	Alkalinity - Carbonate	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Alkalinity - Bicarbonate	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Iron	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Magnesium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Manganese	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Potassium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Sodium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Dissolved (Filtered)	Arsenic		X				X										2
		Iron	X	X	X	X	X	X	X	X	X	X	X			X		12
		Manganese	X	X	X	X	X	X	X	X	X	X	X			X		12
		Molybdenum								X								1
	Field Parameters	Sulfide, Field	X	X	X	X	X	X	X	X	X	X	X			X		12
		Ferrous Iron, Field	X	X	X	X	X	X	X	X	X	X	X			X		12

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 310-55111.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sandra.Fredrick@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Iowa		Job #: 310-242903-2
Address: 13715 Rider Trail North,	Due Date Requested: 11/21/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Alliant Lansing 25222070	Project #: 31011020			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PrecSep_21 Radium-226 (GFPC)	904.0/PrecSep_0 Radium-228 (GFPC)	Ra226_228GFPC_P/ Combined Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-301 (310-242903-1)	10/17/22	15:15 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-302 (310-242903-2)	10/19/22	12:50 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-303 (310-242903-3)	10/17/22	16:25 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-304 (310-242903-4)	10/17/22	11:40 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-305 (310-242903-5)	10/18/22	17:00 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-306 (310-242903-6)	10/19/22	09:55 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-302A (310-242903-7)	10/17/22	13:45 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-304A (310-242903-8)	10/17/22	12:30 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-306A (310-242903-9)	10/19/22	11:00 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: FED EX	Date/Time: 10/24/22 1500	Company	Received by: FED EX	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time: OCT 25 2022 0900	Company: EAST C
Relinquished by:	Date/Time	Company	Received by: Autumn R. Johnson	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 310-55111.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sandra.Fredrick@et.eurofinsus.com	State of Origin: Iowa	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Iowa		Job #: 310-242903-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/21/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Alliant Lansing 25222070	Project #: 31011020			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PrecSep_21 Radium-226 (GFPC)	904.0/PrecSep_0 Radium-228 (GFPC)	Ra226_228GFPC_P/ Combined Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-307 (310-242903-10)	10/18/22	11:55 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-307A (310-242903-11)	10/18/22	11:00 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-6 (310-242903-12)	10/18/22	09:15 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
Field Blank (310-242903-13)	10/19/22	10:30 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by: FED EX	Date/Time: 10/21/22 1100	Company	Received by: FED EX	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: OCT 25 2022 0900	Company CHASTL
	Relinquished by:	Date/Time:	Company	Received by: Autumn R. Johnson	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-242903-2

Login Number: 242903
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-242903-2

Login Number: 242903
List Number: 2
Creator: Booker, Autumn R

List Source: Eurofins St. Louis
List Creation: 10/25/22 12:21 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070

Job ID: 310-242903-2

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
310-242903-1	MW-301	89.2
310-242903-2	MW-302	82.4
310-242903-3	MW-303	86.5
310-242903-4	MW-304	80.9
310-242903-5	MW-305	87.5
310-242903-6	MW-306	87.3
310-242903-7	MW-302A	91.9
310-242903-8	MW-304A	89.2
310-242903-9	MW-306A	85.0
310-242903-10	MW-307	90.7
310-242903-11	MW-307A	84.6
310-242903-11 DU	MW-307A	86.8
310-242903-12	MW-6	75.5
310-242903-13	Field Blank	87.3
LCS 160-587654/2-A	Lab Control Sample	92.9
MB 160-587654/1-A	Method Blank	99.0

Tracer/Carrier Legend

Ba = Ba

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
310-242903-1	MW-301	89.2	81.5
310-242903-2	MW-302	82.4	83.7
310-242903-3	MW-303	86.5	82.2
310-242903-4	MW-304	80.9	84.1
310-242903-5	MW-305	87.5	84.5
310-242903-6	MW-306	87.3	85.2
310-242903-7	MW-302A	91.9	83.7
310-242903-8	MW-304A	89.2	80.7
310-242903-9	MW-306A	85.0	81.9
310-242903-10	MW-307	90.7	85.2
310-242903-11	MW-307A	84.6	84.9
310-242903-11 DU	MW-307A	86.8	86.7
310-242903-12	MW-6	75.5	84.5
310-242903-13	Field Blank	87.3	88.6
LCS 160-587664/2-A	Lab Control Sample	92.9	85.6
MB 160-587664/1-A	Method Blank	99.0	85.6

Tracer/Carrier Legend

Ba = Ba
Y = Y Carrier

Eurofins Cedar Falls

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization

Generated
11/22/2022 8:36:23 AM

Authorized for release by
Sandie Fredrick, Project Manager II
Sandra.Fredrick@et.eurofinsus.com
(920)261-1660

eurofins | Environment Testing

ANALYTICAL REPORT

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-242903-3
Client Project/Site: Alliant Lansing 25222070 MNA

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett

Jodie Bracken

Authorized for release by:
11/4/2022 7:41:18 AM
Jodie Bracken, Project Management Assistant II
Jodie.Bracken@et.eurofinsus.com

Designee for

Sandie Fredrick, Project Manager II
(920)261-1660
Sandra.Fredrick@et.eurofinsus.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Case Narrative

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Job ID: 310-242903-3

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative
310-242903-3

Comments
No additional comments.

Receipt
The samples were received on 10/21/2022 9:35 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 6 coolers at receipt time were -1.1º C, -0.8º C, -0.8º C, -0.7º C, -0.4º C and -0.3º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-242903-1	MW-301	Water	10/17/22 15:15	10/21/22 09:35
310-242903-2	MW-302	Water	10/19/22 12:50	10/21/22 09:35
310-242903-3	MW-303	Water	10/17/22 16:25	10/21/22 09:35
310-242903-4	MW-304	Water	10/17/22 11:40	10/21/22 09:35
310-242903-5	MW-305	Water	10/18/22 17:00	10/21/22 09:35
310-242903-6	MW-306	Water	10/19/22 09:55	10/21/22 09:35
310-242903-7	MW-302A	Water	10/17/22 13:45	10/21/22 09:35
310-242903-8	MW-304A	Water	10/17/22 12:30	10/21/22 09:35
310-242903-9	MW-306A	Water	10/19/22 11:00	10/21/22 09:35
310-242903-10	MW-307	Water	10/18/22 11:55	10/21/22 09:35
310-242903-11	MW-307A	Water	10/18/22 11:00	10/21/22 09:35
310-242903-12	MW-6	Water	10/18/22 09:15	10/21/22 09:35
310-242903-13	Field Blank	Water	10/19/22 10:30	10/21/22 09:35

Detection Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-301 — Lab Sample ID: 310-242903-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	620		100	36	ug/L	1		6020A	Total/NA
Magnesium	18000		500	150	ug/L	1		6020A	Total/NA
Manganese	640		10	3.6	ug/L	1		6020A	Total/NA
Potassium	3200		500	150	ug/L	1		6020A	Total/NA
Sodium	14000		1000	610	ug/L	1		6020A	Total/NA
Iron	410	F1	100	36	ug/L	1		6020A	Dissolved
Manganese	590		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	230		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	230		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-302 — Lab Sample ID: 310-242903-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	43000		100	36	ug/L	1		6020A	Total/NA
Magnesium	42000		500	150	ug/L	1		6020A	Total/NA
Manganese	2300		10	3.6	ug/L	1		6020A	Total/NA
Potassium	3900		500	150	ug/L	1		6020A	Total/NA
Sodium	19000		1000	610	ug/L	1		6020A	Total/NA
Arsenic	50		2.0	0.75	ug/L	1		6020A	Dissolved
Iron	40000		100	36	ug/L	1		6020A	Dissolved
Manganese	2500		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	540		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	540		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-303 — Lab Sample ID: 310-242903-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	13000		500	150	ug/L	1		6020A	Total/NA
Manganese	220		10	3.6	ug/L	1		6020A	Total/NA
Potassium	3100		500	150	ug/L	1		6020A	Total/NA
Sodium	15000		1000	610	ug/L	1		6020A	Total/NA
Iron	46	J	100	36	ug/L	1		6020A	Dissolved
Manganese	110		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	120		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	120		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-304 — Lab Sample ID: 310-242903-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	34000		500	150	ug/L	1		6020A	Total/NA
Potassium	1400		500	150	ug/L	1		6020A	Total/NA
Sodium	6300		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	330		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	330		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-305 — Lab Sample ID: 310-242903-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	8500		100	36	ug/L	1		6020A	Total/NA
Magnesium	30000		500	150	ug/L	1		6020A	Total/NA
Manganese	1300		10	3.6	ug/L	1		6020A	Total/NA
Potassium	1500		500	150	ug/L	1		6020A	Total/NA
Sodium	7000		1000	610	ug/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-305 (Continued) — Lab Sample ID: 310-242903-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	7400		100	36	ug/L	1		6020A	Dissolved
Manganese	1400		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	360		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	360		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-306 — Lab Sample ID: 310-242903-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	42000		100	36	ug/L	1		6020A	Total/NA
Magnesium	46000		500	150	ug/L	1		6020A	Total/NA
Manganese	5500		100	36	ug/L	10		6020A	Total/NA
Potassium	8300		500	150	ug/L	1		6020A	Total/NA
Sodium	140000		1000	610	ug/L	1		6020A	Total/NA
Arsenic	7.0		2.0	0.75	ug/L	1		6020A	Dissolved
Iron	41000		100	36	ug/L	1		6020A	Dissolved
Manganese	7000		70	25	ug/L	7		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	800		25	12	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	800		25	12	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-302A — Lab Sample ID: 310-242903-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	32000		500	150	ug/L	1		6020A	Total/NA
Potassium	900		500	150	ug/L	1		6020A	Total/NA
Sodium	6800		1000	610	ug/L	1		6020A	Total/NA
Iron	55	J	100	36	ug/L	1		6020A	Dissolved
Manganese	5.4	J	10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	290		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	290		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-304A — Lab Sample ID: 310-242903-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	380		100	36	ug/L	1		6020A	Total/NA
Magnesium	14000		500	150	ug/L	1		6020A	Total/NA
Manganese	31		10	3.6	ug/L	1		6020A	Total/NA
Potassium	540		500	150	ug/L	1		6020A	Total/NA
Sodium	49000		1000	610	ug/L	1		6020A	Total/NA
Molybdenum	140		2.0	1.2	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	180		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	180		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-306A — Lab Sample ID: 310-242903-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	1500		100	36	ug/L	1		6020A	Total/NA
Magnesium	32000		500	150	ug/L	1		6020A	Total/NA
Manganese	940		10	3.6	ug/L	1		6020A	Total/NA
Potassium	1000		500	150	ug/L	1		6020A	Total/NA
Sodium	9100		1000	610	ug/L	1		6020A	Total/NA
Iron	1400		100	36	ug/L	1		6020A	Dissolved
Manganese	1000		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	350		10	4.6	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-306A (Continued) — Lab Sample ID: 310-242903-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Alkalinity as CaCO3	350		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-307 — Lab Sample ID: 310-242903-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	110		100	36	ug/L	1		6020A	Total/NA
Magnesium	11000		500	150	ug/L	1		6020A	Total/NA
Manganese	430		10	3.6	ug/L	1		6020A	Total/NA
Potassium	2900		500	150	ug/L	1		6020A	Total/NA
Sodium	24000		1000	610	ug/L	1		6020A	Total/NA
Iron	90	J	100	36	ug/L	1		6020A	Dissolved
Manganese	450		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	100		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	100		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-307A — Lab Sample ID: 310-242903-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	330		100	36	ug/L	1		6020A	Total/NA
Magnesium	24000		500	150	ug/L	1		6020A	Total/NA
Manganese	610		10	3.6	ug/L	1		6020A	Total/NA
Potassium	2000		500	150	ug/L	1		6020A	Total/NA
Sodium	28000		1000	610	ug/L	1		6020A	Total/NA
Iron	300		100	36	ug/L	1		6020A	Dissolved
Manganese	640		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	270		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	270		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-6 — Lab Sample ID: 310-242903-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	32000		500	150	ug/L	1		6020A	Total/NA
Potassium	930		500	150	ug/L	1		6020A	Total/NA
Sodium	4100		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	300		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	300		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Field Blank — Lab Sample ID: 310-242903-13

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-301

Date Collected: 10/17/22 15:15
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-1

Matrix: Water

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	620		100	36	ug/L		10/24/22 10:00	11/02/22 17:58	1
Magnesium	18000		500	150	ug/L		10/24/22 10:00	11/02/22 17:58	1
Manganese	640		10	3.6	ug/L		10/24/22 10:00	11/02/22 17:58	1
Potassium	3200		500	150	ug/L		10/24/22 10:00	11/02/22 17:58	1
Sodium	14000		1000	610	ug/L		10/24/22 10:00	11/02/22 17:58	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	410	F1	100	36	ug/L		10/24/22 10:00	10/28/22 21:50	1
Manganese	590		10	3.6	ug/L		10/24/22 10:00	10/28/22 21:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	230		10	4.6	mg/L			10/27/22 08:33	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<4.6		10	4.6	mg/L			10/27/22 08:33	1
Total Alkalinity as CaCO3 (SM 2320B)	230		10	4.6	mg/L			10/27/22 08:33	1

Client Sample Results

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-302

Date Collected: 10/19/22 12:50
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-2

Matrix: Water

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	43000		100	36	ug/L		10/24/22 10:00	11/02/22 18:01	1
Magnesium	42000		500	150	ug/L		10/24/22 10:00	11/02/22 18:01	1
Manganese	2300		10	3.6	ug/L		10/24/22 10:00	11/02/22 18:01	1
Potassium	3900		500	150	ug/L		10/24/22 10:00	11/02/22 18:01	1
Sodium	19000		1000	610	ug/L		10/24/22 10:00	11/02/22 18:01	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	50		2.0	0.75	ug/L		10/24/22 10:00	10/31/22 19:00	1
Iron	40000		100	36	ug/L		10/24/22 10:00	10/31/22 19:00	1
Manganese	2500		10	3.6	ug/L		10/24/22 10:00	10/31/22 19:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	540		10	4.6	mg/L			10/29/22 10:42	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<4.6		10	4.6	mg/L			10/29/22 10:42	1
Total Alkalinity as CaCO3 (SM 2320B)	540		10	4.6	mg/L			10/29/22 10:42	1

Client Sample Results

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-303

Date Collected: 10/17/22 16:25
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-3

Matrix: Water

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		10/24/22 10:00	11/02/22 18:04	1
Magnesium	**13000**		500	150	ug/L		10/24/22 10:00	11/02/22 18:04	1
Manganese	**220**		10	3.6	ug/L		10/24/22 10:00	11/02/22 18:04	1
Potassium	**3100**		500	150	ug/L		10/24/22 10:00	11/02/22 18:04	1
Sodium	**15000**		1000	610	ug/L		10/24/22 10:00	11/02/22 18:04	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**46**	**J**	100	36	ug/L		10/24/22 10:00	10/31/22 19:03	1
Manganese	**110**		10	3.6	ug/L		10/24/22 10:00	10/31/22 19:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**120**		10	4.6	mg/L			10/27/22 08:33	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<4.6		10	4.6	mg/L			10/27/22 08:33	1
Total Alkalinity as CaCO3 (SM 2320B)	**120**		10	4.6	mg/L			10/27/22 08:33	1

Client Sample Results

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-304

Date Collected: 10/17/22 11:40
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-4

Matrix: Water

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		10/24/22 10:00	11/02/22 18:07	1
Magnesium	**34000**		500	150	ug/L		10/24/22 10:00	11/02/22 18:07	1
Manganese	<3.6		10	3.6	ug/L		10/24/22 10:00	11/02/22 18:07	1
Potassium	**1400**		500	150	ug/L		10/24/22 10:00	11/02/22 18:07	1
Sodium	**6300**		1000	610	ug/L		10/24/22 10:00	11/02/22 18:07	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		10/24/22 10:00	10/31/22 19:07	1
Manganese	<3.6		10	3.6	ug/L		10/24/22 10:00	10/31/22 19:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**330**		10	4.6	mg/L			10/27/22 08:33	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<4.6		10	4.6	mg/L			10/27/22 08:33	1
Total Alkalinity as CaCO3 (SM 2320B)	**330**		10	4.6	mg/L			10/27/22 08:33	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-305

Date Collected: 10/18/22 17:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-5

Matrix: Water

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	8500		100	36	ug/L		10/24/22 10:00	11/02/22 18:11	1
Magnesium	30000		500	150	ug/L		10/24/22 10:00	11/02/22 18:11	1
Manganese	1300		10	3.6	ug/L		10/24/22 10:00	11/02/22 18:11	1
Potassium	1500		500	150	ug/L		10/24/22 10:00	11/02/22 18:11	1
Sodium	7000		1000	610	ug/L		10/24/22 10:00	11/02/22 18:11	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	7400		100	36	ug/L		10/24/22 10:00	10/31/22 19:10	1
Manganese	1400		10	3.6	ug/L		10/24/22 10:00	10/31/22 19:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	360		10	4.6	mg/L			10/27/22 08:33	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<4.6		10	4.6	mg/L			10/27/22 08:33	1
Total Alkalinity as CaCO3 (SM 2320B)	360		10	4.6	mg/L			10/27/22 08:33	1

Client Sample Results

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-306

Date Collected: 10/19/22 09:55
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-6

Matrix: Water

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	42000		100	36	ug/L		10/24/22 10:00	11/02/22 18:17	1
Magnesium	46000		500	150	ug/L		10/24/22 10:00	11/02/22 18:17	1
Manganese	5500		100	36	ug/L		10/24/22 10:00	11/03/22 13:51	10
Potassium	8300		500	150	ug/L		10/24/22 10:00	11/02/22 18:17	1
Sodium	140000		1000	610	ug/L		10/24/22 10:00	11/02/22 18:17	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.0		2.0	0.75	ug/L		10/24/22 10:00	10/31/22 20:26	1
Iron	41000		100	36	ug/L		10/24/22 10:00	10/31/22 20:26	1
Manganese	7000		70	25	ug/L		10/24/22 10:00	11/01/22 13:51	7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	800		25	12	mg/L			10/29/22 12:41	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<12		25	12	mg/L			10/29/22 12:41	1
Total Alkalinity as CaCO3 (SM 2320B)	800		25	12	mg/L			10/29/22 12:41	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-302A

Date Collected: 10/17/22 13:45
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-7

Matrix: Water

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		10/24/22 10:00	11/02/22 18:20	1
Magnesium	**32000**		500	150	ug/L		10/24/22 10:00	11/02/22 18:20	1
Manganese	<3.6		10	3.6	ug/L		10/24/22 10:00	11/02/22 18:20	1
Potassium	**900**		500	150	ug/L		10/24/22 10:00	11/02/22 18:20	1
Sodium	**6800**		1000	610	ug/L		10/24/22 10:00	11/02/22 18:20	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**55**	**J**	100	36	ug/L		10/24/22 10:00	10/31/22 20:29	1
Manganese	**5.4**	**J**	10	3.6	ug/L		10/24/22 10:00	10/31/22 20:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**290**		10	4.6	mg/L			10/27/22 08:33	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<4.6		10	4.6	mg/L			10/27/22 08:33	1
Total Alkalinity as CaCO3 (SM 2320B)	**290**		10	4.6	mg/L			10/27/22 08:33	1

Client Sample Results

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-304A

Date Collected: 10/17/22 12:30
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-8

Matrix: Water

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**380**		100	36	ug/L		10/24/22 10:00	11/02/22 18:46	1
Magnesium	**14000**		500	150	ug/L		10/24/22 10:00	11/02/22 18:46	1
Manganese	**31**		10	3.6	ug/L		10/24/22 10:00	11/02/22 18:46	1
Potassium	**540**		500	150	ug/L		10/24/22 10:00	11/02/22 18:46	1
Sodium	**49000**		1000	610	ug/L		10/24/22 10:00	11/02/22 18:46	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		10/24/22 10:00	10/31/22 20:33	1
Manganese	<3.6		10	3.6	ug/L		10/24/22 10:00	10/31/22 20:33	1
Molybdenum	**140**		2.0	1.2	ug/L		10/24/22 10:00	10/31/22 20:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**180**		10	4.6	mg/L			10/27/22 08:33	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<4.6		10	4.6	mg/L			10/27/22 08:33	1
Total Alkalinity as CaCO3 (SM 2320B)	**180**		10	4.6	mg/L			10/27/22 08:33	1

Client Sample Results

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-306A

Date Collected: 10/19/22 11:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-9

Matrix: Water

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1500		100	36	ug/L		10/24/22 10:00	11/02/22 19:11	1
Magnesium	32000		500	150	ug/L		10/24/22 10:00	11/02/22 19:11	1
Manganese	940		10	3.6	ug/L		10/24/22 10:00	11/02/22 19:11	1
Potassium	1000		500	150	ug/L		10/24/22 10:00	11/02/22 19:11	1
Sodium	9100		1000	610	ug/L		10/24/22 10:00	11/02/22 19:11	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1400		100	36	ug/L		10/24/22 10:00	10/31/22 20:36	1
Manganese	1000		10	3.6	ug/L		10/24/22 10:00	10/31/22 20:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	350		10	4.6	mg/L			10/29/22 12:41	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<4.6		10	4.6	mg/L			10/29/22 12:41	1
Total Alkalinity as CaCO3 (SM 2320B)	350		10	4.6	mg/L			10/29/22 12:41	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-307

Date Collected: 10/18/22 11:55
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-10

Matrix: Water

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	110		100	36	ug/L		10/24/22 10:00	11/02/22 19:14	1
Magnesium	11000		500	150	ug/L		10/24/22 10:00	11/02/22 19:14	1
Manganese	430		10	3.6	ug/L		10/24/22 10:00	11/02/22 19:14	1
Potassium	2900		500	150	ug/L		10/24/22 10:00	11/02/22 19:14	1
Sodium	24000		1000	610	ug/L		10/24/22 10:00	11/02/22 19:14	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	90	J	100	36	ug/L		10/24/22 10:00	10/31/22 20:40	1
Manganese	450		10	3.6	ug/L		10/24/22 10:00	10/31/22 20:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	100		10	4.6	mg/L			10/27/22 08:33	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<4.6		10	4.6	mg/L			10/27/22 08:33	1
Total Alkalinity as CaCO3 (SM 2320B)	100		10	4.6	mg/L			10/27/22 08:33	1

Client Sample Results

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-307A

Date Collected: 10/18/22 11:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-11

Matrix: Water

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	330		100	36	ug/L		10/24/22 10:00	11/02/22 19:17	1
Magnesium	24000		500	150	ug/L		10/24/22 10:00	11/02/22 19:17	1
Manganese	610		10	3.6	ug/L		10/24/22 10:00	11/02/22 19:17	1
Potassium	2000		500	150	ug/L		10/24/22 10:00	11/02/22 19:17	1
Sodium	28000		1000	610	ug/L		10/24/22 10:00	11/02/22 19:17	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	300		100	36	ug/L		10/24/22 10:00	10/31/22 20:43	1
Manganese	640		10	3.6	ug/L		10/24/22 10:00	10/31/22 20:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	270		10	4.6	mg/L			10/27/22 08:33	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<4.6		10	4.6	mg/L			10/27/22 08:33	1
Total Alkalinity as CaCO3 (SM 2320B)	270		10	4.6	mg/L			10/27/22 08:33	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-6

Date Collected: 10/18/22 09:15
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-12

Matrix: Water

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		10/24/22 10:00	11/02/22 19:20	1
Magnesium	**32000**		500	150	ug/L		10/24/22 10:00	11/02/22 19:20	1
Manganese	<3.6		10	3.6	ug/L		10/24/22 10:00	11/02/22 19:20	1
Potassium	**930**		500	150	ug/L		10/24/22 10:00	11/02/22 19:20	1
Sodium	**4100**		1000	610	ug/L		10/24/22 10:00	11/02/22 19:20	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		10/24/22 10:00	10/31/22 20:50	1
Manganese	<3.6		10	3.6	ug/L		10/24/22 10:00	10/31/22 20:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**300**		10	4.6	mg/L			10/27/22 08:33	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<4.6		10	4.6	mg/L			10/27/22 08:33	1
Total Alkalinity as CaCO3 (SM 2320B)	**300**		10	4.6	mg/L			10/27/22 08:33	1

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: Field Blank

Date Collected: 10/19/22 10:30
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-13

Matrix: Water

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		10/24/22 10:00	11/02/22 19:23	1
Magnesium	<150		500	150	ug/L		10/24/22 10:00	11/02/22 19:23	1
Manganese	<3.6		10	3.6	ug/L		10/24/22 10:00	11/02/22 19:23	1
Potassium	<150		500	150	ug/L		10/24/22 10:00	11/02/22 19:23	1
Sodium	<610		1000	610	ug/L		10/24/22 10:00	11/02/22 19:23	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		10/24/22 10:00	10/31/22 20:54	1
Manganese	<3.6		10	3.6	ug/L		10/24/22 10:00	10/31/22 20:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	<2.3		5.0	2.3	mg/L			10/29/22 14:39	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.3		5.0	2.3	mg/L			10/29/22 14:39	1
Total Alkalinity as CaCO3 (SM 2320B)	<2.3		5.0	2.3	mg/L			10/29/22 14:39	1

Definitions/Glossary

Client: SCS Engineers
Job ID: 310-242903-3
Project/Site: Alliant Lansing 25222070 MNA

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-369464/1-A
Matrix: Water
Analysis Batch: 370744

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 369464

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		10/24/22 10:00	11/02/22 17:03	1
Magnesium	<150		500	150	ug/L		10/24/22 10:00	11/02/22 17:03	1
Manganese	<3.6		10	3.6	ug/L		10/24/22 10:00	11/02/22 17:03	1
Potassium	<150		500	150	ug/L		10/24/22 10:00	11/02/22 17:03	1
Sodium	<610		1000	610	ug/L		10/24/22 10:00	11/02/22 17:03	1

Lab Sample ID: LCS 310-369464/2-A
Matrix: Water
Analysis Batch: 370744

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 369464

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	200	230		ug/L		115	80 - 120
Magnesium	2000	1920		ug/L		96	80 - 120
Manganese	100	89.5		ug/L		89	80 - 120
Potassium	2000	2000		ug/L		100	80 - 120
Sodium	2000	2050		ug/L		102	80 - 120

Lab Sample ID: 310-242903-5 DU
Matrix: Water
Analysis Batch: 370744

Client Sample ID: MW-305
Prep Type: Total/NA
Prep Batch: 369464

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Iron	8500		8510		ug/L		0.1	20
Magnesium	30000		29600		ug/L		0.3	20
Manganese	1300		1330		ug/L		0.6	20
Potassium	1500		1520		ug/L		1	20
Sodium	7000		6850		ug/L		2	20

Lab Sample ID: MB 310-369468/1-A
Matrix: Water
Analysis Batch: 370250

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 369468

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.75		2.0	0.75	ug/L		10/24/22 10:00	10/28/22 21:22	1
Iron	<36		100	36	ug/L		10/24/22 10:00	10/28/22 21:22	1
Manganese	<3.6		10	3.6	ug/L		10/24/22 10:00	10/28/22 21:22	1
Molybdenum	<1.2		2.0	1.2	ug/L		10/24/22 10:00	10/28/22 21:22	1

Lab Sample ID: LCS 310-369468/2-A
Matrix: Water
Analysis Batch: 370250

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 369468

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	174		ug/L		87	80 - 120
Iron	200	173		ug/L		87	80 - 120
Molybdenum	200	177		ug/L		89	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-242903-1 MS
Matrix: Water
Analysis Batch: 370250

Client Sample ID: MW-301
Prep Type: Dissolved
Prep Batch: 369468

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	4.3		200	174		ug/L		85	75 - 125
Iron	410	F1	200	560	F1	ug/L		72	75 - 125
Manganese	590		100	662	4	ug/L		74	75 - 125
Molybdenum	10		200	190		ug/L		90	75 - 125

Lab Sample ID: 310-242903-1 MSD
Matrix: Water
Analysis Batch: 370250

Client Sample ID: MW-301
Prep Type: Dissolved
Prep Batch: 369468

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	4.3		200	178		ug/L		87	75 - 125	2	20
Iron	410	F1	200	583		ug/L		84	75 - 125	4	20
Manganese	590		100	689	4	ug/L		101	75 - 125	4	20
Molybdenum	10		200	195		ug/L		92	75 - 125	2	20

Lab Sample ID: 310-242903-11 DU
Matrix: Water
Analysis Batch: 370434

Client Sample ID: MW-307A
Prep Type: Dissolved
Prep Batch: 369468

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	1.9	J	1.92	J	ug/L		1	20
Iron	300		295		ug/L		0.9	20
Manganese	640		653		ug/L		1	20
Molybdenum	5.9		5.79		ug/L		2	20

Method: 2320B - Alkalinity (Low Level)

Lab Sample ID: MB 310-370263/1
Matrix: Water
Analysis Batch: 370263

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			10/29/22 14:39	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			10/29/22 14:39	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			10/29/22 14:39	1

Lab Sample ID: LCS 310-370263/2
Matrix: Water
Analysis Batch: 370263

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	1000	1020		mg/L		102	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 310-369983/1
Matrix: Water
Analysis Batch: 369983

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			10/27/22 08:33	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			10/27/22 08:33	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			10/27/22 08:33	1

Lab Sample ID: LCS 310-369983/2
Matrix: Water
Analysis Batch: 369983

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	1000	945		mg/L		94	90 - 110

Lab Sample ID: MB 310-370248/1
Matrix: Water
Analysis Batch: 370248

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			10/29/22 10:42	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			10/29/22 10:42	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			10/29/22 10:42	1

Lab Sample ID: LCS 310-370248/2
Matrix: Water
Analysis Batch: 370248

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	1000	957		mg/L		96	90 - 110

Lab Sample ID: MB 310-370260/1
Matrix: Water
Analysis Batch: 370260

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			10/29/22 12:41	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			10/29/22 12:41	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			10/29/22 12:41	1

Lab Sample ID: LCS 310-370260/2
Matrix: Water
Analysis Batch: 370260

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	1000	979		mg/L		98	90 - 110

Lab Sample ID: 310-242903-9 MS
Matrix: Water
Analysis Batch: 370260

Client Sample ID: MW-306A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	350		200	522		mg/L		87	71 - 130

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 310-242903-9 MSD
Matrix: Water
Analysis Batch: 370260

Client Sample ID: MW-306A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Alkalinity as CaCO3	350		200	522		mg/L		87	71 - 130	0	10

Metals

Prep Batch: 369464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-1	MW-301	Total/NA	Water	3005A	
310-242903-2	MW-302	Total/NA	Water	3005A	
310-242903-3	MW-303	Total/NA	Water	3005A	
310-242903-4	MW-304	Total/NA	Water	3005A	
310-242903-5	MW-305	Total/NA	Water	3005A	
310-242903-6	MW-306	Total/NA	Water	3005A	
310-242903-7	MW-302A	Total/NA	Water	3005A	
310-242903-8	MW-304A	Total/NA	Water	3005A	
310-242903-9	MW-306A	Total/NA	Water	3005A	
310-242903-10	MW-307	Total/NA	Water	3005A	
310-242903-11	MW-307A	Total/NA	Water	3005A	
310-242903-12	MW-6	Total/NA	Water	3005A	
310-242903-13	Field Blank	Total/NA	Water	3005A	
MB 310-369464/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-369464/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-242903-5 DU	MW-305	Total/NA	Water	3005A	

Prep Batch: 369468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-1	MW-301	Dissolved	Water	3005A	
310-242903-2	MW-302	Dissolved	Water	3005A	
310-242903-3	MW-303	Dissolved	Water	3005A	
310-242903-4	MW-304	Dissolved	Water	3005A	
310-242903-5	MW-305	Dissolved	Water	3005A	
310-242903-6	MW-306	Dissolved	Water	3005A	
310-242903-7	MW-302A	Dissolved	Water	3005A	
310-242903-8	MW-304A	Dissolved	Water	3005A	
310-242903-9	MW-306A	Dissolved	Water	3005A	
310-242903-10	MW-307	Dissolved	Water	3005A	
310-242903-11	MW-307A	Dissolved	Water	3005A	
310-242903-12	MW-6	Dissolved	Water	3005A	
310-242903-13	Field Blank	Dissolved	Water	3005A	
MB 310-369468/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-369468/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-242903-1 MS	MW-301	Dissolved	Water	3005A	
310-242903-1 MSD	MW-301	Dissolved	Water	3005A	
310-242903-11 DU	MW-307A	Dissolved	Water	3005A	

Analysis Batch: 370250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-1	MW-301	Dissolved	Water	6020A	369468
MB 310-369468/1-A	Method Blank	Total/NA	Water	6020A	369468
LCS 310-369468/2-A	Lab Control Sample	Total/NA	Water	6020A	369468
310-242903-1 MS	MW-301	Dissolved	Water	6020A	369468
310-242903-1 MSD	MW-301	Dissolved	Water	6020A	369468

Analysis Batch: 370434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-2	MW-302	Dissolved	Water	6020A	369468
310-242903-3	MW-303	Dissolved	Water	6020A	369468
310-242903-4	MW-304	Dissolved	Water	6020A	369468

Metals (Continued)

Analysis Batch: 370434 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-5	MW-305	Dissolved	Water	6020A	369468
310-242903-6	MW-306	Dissolved	Water	6020A	369468
310-242903-7	MW-302A	Dissolved	Water	6020A	369468
310-242903-8	MW-304A	Dissolved	Water	6020A	369468
310-242903-9	MW-306A	Dissolved	Water	6020A	369468
310-242903-10	MW-307	Dissolved	Water	6020A	369468
310-242903-11	MW-307A	Dissolved	Water	6020A	369468
310-242903-12	MW-6	Dissolved	Water	6020A	369468
310-242903-13	Field Blank	Dissolved	Water	6020A	369468
310-242903-11 DU	MW-307A	Dissolved	Water	6020A	369468

Analysis Batch: 370535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-6	MW-306	Dissolved	Water	6020A	369468

Analysis Batch: 370744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-1	MW-301	Total/NA	Water	6020A	369464
310-242903-2	MW-302	Total/NA	Water	6020A	369464
310-242903-3	MW-303	Total/NA	Water	6020A	369464
310-242903-4	MW-304	Total/NA	Water	6020A	369464
310-242903-5	MW-305	Total/NA	Water	6020A	369464
310-242903-6	MW-306	Total/NA	Water	6020A	369464
310-242903-7	MW-302A	Total/NA	Water	6020A	369464
310-242903-8	MW-304A	Total/NA	Water	6020A	369464
310-242903-9	MW-306A	Total/NA	Water	6020A	369464
310-242903-10	MW-307	Total/NA	Water	6020A	369464
310-242903-11	MW-307A	Total/NA	Water	6020A	369464
310-242903-12	MW-6	Total/NA	Water	6020A	369464
310-242903-13	Field Blank	Total/NA	Water	6020A	369464
MB 310-369464/1-A	Method Blank	Total/NA	Water	6020A	369464
LCS 310-369464/2-A	Lab Control Sample	Total/NA	Water	6020A	369464
310-242903-5 DU	MW-305	Total/NA	Water	6020A	369464

Analysis Batch: 370838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-6	MW-306	Total/NA	Water	6020A	369464

General Chemistry

Analysis Batch: 369983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-1	MW-301	Total/NA	Water	SM 2320B	
310-242903-3	MW-303	Total/NA	Water	SM 2320B	
310-242903-4	MW-304	Total/NA	Water	SM 2320B	
310-242903-5	MW-305	Total/NA	Water	SM 2320B	
310-242903-7	MW-302A	Total/NA	Water	SM 2320B	
310-242903-8	MW-304A	Total/NA	Water	SM 2320B	
310-242903-10	MW-307	Total/NA	Water	SM 2320B	
310-242903-11	MW-307A	Total/NA	Water	SM 2320B	
310-242903-12	MW-6	Total/NA	Water	SM 2320B	

General Chemistry (Continued)

Analysis Batch: 369983 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-369983/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-369983/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 370248

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-2	MW-302	Total/NA	Water	SM 2320B	
MB 310-370248/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-370248/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 370260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-6	MW-306	Total/NA	Water	SM 2320B	
310-242903-9	MW-306A	Total/NA	Water	SM 2320B	
MB 310-370260/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-370260/2	Lab Control Sample	Total/NA	Water	SM 2320B	
310-242903-9 MS	MW-306A	Total/NA	Water	SM 2320B	
310-242903-9 MSD	MW-306A	Total/NA	Water	SM 2320B	

Analysis Batch: 370263

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-242903-13	Field Blank	Total/NA	Water	2320B	
MB 310-370263/1	Method Blank	Total/NA	Water	2320B	
LCS 310-370263/2	Lab Control Sample	Total/NA	Water	2320B	

Lab Chronicle

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-301
Date Collected: 10/17/22 15:15
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			369468	QTZ5	EET CF	10/24/22 10:00
Dissolved	Analysis	6020A		1	370250	A6US	EET CF	10/28/22 21:50
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 17:58
Total/NA	Analysis	SM 2320B		1	369983	MAQ3	EET CF	10/27/22 08:33

Client Sample ID: MW-302
Date Collected: 10/19/22 12:50
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			369468	QTZ5	EET CF	10/24/22 10:00
Dissolved	Analysis	6020A		1	370434	A6US	EET CF	10/31/22 19:00
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 18:01
Total/NA	Analysis	SM 2320B		1	370248	MAQ3	EET CF	10/29/22 10:42

Client Sample ID: MW-303
Date Collected: 10/17/22 16:25
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			369468	QTZ5	EET CF	10/24/22 10:00
Dissolved	Analysis	6020A		1	370434	A6US	EET CF	10/31/22 19:03
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 18:04
Total/NA	Analysis	SM 2320B		1	369983	MAQ3	EET CF	10/27/22 08:33

Client Sample ID: MW-304
Date Collected: 10/17/22 11:40
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			369468	QTZ5	EET CF	10/24/22 10:00
Dissolved	Analysis	6020A		1	370434	A6US	EET CF	10/31/22 19:07
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 18:07
Total/NA	Analysis	SM 2320B		1	369983	MAQ3	EET CF	10/27/22 08:33

Lab Chronicle

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: MW-305

Date Collected: 10/18/22 17:00
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			369468	QTZ5	EET CF	10/24/22 10:00
Dissolved	Analysis	6020A		1	370434	A6US	EET CF	10/31/22 19:10
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 18:11
Total/NA	Analysis	SM 2320B		1	369983	MAQ3	EET CF	10/27/22 08:33

Client Sample ID: MW-306

Date Collected: 10/19/22 09:55
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			369468	QTZ5	EET CF	10/24/22 10:00
Dissolved	Analysis	6020A		1	370434	A6US	EET CF	10/31/22 20:26
Dissolved	Prep	3005A			369468	QTZ5	EET CF	10/24/22 10:00
Dissolved	Analysis	6020A		7	370535	A6US	EET CF	11/01/22 13:51
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 18:17
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		10	370838	A6US	EET CF	11/03/22 13:51
Total/NA	Analysis	SM 2320B		1	370260	MAQ3	EET CF	10/29/22 12:41

Client Sample ID: MW-302A

Date Collected: 10/17/22 13:45
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			369468	QTZ5	EET CF	10/24/22 10:00
Dissolved	Analysis	6020A		1	370434	A6US	EET CF	10/31/22 20:29
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 18:20
Total/NA	Analysis	SM 2320B		1	369983	MAQ3	EET CF	10/27/22 08:33

Client Sample ID: MW-304A

Date Collected: 10/17/22 12:30
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			369468	QTZ5	EET CF	10/24/22 10:00
Dissolved	Analysis	6020A		1	370434	A6US	EET CF	10/31/22 20:33
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 18:46
Total/NA	Analysis	SM 2320B		1	369983	MAQ3	EET CF	10/27/22 08:33

Lab Chronicle

Client: SCS Engineers
Job ID: 310-242903-3
Project/Site: Alliant Lansing 25222070 MNA

Client Sample ID: MW-306A
Lab Sample ID: 310-242903-9
Date Collected: 10/19/22 11:00
Matrix: Water
Date Received: 10/21/22 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			369468	QTZ5	EET CF	10/24/22 10:00
Dissolved	Analysis	6020A		1	370434	A6US	EET CF	10/31/22 20:36
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 19:11
Total/NA	Analysis	SM 2320B		1	370260	MAQ3	EET CF	10/29/22 12:41

Client Sample ID: MW-307
Lab Sample ID: 310-242903-10
Date Collected: 10/18/22 11:55
Matrix: Water
Date Received: 10/21/22 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			369468	QTZ5	EET CF	10/24/22 10:00
Dissolved	Analysis	6020A		1	370434	A6US	EET CF	10/31/22 20:40
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 19:14
Total/NA	Analysis	SM 2320B		1	369983	MAQ3	EET CF	10/27/22 08:33

Client Sample ID: MW-307A
Lab Sample ID: 310-242903-11
Date Collected: 10/18/22 11:00
Matrix: Water
Date Received: 10/21/22 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			369468	QTZ5	EET CF	10/24/22 10:00
Dissolved	Analysis	6020A		1	370434	A6US	EET CF	10/31/22 20:43
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 19:17
Total/NA	Analysis	SM 2320B		1	369983	MAQ3	EET CF	10/27/22 08:33

Client Sample ID: MW-6
Lab Sample ID: 310-242903-12
Date Collected: 10/18/22 09:15
Matrix: Water
Date Received: 10/21/22 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			369468	QTZ5	EET CF	10/24/22 10:00
Dissolved	Analysis	6020A		1	370434	A6US	EET CF	10/31/22 20:50
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 19:20
Total/NA	Analysis	SM 2320B		1	369983	MAQ3	EET CF	10/27/22 08:33

Lab Chronicle

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Client Sample ID: Field Blank

Date Collected: 10/19/22 10:30
Date Received: 10/21/22 09:35

Lab Sample ID: 310-242903-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			369468	QTZ5	EET CF	10/24/22 10:00
Dissolved	Analysis	6020A		1	370434	A6US	EET CF	10/31/22 20:54
Total/NA	Prep	3005A			369464	QTZ5	EET CF	10/24/22 10:00
Total/NA	Analysis	6020A		1	370744	A6US	EET CF	11/02/22 19:23
Total/NA	Analysis	2320B		1	370263	MAQ3	EET CF	10/29/22 14:39

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: SCS Engineers
Job ID: 310-242903-3
Project/Site: Alliant Lansing 25222070 MNA

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-23

Method Summary

Client: SCS Engineers
Project/Site: Alliant Lansing 25222070 MNA

Job ID: 310-242903-3

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	EET CF
2320B	Alkalinity (Low Level)	SM	EET CF
SM 2320B	Alkalinity	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-242903 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 1 of 6

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): | Corrected Temp (°C):

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:	PLSTNT	
Uncorrected Temp (°C):	-0.8	
Corrected Temp (°C):	-0.8	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

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Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 2 of 6
Cooler Custody Seals Present? No	☒ Yes	☐ No	*If yes:* Cooler custody seals intact? ☒ Yes ☐
Sample Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 7 | Correction Factor (°C): +0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.3 | Corrected Temp (°C): -0.3

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

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Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 3 of 6

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.7 | Corrected Temp (°C): -0.7

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

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Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 4 of 6

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.8 | Corrected Temp (°C): -0.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 5 of 6
Cooler Custody Seals Present? No	☒ Yes	☐ No	*If yes:* Cooler custody seals intact? ☒ Yes ☐ No
Sample Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.6 | Corrected Temp (°C): -0.6

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY Madison | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 10/21/22 | TIME 0935 | Received By: JJ

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 6 of 6

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 7 | Correction Factor (°C): +0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -1.1 | Corrected Temp (°C): -1.1

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone 319-277-2401 Fax 319-277-2425

Chain of Custody Record

Eurofins Des Moines SC
214

Client Information	Sampler: Ethan Schaefer	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 310-74996-16399-1
Client Contact: ~~Rosa Cruz~~ Meghan Blodgett	Phone: 414-897-4253	E-Mail: Sandra.Fredrick@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: SCS Engineers	PWSID:	Analysis Requested		Job #:
Address: ~~3450 Hickman Road Suite 2~~ 2830 Dairy Dr	Due Date Requested:			Preservation Codes: A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify); Other:
City: ~~Cary~~ Madison	TAT Requested (days):			
State, Zip: ~~IA, 50325~~ WI 53718	Compliance Project: Δ Yes Δ No			
Phone:	PO #: 25222070			
Email: ~~rosa2@scsengineers.com~~ mblodgett@scsengineers.com	WO #:			
Project Name: Alliant Lansing 25222070	Project #: 31011020			
Site:	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastefoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B Alkalinity Carb/Bicarb	6020A Total Metals (5)	6020A Dissolved Metals (2 3)	Total Number of containers	Special Instructions/Note
			Preservation Code				N	D	D		
MW-301	10/17/22	15:15	G	Water			X	X	X		
MW-302	10/19/22	12:50		Water			X	X	X		
MW-303	10/17/22	16:25		Water			X	X	X		
MW-304	10/17/22	11:40		Water			X	X	X		
MW-305	10/18/22	17:00		Water			X	X	X		
MW-306	10/19/22	9:55		Water			X	X	X		
MW-302A	10/17/22	13:45		Water			X	X	X		
MW-304A	10/17/22	12:30		Water			X	X	X		
MW-306A	10/19/22	11:00		Water			X	X	X		
MW-307	10/18/22	11:55		Wate			X	X	X		
MW-307A	10/18/22	11:00	↓	Water			X	X	X		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10/20/22 9:30	SCS		10/21/22 0935	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time:	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613
Phone. 319-277-2401 Fax 319-277-2425

eSubmitica Des Moines SC
214

Chain of Custody Record

Client Information	Sampler: Ethan Schaefer	Lab PM: Fredrick Sandie	Carrier Tracking No(s):	COC No: 310-74996-16399 2
Client Contact: ~~Rosa Cruz~~ Meghan Blodgett	Phone: 414-897-4253	E-Mail: Sandra.Fredrick@et eurofinsus com	State of Origin:	Page: Page 2 of 2
Company: SCS Engineers	PWSID:	Analysis Requested		Job #:
Address: ~~8450 Hickman Road Suite 2~~ 2830 Dairy Dr	Due Date Requested:			Preservation Codes: A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlo, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V - MCAA, W pH 4-5, Y Trizma, Z other (specify), Other:
City: ~~Cary~~ Madison	TAT Requested (days):			
State, Zip: ~~NC, 27513~~ WI 53718	Compliance Project: Δ Yes Δ No			
Phone:	PO #: 25222070			
Email: ~~lcruz@scsengineers.com~~ mblodgett@scsengineers.com	WO #:			
Project Name: Alliant Lansing 25222070	Project #: 31011020			
Site:	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wewater S=solid O=waste/oil, BT=Tissue A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B Alkalinity Carb/Bicarb	6020A Total Metals (5)	6020A Dissolved Metals (2-3)	Total Number of containers	Special Instructions/Note
			Preservation Code:				N	D	D		
MW-6	10/18/22	9:15	G	Water	Y	N	X	X	X		
Field Blank	10/19/22	10:30	G	Water	N	N	X	X	X		
				Water		N					

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: II III IV Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	10/20/22 9:30	SCS		10/21/22 0935	
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Table 2. Sampling Points and Parameters CCR Rule Sampling Program Lansing Generating Station / SCS Engineers Project #25221070.00

		Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-302A	MW-304A	MW-306A	MW-307	MW-307A	MW-308	MW-309	MW-6	Field Blank	TOTAL
COCs #1 (non-radium) & #2 (radium) - CCR Rule Parameters	Appendix III Parameters, Total (Unfiltered)	Boron	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Calcium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Chloride	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Fluoride	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		pH	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Sulfate	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		TDS	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Appendix IV Parameters, Total (Unfiltered)	Antimony	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Arsenic	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Barium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Beryllium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Cadmium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Chromium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Cobalt	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Fluoride	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Lead	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Lithium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Mercury	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Molybdenum	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Selenium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Thallium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Radium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Field Parameters	Groundwater Elevation	X	X	X	X	X	X	X	X	X	X	X	X	X	X		14
		pH (field)	X	X	X	X	X	X	X	X	X	X	X			X		12
		Specific Conductance	X	X	X	X	X	X	X	X	X	X	X			X		12
		Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X	X			X		12
		ORP	X	X	X	X	X	X	X	X	X	X	X			X		12
		Temperature	X	X	X	X	X	X	X	X	X	X	X			X		12
		Turbidity	X	X	X	X	X	X	X	X	X	X	X			X		12
		Color	X	X	X	X	X	X	X	X	X	X	X			X		12
		Odor	X	X	X	X	X	X	X	X	X	X	X			X		12
COC #3 - MNA Parameters	Total (Unfiltered)	Alkalinity - Carbonate	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Alkalinity - Bicarbonate	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Iron	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Magnesium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Manganese	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Potassium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Sodium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Dissolved (Filtered)	Arsenic		X				X										2
		Iron	X	X	X	X	X	X	X	X	X	X	X			X		12
		Manganese	X	X	X	X	X	X	X	X	X	X	X			X		12
		Molybdenum								X								1
	Field Parameters	Sulfide, Field	X	X	X	X	X	X	X	X	X	X	X			X		12
		Ferrous Iron, Field	X	X	X	X	X	X	X	X	X	X	X			X		12

Table 1, page 1 of 1

Table 2. Sampling Points and Parameters CCR Rule Sampling Program Lansing Generating Station / SCS Engineers Project #25221070.00

COCs #1 (non-radium) & #2 (radium) - CCR Rule Parameters

COC #3 - MNA Parameters

	Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-302A	MW-304A	MW-306A	MW-307	MW-307A	MW-308	MW-309	MW-6	Field Blank	TOTAL
Appendix III Parameters, Total (Unfiltered)	Boron	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Calcium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Chloride	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Fluoride	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	pH	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Sulfate	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	TDS	X	X	X	X	X	X	X	X	X	X	X			X	X	13
Appendix IV Parameters, Total (Unfiltered)	Antimony	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Arsenic	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Barium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Beryllium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Cadmium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Chromium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Cobalt	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Fluoride	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Lead	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Lithium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Mercury	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Molybdenum	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Selenium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Thallium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Radium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
Field Parameters	Groundwater Elevation	X	X	X	X	X	X	X	X	X	X	X	X	X	X		14
	pH (field)	X	X	X	X	X	X	X	X	X	X	X			X		12
	Specific Conductance	X	X	X	X	X	X	X	X	X	X	X			X		12
	Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X	X			X		12
	ORP	X	X	X	X	X	X	X	X	X	X	X			X		12
	Temperature	X	X	X	X	X	X	X	X	X	X	X			X		12
	Turbidity	X	X	X	X	X	X	X	X	X	X	X			X		12
	Color	X	X	X	X	X	X	X	X	X	X	X			X		12
	Odor	X	X	X	X	X	X	X	X	X	X	X			X		12
Total (Unfiltered)	Alkalinity - Carbonate	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Alkalinity - Bicarbonate	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Iron	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Magnesium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Manganese	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Potassium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
	Sodium	X	X	X	X	X	X	X	X	X	X	X			X	X	13
Dissolved (Filtered)	Arsenic		X				X										2
	Iron	X	X	X	X	X	X	X	X	X	X	X			X		12
	Manganese	X	X	X	X	X	X	X	X	X	X	X			X		12
	Molybdenum								X								1
Field Parameters	Sulfide, Field	X	X	X	X	X	X	X	X	X	X	X			X		12
	Ferrous Iron, Field	X	X	X	X	X	X	X	X	X	X	X			X		12

Table 1, page 1 of 1

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-242903-3

Login Number: 242903
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Generated 8/17/2023 11:03:17 AM Revision 2

JOB DESCRIPTION

Lansing Generating Station - 25223070

JOB NUMBER

310-253478-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization

Generated
8/17/2023 11:03:17 AM
Revision 2

Authorized for release by
Sandie Fredrick, Project Manager II
Sandra.Fredrick@et.eurofinsus.com
(920)261-1660

Table of Contents

Job ID: 310-253478-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative
310-253478-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 5/18/2023. The report (revision 2) is being revised due to: Revision needed to update QAQC for metals/removal of B flags.

Report revision history
Revision 1 - 6/1/2023 - Reason - Resuts updated by lab. Metals/Anions.

Receipt
The samples were received on 4/13/2023 9:15 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were -0.1º C, 0.8º C and 2.1º C.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

RAD
Methods 903.0, 9315: Radium-226 batch 608194
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
MW-301 (310-253478-1), MW-302 (310-253478-2), (LCS 160-608194/2-A), (LCSD 160-608194/3-A), (MB 160-608194/1-A), (480-207664-A-2-A), (480-207664-A-2-B MS) and (480-207664-A-2-C MSD)

Methods 903.0, 9315: Radium-226 batch 608368
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
MW-307 (310-253478-9), MW-6 (310-253478-11), FIELD BLANK (310-253478-12), (LCS 160-608368/2-A), (MB 160-608368/1-A), (310-253383-E-6-A), (310-253383-E-6-B MS) and (310-253383-E-6-C MSD)

Methods 904.0, 9320: Radium-228 batch 608196
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
MW-301 (310-253478-1), MW-302 (310-253478-2), (LCS 160-608196/2-A), (LCSD 160-608196/3-A), (MB 160-608196/1-A), (480-207664-A-2-D), (480-207664-A-2-E MS) and (480-207664-A-2-F MSD)

Methods 904.0, 9320: Radium-228 batch 608380
The LCS recovered at (128%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-608380/2-A)

Methods 904.0, 9320: Radium-228 batch 608380
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
MW-307 (310-253478-9), MW-6 (310-253478-11), FIELD BLANK (310-253478-12), (LCS 160-608380/2-A), (MB 160-608380/1-A), (310-253383-E-6-D), (310-253383-E-6-E MS) and (310-253383-E-6-F MSD)

Job ID: 310-253478-1 (Continued)

Laboratory: Eurofins Cedar Falls (Continued)

Method PrecSep_0:

Method PrecSep_0: Radium-228 Prep Batch 160-608196

Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-301 (310-253478-1) and MW-302 (310-253478-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep_0: Radium-228 Prep Batch 160-608196

The following sample was prepared at a reduced aliquot due to Matrix: MW-302 (310-253478-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-608194

The following sample was prepared at a reduced aliquot due to Matrix: MW-302 (310-253478-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21:

Method PrecSep-21: Radium-226 Prep Batch 160-608194

Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-301 (310-253478-1) and MW-302 (310-253478-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-253478-1	MW-301	Water	04/10/23 16:55	04/13/23 09:15
310-253478-2	MW-302	Water	04/11/23 10:50	04/13/23 09:15
310-253478-3	MW-302A	Water	04/11/23 10:10	04/13/23 09:15
310-253478-4	MW-304	Water	04/10/23 12:05	04/13/23 09:15
310-253478-5	MW-304A	Water	04/10/23 13:25	04/13/23 09:15
310-253478-6	MW-305	Water	04/11/23 12:05	04/13/23 09:15
310-253478-7	MW-306	Water	04/11/23 13:25	04/13/23 09:15
310-253478-8	MW-306A	Water	04/11/23 14:10	04/13/23 09:15
310-253478-9	MW-307	Water	04/10/23 15:10	04/13/23 09:15
310-253478-10	MW-307A	Water	04/10/23 15:55	04/13/23 09:15
310-253478-11	MW-6	Water	04/11/23 10:20	04/13/23 09:15
310-253478-12	FIELD BLANK	Water	04/11/23 14:15	04/13/23 09:15

Detection Summary

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-301 — Lab Sample ID: 310-253478-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	23		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	38		5.0	2.1	mg/L	5		9056A	Total/NA
Arsenic	3.7		2.0	0.53	ug/L	1		6020B	Total/NA
Barium	73		2.0	0.64	ug/L	1		6020B	Total/NA
Boron	440		100	76	ug/L	1		6020B	Total/NA
Calcium	48		0.50	0.19	mg/L	1		6020B	Total/NA
Iron	250		100	36	ug/L	1		6020B	Total/NA
Lithium	5.8	J	10	2.5	ug/L	1		6020B	Total/NA
Molybdenum	14		2.0	0.91	ug/L	1		6020B	Total/NA
Selenium	1.9	J	5.0	1.4	ug/L	1		6020B	Total/NA
Total Dissolved Solids	180		50	34	mg/L	1		SM 2540C	Total/NA
pH	8.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	623.40				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-149.6				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.19				mg/L	1		Field Sampling	Total/NA
pH, Field	8.05				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	352.2				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	10.3				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-302 — Lab Sample ID: 310-253478-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	15		5.0	2.3	mg/L	5		9056A	Total/NA
Fluoride	0.66	J	1.0	0.38	mg/L	5		9056A	Total/NA
Arsenic	42		2.0	0.53	ug/L	1		6020B	Total/NA
Barium	800		2.0	0.64	ug/L	1		6020B	Total/NA
Boron	480		100	76	ug/L	1		6020B	Total/NA
Calcium	130		0.50	0.19	mg/L	1		6020B	Total/NA
Cobalt	1.3		0.50	0.17	ug/L	1		6020B	Total/NA
Iron	47000		100	36	ug/L	1		6020B	Total/NA
Molybdenum	1.9	J	2.0	0.91	ug/L	1		6020B	Total/NA
Selenium	2.9	J	5.0	1.4	ug/L	1		6020B	Total/NA
Total Dissolved Solids	530		50	34	mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	628.61				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-181.4				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.29				mg/L	1		Field Sampling	Total/NA
pH, Field	7.19				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	871				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	6.9				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	4.54				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-302A — Lab Sample ID: 310-253478-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	37	J	100	36	ug/L	1		6020B	Total/NA
Ground Water Elevation	621.32				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	98.5				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	3.72				mg/L	1		Field Sampling	Total/NA
pH, Field	7.38				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	458.5				umhos/cm	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample ID: MW-302A (Continued) — Lab Sample ID: 310-253478-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Temperature, Field	11.2				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-304 — Lab Sample ID: 310-253478-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	50	J	100	36	ug/L	1		6020B	Total/NA
Molybdenum	2.5		2.0	0.91	ug/L	1		6020B	Total/NA
Ground Water Elevation	622.31				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	195.5				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	7.75				mg/L	1		Field Sampling	Total/NA
pH, Field	7.27				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	481.6				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	8.9				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-304A — Lab Sample ID: 310-253478-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.63	J	2.0	0.53	ug/L	1		6020B	Total/NA
Iron	390		100	36	ug/L	1		6020B	Total/NA
Molybdenum	150		2.0	0.91	ug/L	1		6020B	Total/NA
Ground Water Elevation	623.95				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	115.7				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.21				mg/L	1		Field Sampling	Total/NA
pH, Field	7.74				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	422.5				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	10.6				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	28.82				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-305 — Lab Sample ID: 310-253478-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.93	J	2.0	0.53	ug/L	1		6020B	Total/NA
Iron	3300		100	36	ug/L	1		6020B	Total/NA
Molybdenum	1.1	J	2.0	0.91	ug/L	1		6020B	Total/NA
Ground Water Elevation	624.54				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-92.1				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	3.18				mg/L	1		Field Sampling	Total/NA
pH, Field	7.44				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	396.9				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	6.2				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	1.71				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-306 — Lab Sample ID: 310-253478-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	7.0		2.0	0.53	ug/L	1		6020B	Total/NA
Iron	50000		100	36	ug/L	1		6020B	Total/NA
Ground Water Elevation	622.07				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-165.5				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.27				mg/L	1		Field Sampling	Total/NA
pH, Field	7.13				SU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-306 (Continued) — Lab Sample ID: 310-253478-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance, Field	1682				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	12.0				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	4.12				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-306A — Lab Sample ID: 310-253478-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	1400		100	36	ug/L	1		6020B	Total/NA
Ground Water Elevation	622.68				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-93.3				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.67				mg/L	1		Field Sampling	Total/NA
pH, Field	7.43				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	486.3				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	13.7				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.83				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-307 — Lab Sample ID: 310-253478-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	23		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	45		5.0	2.1	mg/L	5		9056A	Total/NA
Arsenic	2.5		2.0	0.53	ug/L	1		6020B	Total/NA
Barium	230		2.0	0.64	ug/L	1		6020B	Total/NA
Boron	1200		100	76	ug/L	1		6020B	Total/NA
Calcium	38		0.50	0.19	mg/L	1		6020B	Total/NA
Iron	68	J	100	36	ug/L	1		6020B	Total/NA
Lithium	11		10	2.5	ug/L	1		6020B	Total/NA
Molybdenum	7.8		2.0	0.91	ug/L	1		6020B	Total/NA
Total Dissolved Solids	160		50	34	mg/L	1		SM 2540C	Total/NA
pH	8.6	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	629.13				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-150.4				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.28				mg/L	1		Field Sampling	Total/NA
pH, Field	8.36				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	312.4				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	8.0				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-307A — Lab Sample ID: 310-253478-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.65	J	2.0	0.53	ug/L	1		6020B	Total/NA
Iron	36	J	100	36	ug/L	1		6020B	Total/NA
Molybdenum	7.6		2.0	0.91	ug/L	1		6020B	Total/NA
Ground Water Elevation	617.75				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-13.8				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.15				mg/L	1		Field Sampling	Total/NA
pH, Field	7.33				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	521.2				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	11.6				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-6 — Lab Sample ID: 310-253478-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.5		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	21		5.0	2.1	mg/L	5		9056A	Total/NA
Barium	49		2.0	0.64	ug/L	1		6020B	Total/NA
Calcium	79		0.50	0.19	mg/L	1		6020B	Total/NA
Total Dissolved Solids	350		50	34	mg/L	1		SM 2540C	Total/NA
pH	7.6	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	664.79				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	141.4				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	8.38				mg/L	1		Field Sampling	Total/NA
pH, Field	7.15				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	595.6				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	9.9				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.97				NTU	1		Field Sampling	Total/NA

Client Sample ID: FIELD BLANK — Lab Sample ID: 310-253478-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	4.8	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client: SCS Engineers
Project/Site: Lansing Generating Station - 25223070

Job ID: 310-253478-1

Client Sample ID: MW-301
Date Collected: 04/10/23 16:55
Date Received: 04/13/23 09:15

Lab Sample ID: 310-253478-1
Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**23**		5.0	2.3	mg/L			04/17/23 18:04	5
Fluoride	<0.38		1.0	0.38	mg/L			04/17/23 18:04	5
Sulfate	**38**		5.0	2.1	mg/L			04/17/23 18:04	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.0		2.0	1.0	ug/L		04/14/23 08:45	04/20/23 23:55	1
Arsenic	**3.7**		2.0	0.53	ug/L		04/14/23 08:45	04/20/23 23:55	1
Barium	**73**		2.0	0.64	ug/L		04/14/23 08:45	04/20/23 23:55	1
Beryllium	<0.33		1.0	0.33	ug/L		04/14/23 08:45	04/20/23 23:55	1
Boron	**440**		100	76	ug/L		04/14/23 08:45	04/20/23 23:55	1
Cadmium	<0.10		0.20	0.10	ug/L		04/14/23 08:45	04/20/23 23:55	1
Calcium	**48**		0.50	0.19	mg/L		04/14/23 08:45	04/20/23 23:55	1
Chromium	<1.1		5.0	1.1	ug/L		04/14/23 08:45	04/20/23 23:55	1
Cobalt	<0.17		0.50	0.17	ug/L		04/14/23 08:45	04/20/23 23:55	1
Iron	**250**		100	36	ug/L		04/14/23 08:45	04/20/23 23:55	1
Lead	<0.24		0.50	0.24	ug/L		04/14/23 08:45	04/20/23 23:55	1
Lithium	**5.8**	**J**	10	2.5	ug/L		04/14/23 08:45	04/20/23 23:55	1
Molybdenum	**14**		2.0	0.91	ug/L		04/14/23 08:45	04/20/23 23:55	1
Selenium	**1.9**	**J**	5.0	1.4	ug/L		04/14/23 08:45	04/20/23 23:55	1
Thallium	<0.26		1.0	0.26	ug/L		04/14/23 08:45	05/31/23 17:00	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.14		0.20	0.14	ug/L		04/26/23 13:19	04/27/23 13:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**180**		50	34	mg/L			04/14/23 14:16	1
pH (SM 4500 H+ B)	**8.2**	**HF**	0.1	0.1	SU			04/13/23 12:06	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.0430	U	0.176	0.176	1.00	0.334	pCi/L	04/20/23 10:20	05/12/23 19:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*90.9*		*30 - 110*	*04/20/23 10:20*	*05/12/23 19:42*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.478	U	0.400	0.402	1.00	0.629	pCi/L	04/20/23 11:09	05/12/23 11:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*90.9*		*30 - 110*	*04/20/23 11:09*	*05/12/23 11:56*	*1*
Y Carrier	*83.0*		*30 - 110*	*04/20/23 11:09*	*05/12/23 11:56*	*1*

Client Sample Results

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-301
Lab Sample ID: 310-253478-1
Date Collected: 04/10/23 16:55
Matrix: Water
Date Received: 04/13/23 09:15

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.521	U	0.437	0.439	5.00	0.629	pCi/L		05/15/23 14:10	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	623.40				ft			04/10/23 16:55	1
Oxidation Reduction Potential	-149.6				millivolts			04/10/23 16:55	1
Oxygen, Dissolved, Client Supplied	0.19				mg/L			04/10/23 16:55	1
pH, Field	8.05				SU			04/10/23 16:55	1
Specific Conductance, Field	352.2				umhos/cm			04/10/23 16:55	1
Temperature, Field	10.3				Degrees C			04/10/23 16:55	1
Turbidity, Field	0.00				NTU			04/10/23 16:55	1

Client: SCS Engineers
Project/Site: Lansing Generating Station - 25223070

Job ID: 310-253478-1

Client Sample ID: MW-302
Date Collected: 04/11/23 10:50
Date Received: 04/13/23 09:15

Lab Sample ID: 310-253478-2
Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**15**		5.0	2.3	mg/L			04/17/23 18:20	5
Fluoride	**0.66**	**J**	1.0	0.38	mg/L			04/17/23 18:20	5
Sulfate	<2.1		5.0	2.1	mg/L			04/17/23 18:20	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.0		2.0	1.0	ug/L		04/14/23 08:45	04/21/23 00:23	1
Arsenic	**42**		2.0	0.53	ug/L		04/14/23 08:45	04/21/23 00:23	1
Barium	**800**		2.0	0.64	ug/L		04/14/23 08:45	04/21/23 00:23	1
Beryllium	<0.33		1.0	0.33	ug/L		04/14/23 08:45	04/21/23 00:23	1
Boron	**480**		100	76	ug/L		04/14/23 08:45	04/21/23 00:23	1
Cadmium	<0.10		0.20	0.10	ug/L		04/14/23 08:45	04/21/23 00:23	1
Calcium	**130**		0.50	0.19	mg/L		04/14/23 08:45	04/21/23 00:23	1
Chromium	<1.1		5.0	1.1	ug/L		04/14/23 08:45	04/21/23 00:23	1
Cobalt	**1.3**		0.50	0.17	ug/L		04/14/23 08:45	04/21/23 00:23	1
Iron	**47000**		100	36	ug/L		04/14/23 08:45	04/21/23 00:23	1
Lead	<0.24		0.50	0.24	ug/L		04/14/23 08:45	04/21/23 00:23	1
Lithium	<2.5		10	2.5	ug/L		04/14/23 08:45	04/21/23 00:23	1
Molybdenum	**1.9**	**J**	2.0	0.91	ug/L		04/14/23 08:45	04/21/23 00:23	1
Selenium	**2.9**	**J**	5.0	1.4	ug/L		04/14/23 08:45	04/21/23 00:23	1
Thallium	<0.26		1.0	0.26	ug/L		04/14/23 08:45	05/31/23 17:03	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.14		0.20	0.14	ug/L		04/26/23 13:19	04/27/23 13:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**530**		50	34	mg/L			04/14/23 14:16	1
pH (SM 4500 H+ B)	**7.0**	**HF**	0.1	0.1	SU			04/13/23 12:07	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	**0.964**		0.391	0.401	1.00	0.453	pCi/L	04/20/23 10:20	05/12/23 19:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*95.1*		*30 - 110*	*04/20/23 10:20*	*05/12/23 19:42*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.110	U	0.301	0.302	1.00	0.543	pCi/L	04/20/23 11:09	05/12/23 11:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*95.1*		*30 - 110*	*04/20/23 11:09*	*05/12/23 11:56*	*1*
Y Carrier	*90.5*		*30 - 110*	*04/20/23 11:09*	*05/12/23 11:56*	*1*

Client Sample Results

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-302
Lab Sample ID: 310-253478-2
Date Collected: 04/11/23 10:50
Matrix: Water
Date Received: 04/13/23 09:15

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	1.07		0.493	0.502	5.00	0.543	pCi/L		05/15/23 14:10	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	628.61				ft			04/11/23 10:50	1
Oxidation Reduction Potential	-181.4				millivolts			04/11/23 10:50	1
Oxygen, Dissolved, Client Supplied	0.29				mg/L			04/11/23 10:50	1
pH, Field	7.19				SU			04/11/23 10:50	1
Specific Conductance, Field	871				umhos/cm			04/11/23 10:50	1
Temperature, Field	6.9				Degrees C			04/11/23 10:50	1
Turbidity, Field	4.54				NTU			04/11/23 10:50	1

Client Sample Results

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-302A
Lab Sample ID: 310-253478-3
Date Collected: 04/11/23 10:10
Matrix: Water
Date Received: 04/13/23 09:15

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.53		2.0	0.53	ug/L		04/14/23 08:45	04/21/23 00:26	1
Iron	**37**	**J**	100	36	ug/L		04/14/23 08:45	04/21/23 00:26	1
Molybdenum	<0.91		2.0	0.91	ug/L		04/14/23 08:45	04/21/23 00:26	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**621.32**				ft			04/11/23 10:10	1
Oxidation Reduction Potential	**98.5**				millivolts			04/11/23 10:10	1
Oxygen, Dissolved, Client Supplied	**3.72**				mg/L			04/11/23 10:10	1
pH, Field	**7.38**				SU			04/11/23 10:10	1
Specific Conductance, Field	**458.5**				umhos/cm			04/11/23 10:10	1
Temperature, Field	**11.2**				Degrees C			04/11/23 10:10	1
Turbidity, Field	**0.00**				NTU			04/11/23 10:10	1

Client Sample Results

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-304
Lab Sample ID: 310-253478-4
Date Collected: 04/10/23 12:05
Matrix: Water
Date Received: 04/13/23 09:15

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.53		2.0	0.53	ug/L		04/14/23 08:45	04/21/23 00:29	1
Iron	**50**	**J**	100	36	ug/L		04/14/23 08:45	04/21/23 00:29	1
Molybdenum	**2.5**		2.0	0.91	ug/L		04/14/23 08:45	04/21/23 00:29	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**622.31**				ft			04/10/23 12:05	1
Oxidation Reduction Potential	**195.5**				millivolts			04/10/23 12:05	1
Oxygen, Dissolved, Client Supplied	**7.75**				mg/L			04/10/23 12:05	1
pH, Field	**7.27**				SU			04/10/23 12:05	1
Specific Conductance, Field	**481.6**				umhos/cm			04/10/23 12:05	1
Temperature, Field	**8.9**				Degrees C			04/10/23 12:05	1
Turbidity, Field	**0.00**				NTU			04/10/23 12:05	1

Client Sample Results

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-304A
Lab Sample ID: 310-253478-5
Date Collected: 04/10/23 13:25
Matrix: Water
Date Received: 04/13/23 09:15

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.63	J	2.0	0.53	ug/L		04/14/23 08:45	04/21/23 00:31	1
Iron	390		100	36	ug/L		04/14/23 08:45	04/21/23 00:31	1
Molybdenum	150		2.0	0.91	ug/L		04/14/23 08:45	04/21/23 00:31	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	623.95				ft			04/10/23 13:25	1
Oxidation Reduction Potential	115.7				millivolts			04/10/23 13:25	1
Oxygen, Dissolved, Client Supplied	0.21				mg/L			04/10/23 13:25	1
pH, Field	7.74				SU			04/10/23 13:25	1
Specific Conductance, Field	422.5				umhos/cm			04/10/23 13:25	1
Temperature, Field	10.6				Degrees C			04/10/23 13:25	1
Turbidity, Field	28.82				NTU			04/10/23 13:25	1

Client Sample Results

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-305
Lab Sample ID: 310-253478-6
Date Collected: 04/11/23 12:05
Matrix: Water
Date Received: 04/13/23 09:15

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.93	J	2.0	0.53	ug/L		04/14/23 08:45	04/21/23 00:34	1
Iron	3300		100	36	ug/L		04/14/23 08:45	04/21/23 00:34	1
Molybdenum	1.1	J	2.0	0.91	ug/L		04/14/23 08:45	04/21/23 00:34	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	624.54				ft			04/11/23 12:05	1
Oxidation Reduction Potential	-92.1				millivolts			04/11/23 12:05	1
Oxygen, Dissolved, Client Supplied	3.18				mg/L			04/11/23 12:05	1
pH, Field	7.44				SU			04/11/23 12:05	1
Specific Conductance, Field	396.9				umhos/cm			04/11/23 12:05	1
Temperature, Field	6.2				Degrees C			04/11/23 12:05	1
Turbidity, Field	1.71				NTU			04/11/23 12:05	1

Client Sample Results

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-306
Lab Sample ID: 310-253478-7
Date Collected: 04/11/23 13:25
Matrix: Water
Date Received: 04/13/23 09:15

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**7.0**		2.0	0.53	ug/L		04/14/23 08:45	04/21/23 00:37	1
Iron	**50000**		100	36	ug/L		04/14/23 08:45	04/21/23 00:37	1
Molybdenum	<0.91		2.0	0.91	ug/L		04/14/23 08:45	04/21/23 00:37	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**622.07**				ft			04/11/23 13:25	1
Oxidation Reduction Potential	**-165.5**				millivolts			04/11/23 13:25	1
Oxygen, Dissolved, Client Supplied	**0.27**				mg/L			04/11/23 13:25	1
pH, Field	**7.13**				SU			04/11/23 13:25	1
Specific Conductance, Field	**1682**				umhos/cm			04/11/23 13:25	1
Temperature, Field	**12.0**				Degrees C			04/11/23 13:25	1
Turbidity, Field	**4.12**				NTU			04/11/23 13:25	1

Client Sample Results

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-306A
Lab Sample ID: 310-253478-8
Date Collected: 04/11/23 14:10
Matrix: Water
Date Received: 04/13/23 09:15

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.53		2.0	0.53	ug/L		04/14/23 08:45	04/21/23 00:55	1
Iron	**1400**		100	36	ug/L		04/14/23 08:45	04/21/23 00:55	1
Molybdenum	<0.91		2.0	0.91	ug/L		04/14/23 08:45	04/21/23 00:55	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**622.68**				ft			04/11/23 14:10	1
Oxidation Reduction Potential	**-93.3**				millivolts			04/11/23 14:10	1
Oxygen, Dissolved, Client Supplied	**0.67**				mg/L			04/11/23 14:10	1
pH, Field	**7.43**				SU			04/11/23 14:10	1
Specific Conductance, Field	**486.3**				umhos/cm			04/11/23 14:10	1
Temperature, Field	**13.7**				Degrees C			04/11/23 14:10	1
Turbidity, Field	**0.83**				NTU			04/11/23 14:10	1

Client: SCS Engineers
Project/Site: Lansing Generating Station - 25223070

Job ID: 310-253478-1

Client Sample ID: MW-307
Date Collected: 04/10/23 15:10
Date Received: 04/13/23 09:15

Lab Sample ID: 310-253478-9
Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**23**		5.0	2.3	mg/L			04/17/23 18:35	5
Fluoride	<0.38		1.0	0.38	mg/L			04/17/23 18:35	5
Sulfate	**45**		5.0	2.1	mg/L			04/17/23 18:35	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.0		2.0	1.0	ug/L		04/14/23 08:45	04/21/23 00:58	1
Arsenic	**2.5**		2.0	0.53	ug/L		04/14/23 08:45	04/21/23 00:58	1
Barium	**230**		2.0	0.64	ug/L		04/14/23 08:45	04/21/23 00:58	1
Beryllium	<0.33		1.0	0.33	ug/L		04/14/23 08:45	04/21/23 00:58	1
Boron	**1200**		100	76	ug/L		04/14/23 08:45	04/21/23 00:58	1
Cadmium	<0.10		0.20	0.10	ug/L		04/14/23 08:45	04/21/23 00:58	1
Calcium	**38**		0.50	0.19	mg/L		04/14/23 08:45	04/21/23 00:58	1
Chromium	<1.1		5.0	1.1	ug/L		04/14/23 08:45	04/21/23 00:58	1
Cobalt	<0.17		0.50	0.17	ug/L		04/14/23 08:45	04/21/23 00:58	1
Iron	**68**	**J**	100	36	ug/L		04/14/23 08:45	04/21/23 00:58	1
Lead	<0.24		0.50	0.24	ug/L		04/14/23 08:45	04/21/23 00:58	1
Lithium	**11**		10	2.5	ug/L		04/14/23 08:45	04/21/23 00:58	1
Molybdenum	**7.8**		2.0	0.91	ug/L		04/14/23 08:45	04/21/23 00:58	1
Selenium	<1.4		5.0	1.4	ug/L		04/14/23 08:45	04/21/23 00:58	1
Thallium	<0.26		1.0	0.26	ug/L		04/14/23 08:45	04/21/23 00:58	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.14		0.20	0.14	ug/L		04/25/23 12:22	04/26/23 11:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**160**		50	34	mg/L			04/14/23 14:16	1
pH (SM 4500 H+ B)	**8.6**	**HF**	0.1	0.1	SU			04/13/23 12:08	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.165	U	0.129	0.130	1.00	0.187	pCi/L	04/21/23 12:23	05/15/23 18:35	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*82.8*		*30 - 110*	*04/21/23 12:23*	*05/15/23 18:35*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	-0.128	U	0.347	0.347	1.00	0.676	pCi/L	04/21/23 13:16	05/13/23 10:34	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*82.8*		*30 - 110*	*04/21/23 13:16*	*05/13/23 10:34*	*1*
Y Carrier	*80.4*		*30 - 110*	*04/21/23 13:16*	*05/13/23 10:34*	*1*

Client Sample ID: MW-307
Lab Sample ID: 310-253478-9

Date Collected: 04/10/23 15:10
Matrix: Water

Date Received: 04/13/23 09:15

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.165	U	0.370	0.371	5.00	0.676	pCi/L		05/16/23 11:21	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	629.13				ft			04/10/23 15:10	1
Oxidation Reduction Potential	-150.4				millivolts			04/10/23 15:10	1
Oxygen, Dissolved, Client Supplied	0.28				mg/L			04/10/23 15:10	1
pH, Field	8.36				SU			04/10/23 15:10	1
Specific Conductance, Field	312.4				umhos/cm			04/10/23 15:10	1
Temperature, Field	8.0				Degrees C			04/10/23 15:10	1
Turbidity, Field	0.00				NTU			04/10/23 15:10	1

Client Sample Results

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-307A
Lab Sample ID: 310-253478-10
Date Collected: 04/10/23 15:55
Matrix: Water
Date Received: 04/13/23 09:15

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.65	J	2.0	0.53	ug/L		04/14/23 08:45	04/21/23 01:00	1
Iron	36	J	100	36	ug/L		04/14/23 08:45	04/21/23 01:00	1
Molybdenum	7.6		2.0	0.91	ug/L		04/14/23 08:45	04/21/23 01:00	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	617.75				ft			04/10/23 15:55	1
Oxidation Reduction Potential	-13.8				millivolts			04/10/23 15:55	1
Oxygen, Dissolved, Client Supplied	0.15				mg/L			04/10/23 15:55	1
pH, Field	7.33				SU			04/10/23 15:55	1
Specific Conductance, Field	521.2				umhos/cm			04/10/23 15:55	1
Temperature, Field	11.6				Degrees C			04/10/23 15:55	1
Turbidity, Field	0.00				NTU			04/10/23 15:55	1

Client: SCS Engineers
Project/Site: Lansing Generating Station - 25223070

Job ID: 310-253478-1

Client Sample ID: MW-6
Date Collected: 04/11/23 10:20
Date Received: 04/13/23 09:15

Lab Sample ID: 310-253478-11
Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.5**		5.0	2.3	mg/L			04/17/23 18:51	5
Fluoride	<0.38		1.0	0.38	mg/L			04/17/23 18:51	5
Sulfate	**21**		5.0	2.1	mg/L			04/17/23 18:51	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.0		2.0	1.0	ug/L		04/14/23 08:45	04/21/23 01:03	1
Arsenic	<0.53		2.0	0.53	ug/L		04/14/23 08:45	04/21/23 01:03	1
Barium	**49**		2.0	0.64	ug/L		04/14/23 08:45	04/21/23 01:03	1
Beryllium	<0.33		1.0	0.33	ug/L		04/14/23 08:45	04/21/23 01:03	1
Boron	<76		100	76	ug/L		04/14/23 08:45	04/21/23 01:03	1
Cadmium	<0.10		0.20	0.10	ug/L		04/14/23 08:45	04/21/23 01:03	1
Calcium	**79**		0.50	0.19	mg/L		04/14/23 08:45	04/21/23 01:03	1
Chromium	<1.1		5.0	1.1	ug/L		04/14/23 08:45	04/21/23 01:03	1
Cobalt	<0.17		0.50	0.17	ug/L		04/14/23 08:45	04/21/23 01:03	1
Iron	<36		100	36	ug/L		04/14/23 08:45	04/21/23 01:03	1
Lead	<0.24		0.50	0.24	ug/L		04/14/23 08:45	04/21/23 01:03	1
Lithium	<2.5		10	2.5	ug/L		04/14/23 08:45	04/21/23 01:03	1
Molybdenum	<0.91		2.0	0.91	ug/L		04/14/23 08:45	04/21/23 01:03	1
Selenium	<1.4		5.0	1.4	ug/L		04/14/23 08:45	04/21/23 01:03	1
Thallium	<0.26		1.0	0.26	ug/L		04/14/23 08:45	04/21/23 01:03	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.14		0.20	0.14	ug/L		04/26/23 13:19	04/27/23 13:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**350**		50	34	mg/L			04/17/23 15:04	1
pH (SM 4500 H+ B)	**7.6**	**HF**	0.1	0.1	SU			04/13/23 12:09	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.0554	U	0.116	0.116	1.00	0.211	pCi/L	04/21/23 12:23	05/15/23 18:35	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*73.5*		*30 - 110*	*04/21/23 12:23*	*05/15/23 18:35*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	-0.0629	U	0.355	0.355	1.00	0.681	pCi/L	04/21/23 13:16	05/13/23 10:34	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*73.5*		*30 - 110*	*04/21/23 13:16*	*05/13/23 10:34*	*1*
Y Carrier	*83.0*		*30 - 110*	*04/21/23 13:16*	*05/13/23 10:34*	*1*

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-6
Lab Sample ID: 310-253478-11
Date Collected: 04/11/23 10:20
Matrix: Water
Date Received: 04/13/23 09:15

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.0554	U	0.373	0.373	5.00	0.681	pCi/L		05/16/23 11:21	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	664.79				ft			04/11/23 10:20	1
Oxidation Reduction Potential	141.4				millivolts			04/11/23 10:20	1
Oxygen, Dissolved, Client Supplied	8.38				mg/L			04/11/23 10:20	1
pH, Field	7.15				SU			04/11/23 10:20	1
Specific Conductance, Field	595.6				umhos/cm			04/11/23 10:20	1
Temperature, Field	9.9				Degrees C			04/11/23 10:20	1
Turbidity, Field	0.97				NTU			04/11/23 10:20	1

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: FIELD BLANK
Lab Sample ID: 310-253478-12
Date Collected: 04/11/23 14:15
Matrix: Water
Date Received: 04/13/23 09:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.45		1.0	0.45	mg/L			04/17/23 19:06	1
Fluoride	<0.075		0.20	0.075	mg/L			04/17/23 19:06	1
Sulfate	<0.42		1.0	0.42	mg/L			04/17/23 19:06	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.0		2.0	1.0	ug/L		04/14/23 08:45	04/21/23 01:09	1
Arsenic	<0.53		2.0	0.53	ug/L		04/14/23 08:45	04/21/23 01:09	1
Barium	<0.64		2.0	0.64	ug/L		04/14/23 08:45	04/21/23 01:09	1
Beryllium	<0.33		1.0	0.33	ug/L		04/14/23 08:45	04/21/23 01:09	1
Boron	<76		100	76	ug/L		04/14/23 08:45	04/21/23 01:09	1
Cadmium	<0.10		0.20	0.10	ug/L		04/14/23 08:45	04/21/23 01:09	1
Calcium	<0.19		0.50	0.19	mg/L		04/14/23 08:45	04/21/23 01:09	1
Chromium	<1.1		5.0	1.1	ug/L		04/14/23 08:45	04/21/23 01:09	1
Cobalt	<0.17		0.50	0.17	ug/L		04/14/23 08:45	04/21/23 01:09	1
Iron	<36		100	36	ug/L		04/14/23 08:45	04/21/23 01:09	1
Lead	<0.24		0.50	0.24	ug/L		04/14/23 08:45	04/21/23 01:09	1
Lithium	<2.5		10	2.5	ug/L		04/14/23 08:45	04/21/23 01:09	1
Molybdenum	<0.91		2.0	0.91	ug/L		04/14/23 08:45	04/21/23 01:09	1
Selenium	<1.4		5.0	1.4	ug/L		04/14/23 08:45	04/21/23 01:09	1
Thallium	<0.26		1.0	0.26	ug/L		04/14/23 08:45	04/21/23 01:09	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.14		0.20	0.14	ug/L		04/26/23 13:19	04/27/23 13:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	<34		50	34	mg/L			04/17/23 15:04	1
pH (SM 4500 H+ B)	**4.8**	**HF**	0.1	0.1	SU			04/13/23 12:10	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	-0.0175	U	0.0914	0.0914	1.00	0.196	pCi/L	04/21/23 12:23	05/15/23 18:35	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*92.1*		*30 - 110*	*04/21/23 12:23*	*05/15/23 18:35*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.0550	U	0.272	0.272	1.00	0.499	pCi/L	04/21/23 13:16	05/13/23 10:34	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*92.1*		*30 - 110*	*04/21/23 13:16*	*05/13/23 10:34*	*1*
Y Carrier	*85.2*		*30 - 110*	*04/21/23 13:16*	*05/13/23 10:34*	*1*

Client Sample Results

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: FIELD BLANK
Lab Sample ID: 310-253478-12
Date Collected: 04/11/23 14:15
Matrix: Water
Date Received: 04/13/23 09:15

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.0550	U	0.287	0.287	5.00	0.499	pCi/L		05/16/23 11:21	1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-384648/3
Matrix: Water
Analysis Batch: 384648

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.45		1.0	0.45	mg/L			04/17/23 15:59	1
Fluoride	<0.075		0.20	0.075	mg/L			04/17/23 15:59	1
Sulfate	<0.42		1.0	0.42	mg/L			04/17/23 15:59	1

Lab Sample ID: LCS 310-384648/4
Matrix: Water
Analysis Batch: 384648

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.86		mg/L		99	90 - 110
Fluoride	2.00	2.08		mg/L		104	90 - 110
Sulfate	10.0	10.0		mg/L		100	90 - 110

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-384269/1-A
Matrix: Water
Analysis Batch: 385079

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 384269

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.0		2.0	1.0	ug/L		04/14/23 08:45	04/20/23 23:49	1
Arsenic	<0.53		2.0	0.53	ug/L		04/14/23 08:45	04/20/23 23:49	1
Barium	<0.64		2.0	0.64	ug/L		04/14/23 08:45	04/20/23 23:49	1
Beryllium	<0.33		1.0	0.33	ug/L		04/14/23 08:45	04/20/23 23:49	1
Boron	<76		100	76	ug/L		04/14/23 08:45	04/20/23 23:49	1
Cadmium	<0.10		0.20	0.10	ug/L		04/14/23 08:45	04/20/23 23:49	1
Chromium	<1.1		5.0	1.1	ug/L		04/14/23 08:45	04/20/23 23:49	1
Cobalt	<0.17		0.50	0.17	ug/L		04/14/23 08:45	04/20/23 23:49	1
Iron	<36		100	36	ug/L		04/14/23 08:45	04/20/23 23:49	1
Lead	<0.24		0.50	0.24	ug/L		04/14/23 08:45	04/20/23 23:49	1
Lithium	<2.5		10	2.5	ug/L		04/14/23 08:45	04/20/23 23:49	1
Molybdenum	<0.91		2.0	0.91	ug/L		04/14/23 08:45	04/20/23 23:49	1
Selenium	<1.4		5.0	1.4	ug/L		04/14/23 08:45	04/20/23 23:49	1
Thallium	<0.26		1.0	0.26	ug/L		04/14/23 08:45	04/20/23 23:49	1

Lab Sample ID: MB 310-384269/1-A
Matrix: Water
Analysis Batch: 385266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 384269

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	<0.19		0.50	0.19	mg/L		04/14/23 08:45	04/23/23 15:47	1

Lab Sample ID: LCS 310-384269/2-A
Matrix: Water
Analysis Batch: 385079

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 384269

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	236		ug/L		118	80 - 120
Arsenic	200	205		ug/L		102	80 - 120
Barium	100	106		ug/L		106	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-384269/2-A
Matrix: Water
Analysis Batch: 385079

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 384269

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	100	107		ug/L		107	80 - 120
Boron	200	194		ug/L		97	80 - 120
Cadmium	100	99.4		ug/L		99	80 - 120
Chromium	100	93.8		ug/L		94	80 - 120
Cobalt	100	106		ug/L		106	80 - 120
Iron	200	216		ug/L		108	80 - 120
Lead	200	212		ug/L		106	80 - 120
Lithium	200	226		ug/L		113	80 - 120
Molybdenum	200	201		ug/L		100	80 - 120
Selenium	400	385		ug/L		96	80 - 120
Thallium	200	167		ug/L		84	80 - 120

Lab Sample ID: LCS 310-384269/2-A
Matrix: Water
Analysis Batch: 385266

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 384269

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	2.00	2.35		mg/L		117	80 - 120

Lab Sample ID: 310-253478-1 MS
Matrix: Water
Analysis Batch: 385079

Client Sample ID: MW-301
Prep Type: Total/NA
Prep Batch: 384269

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<1.0		200	244		ug/L		122	75 - 125
Arsenic	3.7		200	216		ug/L		106	75 - 125
Barium	73		100	185		ug/L		113	75 - 125
Beryllium	<0.33		100	110		ug/L		110	75 - 125
Boron	440		200	658		ug/L		109	75 - 125
Cadmium	<0.10		100	102		ug/L		102	75 - 125
Calcium	48		2.00	52.9	4	mg/L		223	75 - 125
Chromium	<1.1		100	95.5		ug/L		95	75 - 125
Cobalt	<0.17		100	104		ug/L		104	75 - 125
Iron	250		200	475		ug/L		115	75 - 125
Lead	<0.24		200	214		ug/L		107	75 - 125
Lithium	5.8	J	200	229		ug/L		112	75 - 125
Molybdenum	14		200	228		ug/L		107	75 - 125
Selenium	1.9	J	400	406		ug/L		101	75 - 125
Thallium	2.5		200	162		ug/L		80	75 - 125

Lab Sample ID: 310-253478-1 MSD
Matrix: Water
Analysis Batch: 385079

Client Sample ID: MW-301
Prep Type: Total/NA
Prep Batch: 384269

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<1.0		200	250		ug/L		125	75 - 125	2	20
Arsenic	3.7		200	218		ug/L		107	75 - 125	1	20
Barium	73		100	185		ug/L		112	75 - 125	0	20
Beryllium	<0.33		100	109		ug/L		109	75 - 125	1	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-253478-1 MSD
Matrix: Water
Analysis Batch: 385079

Client Sample ID: MW-301
Prep Type: Total/NA
Prep Batch: 384269

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	440		200	666		ug/L		113	75 - 125	1	20
Cadmium	<0.10		100	102		ug/L		102	75 - 125	0	20
Calcium	48		2.00	53.5	4	mg/L		254	75 - 125	1	20
Chromium	<1.1		100	94.7		ug/L		95	75 - 125	1	20
Cobalt	<0.17		100	106		ug/L		106	75 - 125	2	20
Iron	250		200	460		ug/L		107	75 - 125	3	20
Lead	<0.24		200	216		ug/L		108	75 - 125	1	20
Lithium	5.8	J	200	227		ug/L		111	75 - 125	1	20
Molybdenum	14		200	226		ug/L		106	75 - 125	1	20
Selenium	1.9	J	400	414		ug/L		103	75 - 125	2	20
Thallium	2.5		200	168		ug/L		83	75 - 125	4	20

Lab Sample ID: 310-253478-11 DU
Matrix: Water
Analysis Batch: 385079

Client Sample ID: MW-6
Prep Type: Total/NA
Prep Batch: 384269

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<1.0		<1.0		ug/L		NC	20
Arsenic	<0.53		<0.53		ug/L		NC	20
Barium	49		50.1		ug/L		2	20
Beryllium	<0.33		<0.33		ug/L		NC	20
Boron	<76		<76		ug/L		NC	20
Cadmium	<0.10		<0.10		ug/L		NC	20
Calcium	79		81.1		mg/L		3	20
Chromium	<1.1		<1.1		ug/L		NC	20
Cobalt	<0.17		<0.17		ug/L		NC	20
Iron	<36		<36		ug/L		NC	20
Lead	<0.24		<0.24		ug/L		NC	20
Lithium	<2.5		<2.5		ug/L		NC	20
Molybdenum	<0.91		<0.91		ug/L		NC	20
Selenium	<1.4		<1.4		ug/L		NC	20
Thallium	<0.26		<0.26		ug/L		NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-385417/1-A
Matrix: Water
Analysis Batch: 385618

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 385417

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.14		0.20	0.14	ug/L		04/25/23 12:22	04/26/23 11:23	1

Lab Sample ID: LCS 310-385417/2-A
Matrix: Water
Analysis Batch: 385618

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 385417

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.67	1.85		ug/L		111	80 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: MB 310-385587/1-A
Matrix: Water
Analysis Batch: 385740

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 385587

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.14		0.20	0.14	ug/L		04/26/23 13:19	04/27/23 13:21	1

Lab Sample ID: LCS 310-385587/2-A
Matrix: Water
Analysis Batch: 385740

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 385587

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.67	1.63		ug/L		98	80 - 120

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-384370/1
Matrix: Water
Analysis Batch: 384370

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<34		50	34	mg/L			04/14/23 14:16	1

Lab Sample ID: LCS 310-384370/2
Matrix: Water
Analysis Batch: 384370

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	976		mg/L		98	90 - 110

Lab Sample ID: MB 310-384551/1
Matrix: Water
Analysis Batch: 384551

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<34		50	34	mg/L			04/17/23 15:04	1

Lab Sample ID: LCS 310-384551/2
Matrix: Water
Analysis Batch: 384551

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	974		mg/L		97	90 - 110

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-384227/1
Matrix: Water
Analysis Batch: 384227

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.1		SU		101	98 - 102

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-608194/1-A
Matrix: Water
Analysis Batch: 611284

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 608194

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.1948	U	0.179	0.179	1.00	0.268	pCi/L	04/20/23 10:20	05/12/23 19:35	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*90.9*		*30 - 110*	*04/20/23 10:20*	*05/12/23 19:35*	*1*

Lab Sample ID: LCS 160-608194/2-A
Matrix: Water
Analysis Batch: 611284

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608194

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium 226			11.3	10.55		1.35	1.00	0.291	pCi/L	93	75 - 113		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Barium	*88.9*		*30 - 110*

Lab Sample ID: LCSD 160-608194/3-A
Matrix: Water
Analysis Batch: 611284

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 608194

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium 226			11.3	11.21		1.44	1.00	0.426	pCi/L	99	75 - 113	0.24	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Barium	*84.0*		*30 - 110*

Lab Sample ID: MB 160-608368/1-A
Matrix: Water
Analysis Batch: 611628

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 608368

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.07383	U	0.115	0.115	1.00	0.198	pCi/L	04/21/23 12:23	05/15/23 15:35	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*92.1*		*30 - 110*	*04/21/23 12:23*	*05/15/23 15:35*	*1*

Lab Sample ID: LCS 160-608368/2-A
Matrix: Water
Analysis Batch: 611628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608368

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium 226			11.3	10.35		1.19	1.00	0.223	pCi/L	91	75 - 113		

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-608368/2-A
Matrix: Water
Analysis Batch: 611628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608368

Carrier	LCS %Yield	LCS Qualifier	Limits
Barium	86.0		30 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-608196/1-A
Matrix: Water
Analysis Batch: 611287

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 608196

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.2718	U	0.317	0.318	1.00	0.521	pCi/L	04/20/23 11:09	05/12/23 11:37	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Barium	90.9		30 - 110	04/20/23 11:09	05/12/23 11:37	1
Y Carrier	85.2		30 - 110	04/20/23 11:09	05/12/23 11:37	1

Lab Sample ID: LCS 160-608196/2-A
Matrix: Water
Analysis Batch: 611287

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608196

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium 228			7.96	9.100		1.27	1.00	0.497	pCi/L	114	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Barium	88.9		30 - 110
Y Carrier	81.9		30 - 110

Lab Sample ID: LCSD 160-608196/3-A
Matrix: Water
Analysis Batch: 611287

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 608196

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium 228			7.96	9.069		1.28	1.00	0.580	pCi/L	114	75 - 125	0.01	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Barium	84.0		30 - 110
Y Carrier	86.4		30 - 110

Lab Sample ID: MB 160-608380/1-A
Matrix: Water
Analysis Batch: 611455

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 608380

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.1364	U	0.309	0.309	1.00	0.542	pCi/L	04/21/23 13:16	05/13/23 10:39	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-608380/1-A
Matrix: Water
Analysis Batch: 611455

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 608380

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Barium	92.1		30 - 110	04/21/23 13:16	05/13/23 10:39	1
Y Carrier	83.4		30 - 110	04/21/23 13:16	05/13/23 10:39	1

Lab Sample ID: LCS 160-608380/2-A
Matrix: Water
Analysis Batch: 611455

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608380

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium 228			7.96	10.17		1.42	1.00	0.686	pCi/L	128	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Barium	86.0		30 - 110
Y Carrier	81.5		30 - 110

QC Association Summary

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

HPLC/IC

Analysis Batch: 384648

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-1	MW-301	Total/NA	Water	9056A	
310-253478-2	MW-302	Total/NA	Water	9056A	
310-253478-9	MW-307	Total/NA	Water	9056A	
310-253478-11	MW-6	Total/NA	Water	9056A	
310-253478-12	FIELD BLANK	Total/NA	Water	9056A	
MB 310-384648/3	Method Blank	Total/NA	Water	9056A	
LCS 310-384648/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 384269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-1	MW-301	Total/NA	Water	3005A	
310-253478-2	MW-302	Total/NA	Water	3005A	
310-253478-3	MW-302A	Total/NA	Water	3005A	
310-253478-4	MW-304	Total/NA	Water	3005A	
310-253478-5	MW-304A	Total/NA	Water	3005A	
310-253478-6	MW-305	Total/NA	Water	3005A	
310-253478-7	MW-306	Total/NA	Water	3005A	
310-253478-8	MW-306A	Total/NA	Water	3005A	
310-253478-9	MW-307	Total/NA	Water	3005A	
310-253478-10	MW-307A	Total/NA	Water	3005A	
310-253478-11	MW-6	Total/NA	Water	3005A	
310-253478-12	FIELD BLANK	Total/NA	Water	3005A	
MB 310-384269/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-384269/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-253478-1 MS	MW-301	Total/NA	Water	3005A	
310-253478-1 MSD	MW-301	Total/NA	Water	3005A	
310-253478-11 DU	MW-6	Total/NA	Water	3005A	

Analysis Batch: 385079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-1	MW-301	Total/NA	Water	6020B	384269
310-253478-2	MW-302	Total/NA	Water	6020B	384269
310-253478-3	MW-302A	Total/NA	Water	6020B	384269
310-253478-4	MW-304	Total/NA	Water	6020B	384269
310-253478-5	MW-304A	Total/NA	Water	6020B	384269
310-253478-6	MW-305	Total/NA	Water	6020B	384269
310-253478-7	MW-306	Total/NA	Water	6020B	384269
310-253478-8	MW-306A	Total/NA	Water	6020B	384269
310-253478-9	MW-307	Total/NA	Water	6020B	384269
310-253478-10	MW-307A	Total/NA	Water	6020B	384269
310-253478-11	MW-6	Total/NA	Water	6020B	384269
310-253478-12	FIELD BLANK	Total/NA	Water	6020B	384269
MB 310-384269/1-A	Method Blank	Total/NA	Water	6020B	384269
LCS 310-384269/2-A	Lab Control Sample	Total/NA	Water	6020B	384269
310-253478-1 MS	MW-301	Total/NA	Water	6020B	384269
310-253478-1 MSD	MW-301	Total/NA	Water	6020B	384269
310-253478-11 DU	MW-6	Total/NA	Water	6020B	384269

QC Association Summary

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Metals

Analysis Batch: 385266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-384269/1-A	Method Blank	Total/NA	Water	6020B	384269
LCS 310-384269/2-A	Lab Control Sample	Total/NA	Water	6020B	384269

Prep Batch: 385417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-9	MW-307	Total/NA	Water	7470A	
MB 310-385417/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-385417/2-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 385587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-1	MW-301	Total/NA	Water	7470A	
310-253478-2	MW-302	Total/NA	Water	7470A	
310-253478-11	MW-6	Total/NA	Water	7470A	
310-253478-12	FIELD BLANK	Total/NA	Water	7470A	
MB 310-385587/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-385587/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 385618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-9	MW-307	Total/NA	Water	7470A	385417
MB 310-385417/1-A	Method Blank	Total/NA	Water	7470A	385417
LCS 310-385417/2-A	Lab Control Sample	Total/NA	Water	7470A	385417

Analysis Batch: 385740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-1	MW-301	Total/NA	Water	7470A	385587
310-253478-2	MW-302	Total/NA	Water	7470A	385587
310-253478-11	MW-6	Total/NA	Water	7470A	385587
310-253478-12	FIELD BLANK	Total/NA	Water	7470A	385587
MB 310-385587/1-A	Method Blank	Total/NA	Water	7470A	385587
LCS 310-385587/2-A	Lab Control Sample	Total/NA	Water	7470A	385587

Analysis Batch: 389293

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-1	MW-301	Total/NA	Water	6020B	384269
310-253478-2	MW-302	Total/NA	Water	6020B	384269

General Chemistry

Analysis Batch: 384227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-1	MW-301	Total/NA	Water	SM 4500 H+ B	
310-253478-2	MW-302	Total/NA	Water	SM 4500 H+ B	
310-253478-9	MW-307	Total/NA	Water	SM 4500 H+ B	
310-253478-11	MW-6	Total/NA	Water	SM 4500 H+ B	
310-253478-12	FIELD BLANK	Total/NA	Water	SM 4500 H+ B	
LCS 310-384227/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

QC Association Summary

Client: SCS Engineers
Project/Site: Lansing Generating Station - 25223070

Job ID: 310-253478-1

General Chemistry

Analysis Batch: 384370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-1	MW-301	Total/NA	Water	SM 2540C	
310-253478-2	MW-302	Total/NA	Water	SM 2540C	
310-253478-9	MW-307	Total/NA	Water	SM 2540C	
MB 310-384370/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-384370/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 384551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-11	MW-6	Total/NA	Water	SM 2540C	
310-253478-12	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 310-384551/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-384551/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 608194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-1	MW-301	Total/NA	Water	PrecSep-21	
310-253478-2	MW-302	Total/NA	Water	PrecSep-21	
MB 160-608194/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-608194/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-608194/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 608196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-1	MW-301	Total/NA	Water	PrecSep_0	
310-253478-2	MW-302	Total/NA	Water	PrecSep_0	
MB 160-608196/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-608196/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-608196/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 608368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-9	MW-307	Total/NA	Water	PrecSep-21	
310-253478-11	MW-6	Total/NA	Water	PrecSep-21	
310-253478-12	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-608368/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-608368/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 608380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-9	MW-307	Total/NA	Water	PrecSep_0	
310-253478-11	MW-6	Total/NA	Water	PrecSep_0	
310-253478-12	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-608380/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-608380/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Field Service / Mobile Lab

Analysis Batch: 384667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-1	MW-301	Total/NA	Water	Field Sampling	

Field Service / Mobile Lab (Continued)

Analysis Batch: 384667 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253478-2	MW-302	Total/NA	Water	Field Sampling	
310-253478-3	MW-302A	Total/NA	Water	Field Sampling	
310-253478-4	MW-304	Total/NA	Water	Field Sampling	
310-253478-5	MW-304A	Total/NA	Water	Field Sampling	
310-253478-6	MW-305	Total/NA	Water	Field Sampling	
310-253478-7	MW-306	Total/NA	Water	Field Sampling	
310-253478-8	MW-306A	Total/NA	Water	Field Sampling	
310-253478-9	MW-307	Total/NA	Water	Field Sampling	
310-253478-10	MW-307A	Total/NA	Water	Field Sampling	
310-253478-11	MW-6	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-301
Lab Sample ID: 310-253478-1
Date Collected: 04/10/23 16:55
Matrix: Water
Date Received: 04/13/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	384648	QTZ5	EET CF	04/17/23 18:04
Total/NA	Prep	3005A			384269	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	389293	A6US	EET CF	05/31/23 17:00
Total/NA	Prep	3005A			384269	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385079	ZRI4	EET CF	04/20/23 23:55
Total/NA	Prep	7470A			385587	XXW3	EET CF	04/26/23 13:19
Total/NA	Analysis	7470A		1	385740	XXW3	EET CF	04/27/23 13:44
Total/NA	Analysis	SM 2540C		1	384370	HE7K	EET CF	04/14/23 14:16
Total/NA	Analysis	SM 4500 H+ B		1	384227	W9YR	EET CF	04/13/23 12:06
Total/NA	Prep	PrecSep-21			608194	KAC	EET SL	04/20/23 10:20
Total/NA	Analysis	903.0		1	611283	FLC	EET SL	05/12/23 19:42
Total/NA	Prep	PrecSep_0			608196	KAC	EET SL	04/20/23 11:09
Total/NA	Analysis	904.0		1	611283	FLC	EET SL	05/12/23 11:56
Total/NA	Analysis	Ra226_Ra228 Pos		1	611511	SCB	EET SL	05/15/23 14:10
Total/NA	Analysis	Field Sampling		1	384667	BJ0R	EET CF	04/10/23 16:55

Client Sample ID: MW-302
Lab Sample ID: 310-253478-2
Date Collected: 04/11/23 10:50
Matrix: Water
Date Received: 04/13/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	384648	QTZ5	EET CF	04/17/23 18:20
Total/NA	Prep	3005A			384269	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	389293	A6US	EET CF	05/31/23 17:03
Total/NA	Prep	3005A			384269	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385079	ZRI4	EET CF	04/21/23 00:23
Total/NA	Prep	7470A			385587	XXW3	EET CF	04/26/23 13:19
Total/NA	Analysis	7470A		1	385740	XXW3	EET CF	04/27/23 13:46
Total/NA	Analysis	SM 2540C		1	384370	HE7K	EET CF	04/14/23 14:16
Total/NA	Analysis	SM 4500 H+ B		1	384227	W9YR	EET CF	04/13/23 12:07
Total/NA	Prep	PrecSep-21			608194	KAC	EET SL	04/20/23 10:20
Total/NA	Analysis	903.0		1	611283	FLC	EET SL	05/12/23 19:42
Total/NA	Prep	PrecSep_0			608196	KAC	EET SL	04/20/23 11:09
Total/NA	Analysis	904.0		1	611283	FLC	EET SL	05/12/23 11:56
Total/NA	Analysis	Ra226_Ra228 Pos		1	611511	SCB	EET SL	05/15/23 14:10
Total/NA	Analysis	Field Sampling		1	384667	BJ0R	EET CF	04/11/23 10:50

Client Sample ID: MW-302A
Lab Sample ID: 310-253478-3
Date Collected: 04/11/23 10:10
Matrix: Water
Date Received: 04/13/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			384269	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385079	ZRI4	EET CF	04/21/23 00:26

Lab Chronicle

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-302A
Lab Sample ID: 310-253478-3
Date Collected: 04/11/23 10:10
Matrix: Water
Date Received: 04/13/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Field Sampling		1	384667	BJ0R	EET CF	04/11/23 10:10

Client Sample ID: MW-304
Lab Sample ID: 310-253478-4
Date Collected: 04/10/23 12:05
Matrix: Water
Date Received: 04/13/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			384269	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385079	ZRI4	EET CF	04/21/23 00:29
Total/NA	Analysis	Field Sampling		1	384667	BJ0R	EET CF	04/10/23 12:05

Client Sample ID: MW-304A
Lab Sample ID: 310-253478-5
Date Collected: 04/10/23 13:25
Matrix: Water
Date Received: 04/13/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			384269	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385079	ZRI4	EET CF	04/21/23 00:31
Total/NA	Analysis	Field Sampling		1	384667	BJ0R	EET CF	04/10/23 13:25

Client Sample ID: MW-305
Lab Sample ID: 310-253478-6
Date Collected: 04/11/23 12:05
Matrix: Water
Date Received: 04/13/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			384269	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385079	ZRI4	EET CF	04/21/23 00:34
Total/NA	Analysis	Field Sampling		1	384667	BJ0R	EET CF	04/11/23 12:05

Client Sample ID: MW-306
Lab Sample ID: 310-253478-7
Date Collected: 04/11/23 13:25
Matrix: Water
Date Received: 04/13/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			384269	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385079	ZRI4	EET CF	04/21/23 00:37
Total/NA	Analysis	Field Sampling		1	384667	BJ0R	EET CF	04/11/23 13:25

Client Sample ID: MW-306A
Lab Sample ID: 310-253478-8
Date Collected: 04/11/23 14:10
Matrix: Water
Date Received: 04/13/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			384269	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385079	ZRI4	EET CF	04/21/23 00:55
Total/NA	Analysis	Field Sampling		1	384667	BJ0R	EET CF	04/11/23 14:10

Lab Chronicle

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: MW-307
Lab Sample ID: 310-253478-9
Date Collected: 04/10/23 15:10
Matrix: Water
Date Received: 04/13/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	384648	QTZ5	EET CF	04/17/23 18:35
Total/NA	Prep	3005A			384269	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385079	ZRI4	EET CF	04/21/23 00:58
Total/NA	Prep	7470A			385417	XXW3	EET CF	04/25/23 12:22
Total/NA	Analysis	7470A		1	385618	XXW3	EET CF	04/26/23 11:30
Total/NA	Analysis	SM 2540C		1	384370	HE7K	EET CF	04/14/23 14:16
Total/NA	Analysis	SM 4500 H+ B		1	384227	W9YR	EET CF	04/13/23 12:08
Total/NA	Prep	PrecSep-21			608368	KAC	EET SL	04/21/23 12:23
Total/NA	Analysis	903.0		1	611503	FLC	EET SL	05/15/23 18:35
Total/NA	Prep	PrecSep_0			608380	KAC	EET SL	04/21/23 13:16
Total/NA	Analysis	904.0		1	611456	FLC	EET SL	05/13/23 10:34
Total/NA	Analysis	Ra226_Ra228 Pos		1	611842	SCB	EET SL	05/16/23 11:21
Total/NA	Analysis	Field Sampling		1	384667	BJ0R	EET CF	04/10/23 15:10

Client Sample ID: MW-307A
Lab Sample ID: 310-253478-10
Date Collected: 04/10/23 15:55
Matrix: Water
Date Received: 04/13/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			384269	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385079	ZRI4	EET CF	04/21/23 01:00
Total/NA	Analysis	Field Sampling		1	384667	BJ0R	EET CF	04/10/23 15:55

Client Sample ID: MW-6
Lab Sample ID: 310-253478-11
Date Collected: 04/11/23 10:20
Matrix: Water
Date Received: 04/13/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	384648	QTZ5	EET CF	04/17/23 18:51
Total/NA	Prep	3005A			384269	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385079	ZRI4	EET CF	04/21/23 01:03
Total/NA	Prep	7470A			385587	XXW3	EET CF	04/26/23 13:19
Total/NA	Analysis	7470A		1	385740	XXW3	EET CF	04/27/23 13:48
Total/NA	Analysis	SM 2540C		1	384551	ENB7	EET CF	04/17/23 15:04
Total/NA	Analysis	SM 4500 H+ B		1	384227	W9YR	EET CF	04/13/23 12:09
Total/NA	Prep	PrecSep-21			608368	KAC	EET SL	04/21/23 12:23
Total/NA	Analysis	903.0		1	611503	FLC	EET SL	05/15/23 18:35
Total/NA	Prep	PrecSep_0			608380	KAC	EET SL	04/21/23 13:16
Total/NA	Analysis	904.0		1	611456	FLC	EET SL	05/13/23 10:34
Total/NA	Analysis	Ra226_Ra228 Pos		1	611842	SCB	EET SL	05/16/23 11:21
Total/NA	Analysis	Field Sampling		1	384667	BJ0R	EET CF	04/11/23 10:20

Lab Chronicle

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Client Sample ID: FIELD BLANK
Lab Sample ID: 310-253478-12
Date Collected: 04/11/23 14:15
Matrix: Water
Date Received: 04/13/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		1	384648	QTZ5	EET CF	04/17/23 19:06
Total/NA	Prep	3005A			384269	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385079	ZRI4	EET CF	04/21/23 01:09
Total/NA	Prep	7470A			385587	XXW3	EET CF	04/26/23 13:19
Total/NA	Analysis	7470A		1	385740	XXW3	EET CF	04/27/23 13:51
Total/NA	Analysis	SM 2540C		1	384551	ENB7	EET CF	04/17/23 15:04
Total/NA	Analysis	SM 4500 H+ B		1	384227	W9YR	EET CF	04/13/23 12:10
Total/NA	Prep	PrecSep-21			608368	KAC	EET SL	04/21/23 12:23
Total/NA	Analysis	903.0		1	611503	FLC	EET SL	05/15/23 18:35
Total/NA	Prep	PrecSep_0			608380	KAC	EET SL	04/21/23 13:16
Total/NA	Analysis	904.0		1	611456	FLC	EET SL	05/13/23 10:34
Total/NA	Analysis	Ra226_Ra228 Pos		1	611842	SCB	EET SL	05/16/23 11:21

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-23

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-11-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	08-08-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New Mexico	State	MO00054	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	06-30-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	05-17-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
Pos Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

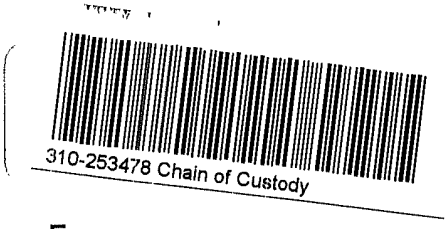
Protocol References:

EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

eurofins | Environment Testing America



Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 4-13-23 | TIME 915 | Received By: MC

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 1 of 3

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: W | Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.8 | Corrected Temp (°C): 0.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

MW-12 FB TW-18 MW-6 MW 12P MW-11R MW-14 MW-6

Document. CED-P-SAM-FRM45521
Revision 26
Date· 27 Jan 2022

Eurofins Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE: WI | Project:

Receipt Information

Date/Time Received: DATE: 4-13-23 | TIME: 915 | Received By: MC

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 2 of 3

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: W | Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.1 | Corrected Temp (°C): -0.1

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

MW-302 MW-302A MW-306A MW-305
MW-304 FB

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE WI | Project:

Receipt Information

Date/Time Received: DATE 4-13-23 | TIME 915 | Received By: MC

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 3 of 3

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: W | Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 2.1 | Corrected Temp (°C): 2.1

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

MW-307 MW-304A MW-304 MW-307A

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Phone (319) 277-2425

Chain of Custody Record

eurofins

Client Information	Sampler: Ethan Schaefer	Lab PM: Sandie Fredrick	Carrier Tracking No(s):	COC No
Client Contact: Meghan Blodgett	Phone: 414-897-4253	E-Mail: Sandra.Fredrick@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: SCS Engineers	PWSID:			Job #:
Address: 2830 Dairy Drive	Due Date Requested			
City: Madison	TAT Requested (days)			
State, Zip: WI, 53718	Compliance Project: Δ Yes Δ No			
Phone: 608-224-2830	PO #: 25223070			
Email: mblodgett@scsengineers.com	WO #:			
Project Name: Lansing Generating Station 25223070	Project #: 25223070			
Site: Lansing, IA	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020 Metals total (Sb, As, Ba, Be, B, Ca, Cd, Cr, Co, Fe, Pb, Li, Mo, Se, Tl)	6020 Metals (As, Fe, Mo only)	7470 Mercury total	TDS and pH	Chloride, Fluoride, Sulfate	EPA 903/904 Radium 226 + 228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	D	I	I	D		
MW-301	4/10/23	1655	G	W	N		X		X	X	X	X		
MW-302	4/11/23	1050	G	W	N		X		X	X	X	X		
MW-302A	4/11/23	1010	G	W	N			X						
~~MW-303~~			~~G~~	~~W~~	~~N~~		~~X~~		~~X~~	~~X~~	~~X~~	~~X~~		Void
MW-304	4/10/23	1205	G	W	N			X						
MW-304A	4/10/23	1325	G	W	N			X						
MW-305	4/11/23	1205	G	W	N			X						
MW-306	4/11/23	1325	G	W	N			X						
MW-306A	4/11/23	1410	G	W	N			X						
MW-307	4/10/23	1510	G	W	N		X		X	X	X	X		
MW-307A	4/10/23	1555	G	W	N			X						

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I, II, III, IV, Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[signature]	4/12/23 1400	SCS			
2						
3				[signature]	4/13/23 0915	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No | Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Samples spread across 3 coolers

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Phone (319) 277-2425

Chain of Custody Record

eurofins

Client Information	Sampler: Ethan Schaefer	Lab PM: Sandie Fredrick	Carrier Tracking No(s):	COC No
Client Contact: Meghan Blodgett	Phone:	E-Mail: Sandra.Fredrick@et.eurofinsus.com	State of Origin:	Page: Page 2 of 2
Company: SCS Engineers	PWSID:			Job #:
Address: 2830 Dairy Drive	Due Date Requested			
City: Madison	TAT Requested (days)			
State, Zip: WI, 53718	Compliance Project: Δ Yes Δ No			
Phone: 608-224-2830	PO #: 25223070			
Email: mblodgett@scsengineers.com	WO #:			
Project Name: Lansing Generating Station 25223070	Project #: 25223070			
Site: Lansing, IA	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020 Metals, total (Sb, As, Ba, Be B Ca Cd Cr Co Fe Pb Li, Mo Se Tl)	6020 Metals (As, Fe Mo only)	7470 Mercury total	TDS and pH	Chloride, Fluoride, Sulfate	EPA 903/904 Radium 226 + 228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	I	I	I	D		
MW-6	4/11/23	1020	G	W	N		X		X	X	X	X		
Field Blank	4/11/23	1415	G	W	N		X		X	X	X	X		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I, II, III, IV, Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time	Company	Received by:	Date/Time.	Company
Ethan Schaefer	4/12/23 1400	SCS			
Relinquished by:	Date/Time	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: NC	Date/Time: 4/13/23 0915	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Samples spread across 3 coolers

Table 2. Sampling Points and Parameters CCR Rule Sampling Program Lansing Generating Station / SCS Engineers Project #25223070.00

		Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-302A	MW-304A	MW-306A	MW-307	MW-307A	MW-308	MW-309	MW-6	Field Blank	TOTAL
CCR Rule Parameters	Appendix III Parameters, Total (Unfiltered)	Boron	X	X	X							X				X	X	6
		Calcium	X	X	X							X				X	X	6
		Chloride	X	X	X							X				X	X	6
		Fluoride	X	X	X							X				X	X	6
		pH	X	X	X							X				X	X	6
		Sulfate	X	X	X							X				X	X	6
		TDS	X	X	X							X				X	X	6
	Appendix IV Parameters, Total (Unfiltered)	Antimony	X	X	X							X				X	X	6
		Arsenic	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Barium	X	X	X							X				X	X	6
		Beryllium	X	X	X							X				X	X	6
		Cadmium	X	X	X							X				X	X	6
		Chromium	X	X	X							X				X	X	6
		Cobalt	X	X	X							X				X	X	6
		Fluoride	X	X	X							X				X	X	6
		Lead	X	X	X							X				X	X	6
		Lithium	X	X	X							X				X	X	6
		Mercury	X	X	X							X				X	X	6
		Molybdenum	X	X	X	X	X	X	X	X	X	X	X			X	X	13
		Selenium	X	X	X							X				X	X	6
		Thallium	X	X	X							X				X	X	6
		Radium	X	X	X							X				X	X	6
	Field Parameters	Groundwater Elevation	X	X	X	X	X	X	X	X	X	X	X	X	X	X		14
		Well Depth	X	X	X	X	X	X	X	X	X	X	X	X	X	X		14
		pH (field)	X	X	X	X	X	X	X	X	X	X	X			X		12
		Specific Conductance	X	X	X	X	X	X	X	X	X	X	X			X		12
		Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X	X			X		12
		ORP	X	X	X	X	X	X	X	X	X	X	X			X		12
		Temperature	X	X	X	X	X	X	X	X	X	X	X			X		12
		Turbidity	X	X	X	X	X	X	X	X	X	X	X			X		12
		Color	X	X	X	X	X	X	X	X	X	X	X			X		12
		Odor	X	X	X	X	X	X	X	X	X	X	X			X		12
Additional Parameters	Total (Unfiltered)	Alkalinity - Carbonate																0
		Alkalinity - Bicarbonate																0
		Iron	X	X	X	X	X	X	X	X	X	X	X			X		12
		Magnesium																0
		Manganese																0
		Potassium																0
		Sodium																0
	Dissolved (Filtered)	Arsenic																0
		Iron																0
		Manganese																0
		Molybdenum																0
	Field Parameters	Sulfide Field																0
		Total Iron Field																0
		Ferrous Iron, Field																0

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 310-60270.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sandra.Fredrick@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Iowa		Job #: 310-253478-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/15/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Lansing Generating Station - 25223070	Project #: 31011020			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PrecSep_21 Radium-226 (GFPC)	904.0/PrecSep_0 Radium-228 (GFPC)	Ra226_228GFPC_P/ Combined Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-301 (310-253478-1)	4/10/23	16:55 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-302 (310-253478-2)	4/11/23	10:50 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-307 (310-253478-9)	4/10/23	15:10 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-6 (310-253478-11)	4/11/23	10:20 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
FIELD BLANK (310-253478-12)	4/11/23	14:15 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS

(11)

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	[signature]	4/13/23 1525		[signature] fedex		
	Relinquished by: fedex	Date/Time:	Company	Received by:	Date/Time: 4/14/23 0910	Company ETASTL
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-253478-1

Login Number: 253478
List Number: 1
Creator: Fredrick, Sandie

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-253478-1

Login Number: 253478
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 04/14/23 02:50 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: SCS Engineers
Job ID: 310-253478-1
Project/Site: Lansing Generating Station - 25223070

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
310-253478-1	MW-301	90.9
310-253478-2	MW-302	95.1
310-253478-9	MW-307	82.8
310-253478-11	MW-6	73.5
310-253478-12	FIELD BLANK	92.1
LCS 160-608194/2-A	Lab Control Sample	88.9
LCS 160-608368/2-A	Lab Control Sample	86.0
LCSD 160-608194/3-A	Lab Control Sample Dup	84.0
MB 160-608194/1-A	Method Blank	90.9
MB 160-608368/1-A	Method Blank	92.1

Tracer/Carrier Legend

Ba = Barium

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
310-253478-1	MW-301	90.9	83.0
310-253478-2	MW-302	95.1	90.5
310-253478-9	MW-307	82.8	80.4
310-253478-11	MW-6	73.5	83.0
310-253478-12	FIELD BLANK	92.1	85.2
LCS 160-608196/2-A	Lab Control Sample	88.9	81.9
LCS 160-608380/2-A	Lab Control Sample	86.0	81.5
LCSD 160-608196/3-A	Lab Control Sample Dup	84.0	86.4
MB 160-608196/1-A	Method Blank	90.9	85.2
MB 160-608380/1-A	Method Blank	92.1	83.4

Tracer/Carrier Legend

Ba = Barium
Y = Y Carrier

Groundwater Monitoring Results - Field Parameters
Lansing Generating Station / SCS Engineers Project #25223070.0
April 2023

Sample	Sample Date/Time	Groundwater Elevation (ft AMSL)	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)	Turbidity (NTU)
MW-6	4/11/2023 1020	664.79	9.9	7.15	8.38	595.6	141.4	0.97
MW-301	4/10/2023 1655	623.40	10.3	8.05	0.19	352.2	-149.6	0.00
MW-302	4/11/2023 1050	628.61	6.9	7.19	0.29	871	-181.4	4.54
MW-302A	4/11/2023 1010	621.32	11.2	7.38	3.72	458.5	98.5	0.00
MW-304	4/10/2023 1205	622.31	8.9	7.27	7.75	481.6	195.5	0.00
MW-304A	4/10/2023 1325	623.95	10.6	7.74	0.21	422.5	115.7	28.82
MW-305	4/11/2023 1205	624.54	6.2	7.44	3.18	396.9	-92.1	1.71
MW-306	4/11/2023 1325	622.07	12.0	7.13	0.27	1682	-165.5	4.12
MW-306A	4/11/2023 1410	622.68	13.7	7.43	0.67	486.3	-93.3	0.83
MW-307	4/10/2023 1510	629.13	8.0	8.36	0.28	312.4	-150.4	0.00
MW-307A	4/10/2023 1555	617.75	11.6	7.33	0.15	521.2	-13.8	0.00

Abbreviations:
AMSL = above mean sea level
µmhos/cm = microSiemens per centimeter
mg/L = milligrams per liter
mV = millivolts
ORP = Oxidation Reduction (REDOX)
NTU = Nephelometric Turbidity Units

Laboratory Notes/Qualifiers:
none

Created by: EMS Date: 4/13/2023
Last revision by: _____ Date: _____
Checked by: _____ Date: _____

C:\Users\hld0\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\USG3GGGC\[April 2023_Lansing_CCR_Field.xlsx]Data

Appendix D

Historical Monitoring Results

Single Location

Name: IPL - Lansing

Location ID: MW-6
Number of Sampling Dates: 23

Parameter Name	Units	12/10/2015	4/29/2016	7/20/2016	10/27/2016	1/18/2017	4/19/2017	6/19/2017	8/15/2017	10/16/2017	4/16/2018	4/26/2018	8/7/2018	10/8/2018	4/15/2019	10/2/2019	5/20/2020	8/19/2020	10/20/2020	4/7/2021	10/26/2021	4/6/2022	10/18/2022	4/11/2023
Boron	ug/L	25.7	<50	<50	<50	<50	31.9	42.1	40	41.2	--	29.8	42.9	40.2	<110	<110	<73	--	<80	<58	64	<58	<58	<76
Calcium	mg/L	64	72.6	68.9	68.6	68.6	67.8	64.6	68.2	66.9	--	72.7	66.5	69.6	67	70	72	--	69	71	72	71	70	79
Chloride	mg/L	7.5	7.6	8.1	6.8	6.5	6.3	6.2	6.5	6.5	--	6.5	7.3	6.6	6.7	6.9	7.7	6.8	5.6	7	6.8	5.3	5.1	6.5
Fluoride	mg/L	0.094	0.15	0.082	0.12	0.092	<0.1	0.1	0.12	0.14	--	0.084	0.12	<0.19	0.63	<0.23	<0.23	--	<0.23	0.34	<0.28	<0.22	<0.22	<0.38
Field pH	Std. Units	7.44	7.64	7.25	7.56	7.62	7.48	7.4	7.48	7.03	--	7.34	7.18	7.06	7.59	7.46	7.34	7.98	7.42	7.39	7.7	7.32	7.4	7.15
Sulfate	mg/L	23	22.2	22.5	25.2	24.8	25.5	27.4	26.9	25.8	--	26.4	24.8	25.5	26	24	27	25	25	23	25	25	21	21
Total Dissolved Solids	mg/L	382	328	352	337	324	350	337	333	318	--	343	351	319	340	280	580	--	300	290	240	280	250	350
Antimony	ug/L	0.18	<0.058	<0.058	<0.058	<0.058	<0.026	0.027	0.037	--	--	<0.026	<0.15	<0.078	<0.53	--	<0.58	--	--	<1.1	<1.1	<0.69	<0.69	<1
Arsenic	ug/L	<4.5	0.28	0.26	0.19	0.23	0.28	0.18	0.28	--	--	0.23	0.26	0.24	<0.75	<0.75	<0.88	--	<0.88	<0.75	<0.75	<0.75	<0.75	<0.53
Barium	ug/L	45.5	45.6	43.8	44.6	46.5	45.4	41.9	44	--	--	44.1	43.1	43	43	46	46	--	45	49	47	48	49	49
Beryllium	ug/L	<0.17	<0.08	<0.08	<0.08	<0.08	<0.012	<0.012	<0.012	--	--	<0.012	<0.12	<0.089	<0.27	--	<0.27	--	--	<0.27	<0.27	<0.27	<0.27	<0.33
Cadmium	ug/L	<0.56	<0.029	<0.029	<0.029	<0.029	<0.018	<0.018	<0.018	--	--	<0.018	--	<0.033	<0.077	--	<0.039	--	<0.049	<0.051	<0.051	<0.055	<0.055	<0.1
Chromium	ug/L	<0.96	0.82	0.81	0.81	1.1	0.76	0.68	0.71	--	--	0.66	0.97	0.73	<0.98	<0.98	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	<0.1	<0.5	<0.5	<0.5	<0.5	0.034	0.021	<0.014	--	--	<0.014	<0.15	<0.062	<0.091	<0.091	<0.091	--	<0.091	<0.091	<0.19	<0.19	<0.19	<0.17
Lead	ug/L	<1.9	<0.19	<0.19	<0.19	<0.19	0.13	<0.033	0.065	--	--	<0.033	<0.12	<0.13	<0.27	<0.27	<0.27	--	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24
Lithium	ug/L	<2.5	<4.9	<4.9	<4.9	<4.9	<2.9	<2.9	3	--	--	<4.6	--	<4.6	<2.7	<2.7	<2.3	--	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Mercury	ug/L	<0.012	<0.039	<0.039	<0.039	<0.039	<0.046	<0.046	<0.046	--	--	<0.09	<0.09	<0.09	<0.1	--	<0.1	--	--	<0.15	<0.15	<0.11	--	<0.14
Molybdenum	ug/L	<1.5	0.25	0.24	0.31	0.21	0.25	0.26	0.31	--	--	0.26	0.28	<0.57	<1.1	<1.1	<1.1	<1.1	<1.1	<1.3	<1.3	<1.2	<1.2	<0.91
Selenium	ug/L	<5.8	0.57	0.46	0.54	0.36	0.5	0.36	0.52	--	--	0.47	0.5	0.46	<1	--	<1	--	<1	<0.96	<0.96	<0.96	<0.96	<1.4
Thallium	ug/L	0.18	<0.5	<0.5	<0.5	<0.5	0.11	<0.036	0.29	--	--	<0.036	--	<0.099	<0.27	--	<0.26	--	--	<0.26	<0.26	<0.26	<0.26	<0.26
Total Radium	pCi/L	1.51	0.458	0.724	0.6	0.397	0.0972	1.06	0.826	--	1.35	--	0.974	1.37	--	0.495	--	--	0.644	0.359	0.779	0.0823	1.29	0.0554
Radium-226	pCi/L	0.599	0.232	0.0668	0.126	0	-0.07	0.457	0.633	--	0	--	0.547	0.705	--	0.237	--	--	0.0266	0.109	0.232	0.0404	0.109	0.0554
Radium-228	pCi/L	0.913	0.226	0.657	0.474	0.397	0.0972	0.606	0.193	--	1.35	--	0.427	0.668	--	0.259	--	--	0.618	0.249	0.547	0.0419	1.18	-0.0629
pH at 25 Degrees C	Std. Units	8	7.7	7.4	7.7	8.1	7.8	7.2	7.5	7.5	--	7.7	7.5	7.4	7.5	7.5	7.5	--	7.4	7.5	7.5	7.6	7.6	7.6
Field Oxidation Potential	mV	166.8	243.7	45.8	122	163	321	251	142	282	--	34.6	233	119	274	88.9	119.6	113.9	68.5	186.2	136.2	197.7	47.3	141.4
Field Specific Conductance	umhos/cm	606.4	596.2	582.4	590	589	589	580	588	591	--	569.1	609	587	618	590	597	597	575.5	599	601	599	552.6	595.6
Field Temperature	deg C	9.6	9.7	9.9	10	8	10.3	11.2	11.4	10.2	--	11.1	10.5	11.5	10	10	10	9.8	9.7	10	9.9	8.9	9.7	9.9
Groundwater Elevation	feet	662.28	662.08	663.21	670.82	666.28	669.82	670.65	670.61	669.58	--	667.96	668.13	664.71	672.78	675.54	674.47	674.64	673.37	671.08	668.14	667.14	665.34	664.79
Oxygen, Dissolved	mg/L	9.44	7.7	4.98	8.6	9.8	7.1	3.7	5.8	8.8	--	3.46	7.4	9.1	8.7	10.29	9.2	9.45	8.23	9.06	9.34	8.92	8.16	8.38
Turbidity	NTU	--	0.41	0.01	2.1	0	1.71	1.35	0	0	--	0.81	1.77	0.01	0.75	0.7	0.01	0	0	0	0	0	0.6	0.97
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	290	300	310	380	330	300	--
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<50	<50	49	<36	<36	<36	<36
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.6	25	5.1	<4.4	14	<3.6	--
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	74000	--	--	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.05	<50	<36	<36	<36	<36	--
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	37000	36000	35000	35000	32000	--
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.004	<4	<4.4	<4.4	<3.6	<3.6	--
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1100	1100	1100	1100	930	--
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4500	4600	4500	4500	4100	--
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	290	300	310	380	330	300	--
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.8	<3.8	<4.4	<4.6	<4.6	<4.6	--
Arsenic, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.8	--	--	<0.75	--	--	--
Molybdenum, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.7	--	--	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-301
Number of Sampling Dates: 23

Parameter Name	Units	12/10/2015	4/29/2016	7/20/2016	10/26/2016	1/17/2017	4/19/2017	6/19/2017	8/15/2017	10/16/2017	4/16/2018	6/4/2018	8/7/2018	10/8/2018	4/15/2019	10/2/2019	5/19/2020	8/18/2020	10/19/2020	4/8/2021	10/26/2021	4/5/2022	10/17/2022	4/10/2023
Boron	ug/L	739	436	417	554	471	405	333	365	436	198	--	279	357	250	360	150	--	260	160	260	220	260	440
Calcium	mg/L	41	39.1	45.1	55.5	56.4	61.7	59.5	66.4	65.9	64.5	--	65.1	72.5	73	68	56	--	57	58	68	69	67	48
Chloride	mg/L	25.5	18.5	18.2	15.8	16	18.3	18	16.2	17.3	20.2	--	17.7	15.9	17	14	17	15	15	18	17	22	15	23
Fluoride	mg/L	0.3	0.32	0.25	0.26	0.21	0.19	0.23	0.26	0.24	0.24	--	0.23	0.27	0.9	0.23	0.56	--	<0.23	0.38	<0.28	<0.22	<0.22	<0.38
Field pH	Std. Units	7.96	8.23	7.86	8.1	8.37	8.5	8.25	8.19	7.66	8.39	8.1	8.08	8.16	8.47	8.11	7.85	8.33	8.06	8.04	8.11	8.3	8.1	8.05
Sulfate	mg/L	62.2	38.8	37.5	45.7	55.6	48.7	44.7	49.4	52.7	49.3	--	53.2	64.4	51	56	34	44	48	27	49	86	63	38
Total Dissolved Solids	mg/L	280	176	218	246	271	289	278	285	289	--	300	326	320	350	310	480	--	280	240	210	260	280	180
Antimony	ug/L	0.078	0.086	<0.058	<0.058	0.088	<0.026	0.08	0.079	--	0.071	--	0.16	0.085	<0.53	--	<0.58	--	--	<1.1	<1.1	<0.69	<0.69	<1
Arsenic	ug/L	<4.5	2.3	2.8	3.5	3.8	3.1	3	3.8	--	3.9	--	4.4	5.4	5.4	5.6	3.8	--	6	5	7.1	4.9	5	3.7
Barium	ug/L	146	139	182	220	227	182	175	196	--	163	--	156	155	160	180	140	--	150	140	160	130	160	73
Beryllium	ug/L	<0.17	<0.08	<0.08	<0.08	<0.08	<0.012	<0.012	<0.012	--	<0.012	--	<0.12	<0.089	<0.27	--	<0.27	--	--	<0.27	<0.27	<0.27	<0.27	<0.33
Cadmium	ug/L	<0.56	<0.029	<0.029	<0.029	<0.029	0.021	<0.018	<0.018	--	<0.018	--	--	<0.033	<0.077	--	<0.039	--	<0.049	0.06	<0.051	<0.055	<0.055	<0.1
Chromium	ug/L	<0.96	<0.34	<0.34	0.35	0.49	0.97	0.21	0.23	--	1.1	--	<0.19	0.09	<0.98	<0.98	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	0.13	<0.5	<0.5	<0.5	<0.5	0.098	0.074	0.07	--	0.086	--	0.16	0.11	0.11	0.11	0.11	--	0.11	0.11	0.23	<0.19	<0.19	<0.17
Lead	ug/L	<1.9	<0.19	0.23	<0.19	0.23	0.36	0.041	<0.033	--	0.037	--	<0.12	<0.13	<0.27	<0.27	<0.27	--	<0.11	<0.21	0.37	<0.24	<0.24	<0.24
Lithium	ug/L	5	5.3	5	6.4	<4.9	<2.9	4.2	7.3	--	<4.6	--	--	9.1	8.7	8	7	--	7.9	7.1	6.7	7.3	8.7	5.8
Mercury	ug/L	<0.012	<0.039	<0.039	<0.039	<0.039	<0.046	<0.046	<0.046	--	0.31	--	<0.09	<0.09	<0.1	--	<0.1	--	--	<0.15	<0.15	<0.11	--	<0.14
Molybdenum	ug/L	2.5	5.5	5	8.1	9.3	6.9	5.5	6.8	--	4.4	--	5.6	10.3	11	10	8.1	5.8	7.5	6.8	6.2	7.6	12	14
Selenium	ug/L	<5.8	<0.18	<0.18	<0.18	<0.18	0.12	0.1	0.13	--	<0.086	--	0.22	0.18	<1	--	<1	--	<1	<0.96	<0.96	<0.96	<0.96	1.9
Thallium	ug/L	0.064	<0.5	<0.5	<0.5	<0.5	0.14	0.05	0.31	--	<0.036	--	--	<0.099	<0.27	--	<0.26	--	--	<0.26	<0.26	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.436	0.525	0.126	1.03	0.647	0.752	0.453	1.86	--	0.689	--	1.66	0.556	--	0.488	--	--	0.889	0.244	0.814	0.103	0.83	0.521
Radium-226	pCi/L	0.349	0.111	0.126	0.236	0.334	0.374	0.0591	1.03	--	0	--	0.692	0.115	--	0.372	--	--	0.339	0.0913	0.259	0.103	0.296	0.043
Radium-228	pCi/L	0.087	0.414	-0.0306	0.791	0.313	0.378	0.394	0.826	--	0.689	--	0.972	0.441	--	0.116	--	--	0.55	0.153	0.555	-0.168	0.534	0.478
pH at 25 Degrees C	Std. Units	7.8	8	7.8	7.8	7.8	7.8	7.7	8.1	7.9	8	--	8.1	8	7.9	8.1	8.1	--	8.1	8	8.1	8.2	8.2	8.2
Field Oxidation Potential	mV	-94.9	-134.2	-166.3	-156	-98	-181	-230	-178	-221	-40	-145.5	-149	-180	-171	-156.8	-77.6	-115.3	-97	-10.1	-159.7	200	-185.1	-149.6
Field Specific Conductance	umhos/cm	431.4	355.2	377.4	456	491	471	468	498	497	505	507	524	545	539	501.8	474	476	488.8	461	534	554	526	352.2
Field Temperature	deg C	13.6	8.9	13.3	15.4	12.3	10.6	12.2	14.7	17	9.5	12.2	14.6	17.4	11.3	15.6	11.3	15	14.7	11.5	16.1	8.7	12.5	10.3
Groundwater Elevation	feet	623.54	622.19	624.76	624.97	624.09	624.7	624.89	624.09	625.7	624.29	624.62	624.51	625.73	629.19	626.54	624.46	625.02	624.42	624.02	627	630.67	630.79	623.4
Oxygen, Dissolved	mg/L	1.08	0.34	0.16	0	1.6	0.3	0	0	0	1	0.89	0.2	0.3	0.2	0.13	0.75	0.16	0.42	0.27	0.1	0.15	0.08	0.19
Turbidity	NTU	--	1.9	2	6.79	4.27	3.04	0.2	4.87	0.05	8.31	2.72	5.5	9.19	9.33	1.36	1.39	1.65	0.75	0	0.81	0	1.31	0
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	200	160	220	260	200	230	--
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	330	110	320	430	280	410	250
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	810	530	650	530	570	590	--
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	62000	--	--	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	500	740	640	620	620	--
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18000	19000	18000	21000	18000	--
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	560	670	530	590	640	--
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3600	2600	3700	3000	3200	--
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11000	13000	13000	16000	14000	--
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	200	160	220	260	200	230	--
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.8	<3.8	<4.6	<4.6	<4.6	<4.6	--
Arsenic, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.5	--	--	6.8	--	--	--
Molybdenum, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.1	--	--	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-302
Number of Sampling Dates: 23

Parameter Name	Units	12/10/2015	4/29/2016	7/20/2016	10/26/2016	1/17/2017	4/19/2017	6/19/2017	8/15/2017	10/16/2017	4/16/2018	6/4/2018	8/7/2018	10/8/2018	4/15/2019	10/2/2019	5/20/2020	8/19/2020	10/19/2020	4/9/2021	10/27/2021	4/5/2022	10/19/2022	4/11/2023
Boron	ug/L	564	468	579	673	576	527	558	645	708	489	--	648	694	690	690	480	--	640	460	630	540	780	480
Calcium	mg/L	95.1	96.5	97.8	110	116	112	110	118	116	120	--	116	122	130	130	120	--	110	120	120	120	110	130
Chloride	mg/L	17	14.9	15.1	15.5	15.7	12.9	14.4	15	13.9	13	--	13.9	13.5	13	12	14	12	11	11	14	12	11	15
Fluoride	mg/L	0.26	0.28	0.22	0.26	0.21	0.22	0.25	0.25	0.28	0.24	--	0.23	0.27	0.79	0.24	0.25	--	<0.23	0.31	1.3	<0.22	<0.22	0.66
Field pH	Std. Units	7.15	7.41	6.86	7.12	7.25	7.25	7.03	6.96	7.1	7.26	6.97	6.92	6.93	7.66	7.15	6.93	7.18	7.06	7.08	6.89	6.92	6.87	7.19
Sulfate	mg/L	9.8	0.72	0.29	0.32	<0.15	<0.5	<0.5	<0.5	<0.5	<0.24	--	<0.24	<0.24	<1.8	<1.8	<3.6	<3.6	<3.6	<2.5	<2.5	<2	<2	<2.1
Total Dissolved Solids	mg/L	503	422	438	499	497	503	512	517	507	--	535	562	518	450	480	710	--	490	470	450	490	520	530
Antimony	ug/L	0.091	<0.058	<0.058	<0.058	0.14	<0.026	0.048	0.069	--	0.035	--	<0.15	<0.078	<0.53	--	<0.58	--	--	<1.1	<1.1	<0.69	<0.69	<1
Arsenic	ug/L	33.9	30.4	41	50.2	45	31.7	36.7	47.3	--	30.8	--	47.6	50.4	37	53	33	--	48	33	51	40	51	42
Barium	ug/L	483	479	540	648	706	559	597	660	--	789	--	661	603	690	740	610	--	630	630	680	690	790	800
Beryllium	ug/L	<0.17	<0.08	<0.08	<0.08	0.1	0.016	<0.012	0.012	--	<0.012	--	<0.12	<0.089	<0.27	--	<0.27	--	--	<0.27	<0.27	<0.27	<0.27	<0.33
Cadmium	ug/L	<0.56	<0.029	<0.029	<0.029	0.074	<0.018	<0.018	<0.018	--	<0.018	--	--	<0.033	<0.077	--	<0.039	--	<0.049	0.06	0.076	<0.055	<0.055	<0.1
Chromium	ug/L	<0.96	0.56	0.39	0.56	3.5	1	0.51	0.44	--	0.35	--	0.49	0.39	<0.98	<0.98	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	1.6	1.1	1.2	1.1	3.2	1.1	1.2	1.2	--	1.1	--	1.1	1.1	1.5	1.3	1	--	0.86	1	1.1	1.5	1.2	1.3
Lead	ug/L	<1.9	<0.19	0.32	<0.19	3.3	0.36	0.14	0.075	--	0.084	--	0.23	<0.13	<0.27	<0.27	<0.27	--	<0.11	<0.21	1	<0.24	0.39	<0.24
Lithium	ug/L	<2.5	<4.9	<4.9	<4.9	<4.9	<2.9	<2.9	<2.9	--	<4.6	--	--	<4.6	<2.7	<2.7	<2.3	--	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Mercury	ug/L	<0.012	<0.039	<0.039	<0.039	<0.039	<0.046	<0.046	<0.046	--	0.35	--	<0.09	<0.09	<0.1	--	<0.1	--	--	<0.15	<0.15	<0.11	--	<0.14
Molybdenum	ug/L	<1.5	0.81	0.98	1.2	1.1	0.87	0.91	1.2	--	0.91	--	1.2	1.5	<1.1	1.4	<1.1	<1.1	<1.1	1.7	1.4	<1.2	1.2	1.9
Selenium	ug/L	<5.8	0.2	0.22	0.28	0.36	0.25	0.19	0.31	--	<0.086	--	0.3	0.26	<1	--	<1	--	<1	1.2	<0.96	<0.96	<0.96	2.9
Thallium	ug/L	0.25	<0.5	<0.5	<0.5	<0.5	0.042	<0.036	0.14	--	<0.036	--	--	<0.099	<0.27	--	<0.26	--	--	2.5	0.31	<0.26	<0.26	<0.26
Total Radium	pCi/L	1.46	2.14	2.07	1.73	1.49	1.25	2.75	1.68	--	1.96	--	2.09	3.52	--	1.48	--	--	1.41	1.57	1.59	1.35	4.33	1.07
Radium-226	pCi/L	0.415	0.985	0.969	0.539	0.514	0.672	1.36	0.619	--	0.776	--	1.23	1.67	--	0.807	--	--	0.531	0.747	0.907	0.604	0.888	0.964
Radium-228	pCi/L	1.04	1.15	1.1	1.19	0.978	0.576	1.39	1.06	--	1.18	--	0.858	1.85	--	0.675	--	--	0.88	0.819	0.68	0.744	3.44	0.11
pH at 25 Degrees C	Std. Units	7.3	7.2	7	7	6.9	7.2	7.2	7	7	7.3	--	7	6.9	7	7	7	--	7.1	7	7	7	7	7
Field Oxidation Potential	mV	-150.3	-163.3	-141.5	-171	-154	-172	-189	-181	-179	-152	-179.3	-164	-43.9	-159	-160	-161.5	-173	-182.5	-171.2	-128.1	202.8	-186.2	-181.4
Field Specific Conductance	umhos/cm	918	875	891	1004	1036	971	1017	1053	1045	1098	1068	1095	1039	1089	1049	1070	1039	1074	1043	1075	1151	1045	871
Field Temperature	deg C	12.7	7.8	14.2	15.6	9.3	7.6	11.4	15.7	16.2	6	10.8	15.3	16.99	7.1	15.9	8.7	16.2	14.4	7.5	15.7	6.3	14.5	6.9
Groundwater Elevation	feet	627.88	626.93	628.6	628.35	627.32	628.98	627.75	627.28	628.75	628.98	628.27	627.62	628.59	629.99	630.04	627.68	627.53	627.14	627.87	628.86	623.29	629.51	628.61
Oxygen, Dissolved	mg/L	0.08	0.1	0.03	0	0.2	0	0	0	0	0.8	0.12	0.1	0.48	0.2	0.11	0.19	0.05	0.1	0.03	1.07	0.13	0.03	0.29
Turbidity	NTU	--	4.98	2.6	11.14	93.1	3.36	4.61	4.28	3.96	5.25	1.46	11.23	5.92	18.39	4.71	4.16	4	2.96	3.15	3.35	3.21	23.33	4.54
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	530	540	540	550	620	540	--
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	32000	30000	33000	33000	44000	40000	47000
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2800	2500	2400	2600	3000	2500	--
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	130000	--	--	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	33000	36000	35000	45000	43000	--
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	42000	41000	39000	49000	42000	--
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2700	2500	2700	3000	2300	--
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4300	3200	4300	3900	3900	--
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17000	16000	18000	21000	19000	--
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	530	540	540	550	620	540	--
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<7.6	<3.8	<4.6	<4.6	<4.6	<4.6	--
Arsenic, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	46	44	33	48	38	50	--
Molybdenum, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-302A
Number of Sampling Dates: 9

Parameter Name	Units	5/20/2020	7/6/2020	8/19/2020	10/19/2020	4/9/2021	10/27/2021	4/5/2022	10/17/2022	4/11/2023
Boron	ug/L	190	250	--	160	170	140	170	190	--
Calcium	mg/L	79	78	--	72	75	75	73	74	--
Chloride	mg/L	7.8	6.9	7.1	6	6.7	6.9	5.6	5.2	--
Fluoride	mg/L	<0.23	<0.23	--	<0.23	<0.28	<0.28	<0.22	<0.22	--
Field pH	Std. Units	7.27	7.22	7.41	7.33	7.25	7.15	7.34	7.28	7.38
Sulfate	mg/L	53	47	49	47	45	50	52	44	--
Total Dissolved Solids	mg/L	520	350	--	350	330	280	300	310	--
Antimony	ug/L	<0.58	<0.51	--	--	<1.1	<1.1	<0.69	<0.69	--
Arsenic	ug/L	<0.88	<0.88	--	<0.88	<0.75	<0.75	<0.75	<0.75	<0.53
Barium	ug/L	51	47	--	46	51	48	49	50	--
Beryllium	ug/L	<0.27	<0.27	--	--	<0.27	<0.27	<0.27	<0.27	--
Cadmium	ug/L	<0.039	<0.049	--	<0.049	<0.051	<0.051	<0.055	<0.055	--
Chromium	ug/L	<1.1	<1.1	--	1.2	<1.1	<1.1	<1.1	<1.1	--
Cobalt	ug/L	0.41	0.098	--	<0.091	<0.091	<0.19	0.45	<0.19	--
Lead	ug/L	0.48	0.14	--	<0.11	<0.21	0.22	<0.24	<0.24	--
Lithium	ug/L	<2.3	<2.5	--	<2.5	<2.5	<2.5	<2.5	<2.5	--
Mercury	ug/L	<0.1	<0.1	--	--	<0.15	<0.15	<0.11	--	--
Molybdenum	ug/L	<1.1	<1.1	<1.1	<1.1	<1.3	<1.3	<1.2	<1.2	<0.91
Selenium	ug/L	1.3	1.1	--	<1	1.2	1	1.3	<0.96	--
Thallium	ug/L	<0.26	<0.26	--	--	<0.26	<0.26	<0.26	<0.26	--
Total Radium	pCi/L	--	0.0963	--	0.732	0.714	1.01	0.402	0.371	--
Radium-226	pCi/L	--	0.0963	--	0.229	0.076	0.233	0.196	0.0611	--
Radium-228	pCi/L	--	-0.00723	--	0.503	0.638	0.778	0.206	0.31	--
pH at 25 Degrees C	Std. Units	7.4	7.6	--	7.4	7.4	7.6	7.4	7.5	--
Field Oxidation Potential	mV	126.9	47	74.1	125.4	104.7	159.1	199.7	105.7	98.5
Field Specific Conductance	umhos/cm	644	641	638	650.1	597	627	630	619.9	458.5
Field Temperature	deg C	11.7	11.7	11.8	11.4	11.1	12	10.2	11.6	11.2
Groundwater Elevation	feet	623.19	624.2	623.52	623.03	623.12	623.1	623.71	622.97	621.32
Oxygen, Dissolved	mg/L	6.55	6.6	6.23	6.46	7.88	7.27	6.49	6.27	3.72
Turbidity	NTU	11.9	4.68	0.19	0.58	0.86	0	0	1.39	0
Total Alkalinity as CaCO3	mg/L	--	--	290	300	300	300	330	290	--
Iron, dissolved	ug/L	--	--	330	56	440	38	<36	55	37
Manganese, dissolved	ug/L	--	--	38	10	59	<4.4	8.3	5.4	--
Calcium, total	ug/L	--	--	--	81000	--	--	--	--	--
Iron, total	ug/L	--	--	--	<50	47	41	<36	<36	--
Magnesium, total	ug/L	--	--	--	38000	37000	35000	37000	32000	--
Manganese, total	ug/L	--	--	--	<4	4.5	<4.4	<3.6	<3.6	--
Potassium, total	ug/L	--	--	--	1000	1000	1000	1100	900	--
Sodium, total	ug/L	--	--	--	6700	7000	6300	7400	6800	--
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	290	300	300	300	330	290	--
Carbonate Alkalinity as CaCO3	mg/L	--	--	<3.8	<3.8	<4.2	<4.6	<4.6	<4.6	--
Arsenic, dissolved	ug/L	--	--	<0.88	--	--	<0.75	--	--	--
Molybdenum, dissolved	ug/L	--	--	<1.1	--	--	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-303
Number of Sampling Dates: 22

Parameter Name	Units	12/10/2015	4/29/2016	7/20/2016	10/26/2016	1/17/2017	4/19/2017	6/20/2017	8/15/2017	10/16/2017	4/16/2018	6/4/2018	8/7/2018	10/8/2018	4/15/2019	10/2/2019	5/19/2020	8/18/2020	10/19/2020	4/8/2021	10/26/2021	4/5/2022	10/17/2022
Boron	ug/L	178	178	405	235	133	177	390	386	592	144	--	675	474	150	520	150	--	370	120	170	110	590
Calcium	mg/L	38.2	48.6	64.5	67.1	72.5	60.1	62.2	42	84.7	54.6	--	46	35.3	49	46	54	--	34	47	49	48	42
Chloride	mg/L	18.7	16.8	18.1	17.7	21.9	16.1	17.3	18.4	17.2	24.1	--	14.6	16.3	18	16	15	16	15	21	25	23	17
Fluoride	mg/L	0.43	0.32	0.37	0.31	0.22	0.24	0.36	0.48	0.25	0.32	--	0.47	0.72	1	0.42	0.38	--	<0.23	0.52	<0.28	0.33	<0.22
Field pH	Std. Units	8.03	8.07	7.12	7.93	8.16	8.19	7.93	7.78	7.2	8	7.59	7.66	7.91	7.95	7.83	7.67	7.65	7.77	8	7.45	8.07	7.66
Sulfate	mg/L	30.8	35.8	56	62.2	67.9	43.7	71.9	43.4	69.9	43.5	--	52.5	29.1	35	39	42	33	20	25	28	54	58
Total Dissolved Solids	mg/L	240	200	317	340	350	317	346	219	379	--	256	262	181	280	210	450	--	180	210	150	180	200
Antimony	ug/L	0.22	0.27	0.55	0.25	0.19	0.26	0.34	0.26	--	0.16	--	0.34	0.19	<0.53	--	<0.58	--	--	<1.1	<1.1	<0.69	<0.69
Arsenic	ug/L	<4.5	1.4	1.4	1.8	1.8	2.4	2.5	2.5	--	1.2	--	2.3	2.3	1.4	2.5	1.4	--	3.2	1.5	2.2	1.3	1.9
Barium	ug/L	102	122	178	169	174	159	214	147	--	173	--	194	121	160	220	210	--	190	170	240	200	230
Beryllium	ug/L	<0.17	<0.08	<0.08	<0.08	<0.08	<0.012	<0.012	<0.012	--	0.046	--	<0.12	<0.089	<0.27	--	<0.27	--	--	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.56	<0.029	<0.029	<0.029	0.042	0.018	<0.018	<0.018	--	<0.018	--	--	<0.033	<0.077	--	<0.039	--	<0.049	<0.051	<0.051	<0.055	<0.055
Chromium	ug/L	<0.96	0.52	<0.34	<0.34	0.81	0.71	0.36	0.36	--	0.51	--	0.44	0.089	<0.98	<0.98	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	0.14	<0.5	<0.5	<0.5	<0.5	0.09	0.22	0.14	--	0.14	--	0.36	0.21	<0.091	0.12	<0.091	--	0.098	<0.091	<0.19	<0.19	<0.19
Lead	ug/L	<1.9	<0.19	0.2	<0.19	0.24	0.078	0.085	<0.033	--	<0.033	--	0.24	<0.13	<0.27	<0.27	<0.27	--	<0.11	<0.21	<0.21	<0.24	<0.24
Lithium	ug/L	5.1	6.2	13.9	10.4	5.9	4.7	10.4	16.1	--	<4.6	--	--	8.1	3.3	9.1	4.2	--	9.5	3.5	11	5.4	10
Mercury	ug/L	<0.012	<0.039	<0.039	<0.039	<0.039	<0.046	<0.046	<0.046	--	<0.09	--	<0.09	<0.09	<0.1	--	<0.1	--	--	<0.15	<0.15	<0.11	--
Molybdenum	ug/L	<1.5	5	16.8	16.1	10.7	7.6	15.9	11.8	--	7.3	--	21.6	12	6.2	9.8	3.1	23	10	4.8	7.1	9.2	22
Selenium	ug/L	<5.8	1.2	0.9	0.6	1.9	0.63	0.67	0.59	--	3.3	--	0.38	0.39	<1	--	1.4	--	<1	1.1	<0.96	<0.96	<0.96
Thallium	ug/L	0.14	<0.5	<0.5	<0.5	<0.5	<0.036	<0.036	0.17	--	<0.036	--	--	<0.099	<0.27	--	<0.26	--	--	<0.26	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.926	0.73	0.768	1.24	0.416	0.339	0.639	0.477	--	0.787	--	0.929	1.87	--	0.463	--	--	0.27	0.243	0.359	0.533	0.512
Radium-226	pCi/L	-0.132	0.18	0.372	0.653	-0.077	0.339	0.217	0.155	--	0.359	--	0.929	0.664	--	0.444	--	--	0.217	0.125	0.278	0.296	0.2
Radium-228	pCi/L	0.926	0.555	0.396	0.582	0.416	-0.167	0.422	0.322	--	0.428	--	-0.073	1.21	--	0.0185	--	--	0.0528	0.118	0.0804	0.236	0.312
pH at 25 Degrees C	Std. Units	8	8	7.6	7.8	7.7	8.1	7.7	7.9	7.4	8	--	8	7.9	8	8	7.9	--	7.9	8	7.7	8.1	7.4
Field Oxidation Potential	mV	84.2	133.2	-27.2	10	221	81	9	-75	49	53	68	-71	139	-76	156	28.9	25.8	38.4	78.4	125.8	202.1	25.5
Field Specific Conductance	umhos/cm	375.2	409	535	776	614	520	567	423	687	552	431	425	328	448	409	464	468	340.3	425	452	452.4	397.1
Field Temperature	deg C	8.5	6.7	30.4	22.1	6.3	10.5	24.8	31.7	25.2	4.1	17	31.5	28.5	4.2	25.2	6.3	30.4	23.5	3.7	24.8	4.6	23.1
Groundwater Elevation	feet	638.79	638.07	639.33	638.65	638.1	639.2	638.77	637.86	638.79	638.62	638.81	637.85	637.32	638.22	638.03	637.98	638.22	636.96	638.07	638.68	641.69	639.39
Oxygen, Dissolved	mg/L	2.38	2.63	0.15	8.1	3	1.4	0	0	1.9	3.5	0.36	0.4	0.4	1.4	0.27	1.29	0.15	0.58	2.03	0.17	1.17	0.11
Turbidity	NTU	--	2.13	0.39	3.02	2.53	0	0	0	0	0.4	1.08	4.51	2.62	6.6	0.58	0	1.62	0	0	0.65	0	2.07
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	190	120	170	220	210	120
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<50	<50	320	69	<36	46
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120	160	66	38	60	110
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	35000	--	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.05	<50	<36	38	<36	<36
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13000	18000	16000	20000	13000
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	180	30	39	89	220
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2200	1500	2800	1900	3100
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12000	13000	15000	16000	15000
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	190	120	170	220	210	120
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.8	<3.8	<3.8	<4.6	<4.6	<4.6
Arsenic, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.1	--	--	2.2	--	--
Molybdenum, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23	--	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-304
Number of Sampling Dates: 10

Parameter Name	Units	6/20/2019	10/2/2019	5/20/2020	8/19/2020	10/19/2020	4/9/2021	10/26/2021	4/5/2022	10/17/2022	4/10/2023
Boron	ug/L	<110	<110	<73	--	<80	64	<58	71	78	--
Calcium	mg/L	82	72	70	--	66	69	71	70	79	--
Chloride	mg/L	5.9	7	6.2	7.7	6.2	6.5	6.9	5.3	8.6	--
Fluoride	mg/L	<0.23	<0.23	<0.23	--	<0.23	<0.28	<0.28	<0.22	<0.22	--
Field pH	Std. Units	7.01	7.16	7.32	7.55	7.16	7.27	7.29	7.25	7.17	7.27
Sulfate	mg/L	20	17	17	15	16	15	18	20	14	--
Total Dissolved Solids	mg/L	350	300	470	--	270	290	200	240	290	--
Antimony	ug/L	<0.53	--	<0.58	--	--	<1.1	<1.1	<0.69	<0.69	--
Arsenic	ug/L	<0.75	<0.75	<0.88	--	<0.88	<0.75	<0.75	<0.75	<0.75	<0.53
Barium	ug/L	54	47	42	--	42	43	44	42	49	--
Beryllium	ug/L	<0.27	--	<0.27	--	--	<0.27	<0.27	<0.27	<0.27	--
Cadmium	ug/L	<0.077	--	<0.039	--	<0.049	<0.051	<0.051	<0.055	<0.055	--
Chromium	ug/L	1.6	1	8.2	--	<1.1	<1.1	<1.1	<1.1	<1.1	--
Cobalt	ug/L	1.1	0.19	0.22	--	<0.091	<0.091	0.22	<0.19	<0.19	--
Lead	ug/L	1.2	0.35	<0.27	--	<0.11	<0.21	0.23	<0.24	<0.24	--
Lithium	ug/L	<2.7	<2.7	<2.3	--	<2.5	<2.5	<2.5	<2.5	<2.5	--
Mercury	ug/L	<0.1	--	<0.1	--	--	<0.15	<0.15	<0.11	--	--
Molybdenum	ug/L	<1.1	<1.1	<1.1	1.2	<1.1	<1.3	<1.3	2.7	2.1	2.5
Selenium	ug/L	<1	--	<1	--	<1	<0.96	<0.96	<0.96	<0.96	--
Thallium	ug/L	<0.27	--	<0.26	--	--	<0.26	<0.26	<0.26	<0.26	--
Total Radium	pCi/L	0.356	0.9	--	--	0.139	0.497	0.87	0.143	0.0692	--
Radium-226	pCi/L	0.217	0.246	--	--	-0.0496	0.0825	0.331	0.143	0.0692	--
Radium-228	pCi/L	0.139	0.653	--	--	0.139	0.415	0.539	-0.0479	-0.288	--
pH at 25 Degrees C	Std. Units	7.4	7	7.3	--	7.3	7.4	7.4	7.5	7.4	--
Field Oxidation Potential	mV	41	107.3	104.9	109.6	155.6	160.3	171.3	201.4	169.2	195.5
Field Specific Conductance	umhos/cm	593	578.4	574	583	601.9	520	562.3	571.8	643.3	481.6
Field Temperature	deg C	10.6	12.4	9	11.8	11.8	8.8	12.1	8.2	11.9	8.9
Groundwater Elevation	feet	0	623.79	621.57	621.75	621.4	621.46	621.29	621.72	621.21	622.31
Oxygen, Dissolved	mg/L	6.2	7.51	7.78	6.76	6.84	8.69	8.32	7.2	6.97	7.75
Turbidity	NTU	104	3.51	3.72	1.06	0.42	0	0	0	0.01	0
Total Alkalinity as CaCO3	mg/L	280	--	--	300	310	300	370	320	330	--
Iron, dissolved	ug/L	--	--	--	<50	<50	<36	67	<36	<36	50
Manganese, dissolved	ug/L	--	--	--	6.9	4.1	10	<4.4	<3.6	<3.6	--
Calcium, total	ug/L	--	--	--	--	75000	--	--	--	--	--
Iron, total	ug/L	--	--	--	51	<50	37	<36	<36	<36	--
Magnesium, total	ug/L	--	--	--	--	35000	33000	32000	33000	34000	--
Manganese, total	ug/L	--	--	--	--	6	5.9	<4.4	<3.6	<3.6	--
Potassium, total	ug/L	--	--	--	--	1300	1200	1300	1300	1400	--
Sodium, total	ug/L	--	--	--	--	6100	4900	4000	5900	6300	--
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	300	310	300	370	320	330	--
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	<3.8	<3.8	<4.2	<4.6	<4.6	<4.6	--
Arsenic, dissolved	ug/L	--	--	--	<0.88	--	--	<0.75	--	--	--
Molybdenum, dissolved	ug/L	--	--	--	1.6	--	--	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-304A
Number of Sampling Dates: 11

Parameter Name	Units	5/20/2020	7/6/2020	8/19/2020	10/19/2020	2/23/2021	4/9/2021	7/12/2021	10/26/2021	4/5/2022	10/17/2022	4/10/2023
Boron	ug/L	1800	1700	--	1700	--	1400	--	1300	1500	1600	--
Calcium	mg/L	54	41	--	35	--	43	--	35	38	37	--
Chloride	mg/L	15	13	13	12	--	13	--	15	16	16	--
Fluoride	mg/L	0.57	0.42	--	<0.23	--	0.53	--	<0.28	0.32	<0.22	--
Field pH	Std. Units	8.04	7.9	8.48	7.89	8.01	7.78	8.09	7.94	7.97	7.81	7.74
Sulfate	mg/L	83	77	76	76	--	77	--	91	87	69	--
Total Dissolved Solids	mg/L	680	330	--	310	--	300	--	240	270	270	--
Antimony	ug/L	<0.58	<0.51	--	--	--	<1.1	--	<1.1	<0.69	<0.69	--
Arsenic	ug/L	1.3	<0.88	--	<0.88	--	0.78	--	<0.75	<0.75	<0.75	0.63
Barium	ug/L	67	34	--	28	--	36	--	26	30	29	--
Beryllium	ug/L	<0.27	<0.27	--	--	--	<0.27	--	<0.27	<0.27	<0.27	--
Cadmium	ug/L	0.19	0.098	--	0.073	--	0.096	--	<0.051	0.074	0.076	--
Chromium	ug/L	2.2	1.1	--	<1.1	--	1.6	--	<1.1	<1.1	<1.1	--
Cobalt	ug/L	3.2	0.83	--	0.43	--	0.88	--	<0.19	0.48	0.88	--
Lead	ug/L	4.3	1.2	--	0.48	--	1.1	--	0.37	0.81	1.1	--
Lithium	ug/L	2.7	<2.5	--	<2.5	--	<2.5	--	<2.5	<2.5	<2.5	--
Mercury	ug/L	<0.1	<0.1	--	--	--	<0.15	--	<0.15	<0.11	--	--
Molybdenum	ug/L	110	140	140	130	120	110	100	120	120	130	150
Selenium	ug/L	<1	<1	--	<1	--	<0.96	--	<0.96	<0.96	<0.96	--
Thallium	ug/L	<0.26	<0.26	--	--	--	<0.26	--	<0.26	<0.26	<0.26	--
Total Radium	pCi/L	--	0.573	--	0.157	--	0.468	--	0.698	0.51	0.296	--
Radium-226	pCi/L	--	0.221	--	0.117	--	0.0845	--	0.245	-0.00262	0.207	--
Radium-228	pCi/L	--	0.352	--	0.0402	--	0.384	--	0.454	0.51	0.0889	--
pH at 25 Degrees C	Std. Units	8	8	--	8	--	8	--	8.1	8	8	--
Field Oxidation Potential	mV	61.8	-15.8	50.5	162.7	44.9	151.6	80.3	157.1	198.1	-24.7	115.7
Field Specific Conductance	umhos/cm	529	541	533	547.4	534	533	543.1	526.8	520.9	480.6	422.5
Field Temperature	deg C	12.6	19.1	14	10.1	9.1	10.1	13.8	13.4	9.4	10.6	10.6
Groundwater Elevation	feet	624.88	625.76	0	624.41	625.04	624.31	623.87	623.87	619	623.56	623.95
Oxygen, Dissolved	mg/L	0.48	0.3	0.27	0.78	0.39	0.41	0.48	2.53	0.19	0.13	0.21
Turbidity	NTU	585.9	181.9	236.2	90.29	116.6	165.2	36.09	2.78	42.65	77.88	28.82
Total Alkalinity as CaCO3	mg/L	--	--	190	190	--	180	--	210	210	180	--
Iron, dissolved	ug/L	--	--	<50	55	--	<36	--	<36	<36	<36	390
Manganese, dissolved	ug/L	--	--	16	7.3	--	6.2	--	<4.4	6.8	<3.6	--
Calcium, total	ug/L	--	--	--	35000	--	--	--	--	--	--	--
Iron, total	ug/L	--	--	--	270	--	580	--	<36	240	380	--
Magnesium, total	ug/L	--	--	--	16000	--	18000	--	15000	16000	14000	--
Manganese, total	ug/L	--	--	--	26	--	54	--	<4.4	25	31	--
Potassium, total	ug/L	--	--	--	680	--	710	--	650	740	540	--
Sodium, total	ug/L	--	--	--	63000	--	58000	--	55000	58000	49000	--
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	190	190	--	180	--	210	210	180	--
Carbonate Alkalinity as CaCO3	mg/L	--	--	<7.6	<3.8	--	<4.6	--	<4.6	<4.6	<4.6	--
Arsenic, dissolved	ug/L	--	--	<0.88	--	--	--	--	<0.75	--	--	--
Molybdenum, dissolved	ug/L	--	--	160	140	140	120	--	120	130	140	--

Single Location

Name: IPL - Lansing

Location ID: MW-305
Number of Sampling Dates: 10

Parameter Name	Units	6/20/2019	10/2/2019	5/19/2020	8/18/2020	10/20/2020	4/9/2021	10/27/2021	4/4/2022	10/18/2022	4/11/2023
Boron	ug/L	180	190	210	--	220	140	200	110	240	--
Calcium	mg/L	92	97	82	--	76	79	79	78	80	--
Chloride	mg/L	6.8	3.2	7.5	6.9	6	4.8	6.6	3.5	5.5	--
Fluoride	mg/L	<0.23	<0.23	0.23	--	<0.23	<0.28	<0.28	<0.22	<0.22	--
Field pH	Std. Units	7.19	7.03	6.9	7.23	7.24	7.17	7.29	6.94	7.32	7.44
Sulfate	mg/L	24	26	<3.6	<3.6	<3.6	29	14	42	3.6	--
Total Dissolved Solids	mg/L	440	380	540	--	320	300	260	270	300	--
Antimony	ug/L	<0.53	--	<0.58	--	--	<1.1	<1.1	<0.69	<0.69	--
Arsenic	ug/L	2.2	3.4	3.6	--	5.6	1.7	3.9	0.89	4.7	0.93
Barium	ug/L	170	190	220	--	200	150	200	97	230	--
Beryllium	ug/L	<0.27	--	<0.27	--	--	<0.27	<0.27	<0.27	<0.27	--
Cadmium	ug/L	<0.077	--	<0.039	--	<0.049	<0.051	<0.051	<0.055	<0.055	--
Chromium	ug/L	<0.98	<0.98	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	--
Cobalt	ug/L	0.52	0.27	0.32	--	0.12	0.29	<0.19	<0.19	<0.19	--
Lead	ug/L	<0.27	<0.27	<0.27	--	<0.11	<0.21	0.29	<0.24	<0.24	--
Lithium	ug/L	3.4	4.6	<2.3	--	<2.5	<2.5	<2.5	2.6	<2.5	--
Mercury	ug/L	<0.1	--	<0.1	--	--	<0.15	<0.15	<0.11	--	--
Molybdenum	ug/L	1.7	1.6	<1.1	1.8	<1.1	<1.3	<1.3	<1.2	<1.2	1.1
Selenium	ug/L	<1	--	<1	--	<1	1.4	<0.96	1.7	<0.96	--
Thallium	ug/L	<0.27	--	<0.26	--	--	<0.26	<0.26	<0.26	<0.26	--
Total Radium	pCi/L	0.553	0.557	--	--	0.377	0.474	1.43	0.249	1.2	--
Radium-226	pCi/L	0.181	0.38	--	--	0.296	0.301	0.55	0.145	0.331	--
Radium-228	pCi/L	0.372	0.178	--	--	0.0809	0.173	0.879	0.104	0.871	--
pH at 25 Degrees C	Std. Units	7.2	7.2	7.2	--	7.2	7.3	7.3	7.4	7.4	--
Field Oxidation Potential	mV	27	-105.6	-138	-162.9	-145.4	-25.8	-128.5	198.9	-186.6	-92.1
Field Specific Conductance	umhos/cm	638	635	684	654	634	574	643	545	607.2	396.9
Field Temperature	deg C	15.5	19	9.8	19	15.6	7.1	16.3	4.4	15.7	6.2
Groundwater Elevation	feet	0	629.77	627.24	626.98	626.54	627.02	626.41	627.17	626.36	624.54
Oxygen, Dissolved	mg/L	0.2	0.21	0.48	0.07	0.22	2.1	0.08	4.06	0.06	3.18
Turbidity	NTU	9.6	8.87	20.44	27.27	3.65	14.88	0.27	4.57	8.17	1.71
Total Alkalinity as CaCO3	mg/L	290	--	--	340	340	280	330	290	360	--
Iron, dissolved	ug/L	--	--	--	11000	10000	3700	6900	830	7400	3300
Manganese, dissolved	ug/L	--	--	--	2000	1800	1100	1400	520	1400	--
Calcium, total	ug/L	--	--	--	--	87000	--	--	--	--	--
Iron, total	ug/L	--	--	--	--	12000	5900	7300	1500	8500	--
Magnesium, total	ug/L	--	--	--	--	32000	25000	30000	23000	30000	--
Manganese, total	ug/L	--	--	--	--	1800	1200	1500	560	1300	--
Potassium, total	ug/L	--	--	--	--	1800	1300	1600	1500	1500	--
Sodium, total	ug/L	--	--	--	--	7700	5900	6700	5500	7000	--
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	340	340	280	330	290	360	--
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	<7.6	<3.8	<4.6	<2.3	<4.6	<4.6	--
Arsenic, dissolved	ug/L	--	--	--	6.4	--	--	3.7	--	--	--
Molybdenum, dissolved	ug/L	--	--	--	2.8	--	--	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-306
Number of Sampling Dates: 14

Parameter Name	Units	6/20/2019	10/2/2019	12/5/2019	2/5/2020	5/19/2020	8/18/2020	10/20/2020	2/23/2021	4/9/2021	7/12/2021	10/27/2021	4/4/2022	10/19/2022	4/11/2023
Boron	ug/L	860	660	--	--	720	--	720	--	650	--	580	550	600	--
Calcium	mg/L	240	260	--	--	340	--	260	--	290	--	210	200	280	--
Chloride	mg/L	24	40	--	--	32	28	27	--	33	--	34	41	32	--
Fluoride	mg/L	<0.23	<0.23	--	--	<0.23	--	<0.23	--	<0.28	--	<0.28	<0.22	<0.22	--
Field pH	Std. Units	6.87	9	6.76	6.95	6.66	7.12	6.88	6.87	6.85	7.51	6.86	6.86	6.8	7.13
Sulfate	mg/L	280	140	--	--	430	260	220	--	240	--	95	100	500	--
Total Dissolved Solids	mg/L	1200	1300	--	--	3400	--	1100	--	1300	--	960	1100	1500	--
Antimony	ug/L	<0.53	--	--	--	<0.58	--	--	--	<1.1	--	<1.1	<0.69	<0.69	--
Arsenic	ug/L	8.6	12	9.3	9.4	8.5	--	10	9	8	8.2	8.6	7.7	7.1	7
Barium	ug/L	280	540	--	--	260	--	250	--	280	--	320	350	390	--
Beryllium	ug/L	<0.27	--	--	--	<0.27	--	--	--	<0.27	--	<0.27	<0.27	<0.27	--
Cadmium	ug/L	<0.077	--	--	--	<0.039	--	<0.049	--	<0.051	--	<0.051	<0.055	<0.055	--
Chromium	ug/L	<0.98	<0.98	--	--	<1.1	--	<1.1	--	1.3	--	<1.1	<1.1	<1.1	--
Cobalt	ug/L	1	0.98	--	--	0.53	--	0.24	--	0.35	--	0.3	0.49	0.3	--
Lead	ug/L	0.52	<0.27	--	--	<0.27	--	<0.11	--	<0.21	--	1.1	<0.24	<0.24	--
Lithium	ug/L	19	25	--	--	25	--	26	--	24	--	22	23	27	--
Mercury	ug/L	<0.1	--	--	--	<0.1	--	--	--	<0.15	--	<0.15	<0.11	--	--
Molybdenum	ug/L	<1.1	<1.1	--	--	<1.1	<1.1	<1.1	--	<1.3	--	<1.3	<1.2	<1.2	<0.91
Selenium	ug/L	<1	--	--	--	<1	--	<1	--	<0.96	--	<0.96	<0.96	<0.96	--
Thallium	ug/L	<0.27	--	--	--	<0.26	--	--	--	<0.26	--	<0.26	<0.26	<0.26	--
Total Radium	pCi/L	0.897	1.79	--	--	--	--	1.16	--	1.09	--	2.1	0.757	0.693	--
Radium-226	pCi/L	0.432	0.902	--	--	--	--	0.459	--	0.436	--	0.814	0.464	0.431	--
Radium-228	pCi/L	0.465	0.889	--	--	--	--	0.696	--	0.659	--	1.29	0.292	0.262	--
pH at 25 Degrees C	Std. Units	6.9	7.2	--	--	6.9	--	6.8	--	7.2	--	7	7	7	--
Field Oxidation Potential	mV	22	-1205	-127	-127.7	-137	-139.1	-142.3	-127.2	-134.2	-128.3	-126.3	196.3	-173.1	-165.5
Field Specific Conductance	umhos/cm	1632	1998	2196	2477	2332	1911	1832	2055	1994	2006	1778	1839	2120	1682
Field Temperature	deg C	13.8	16.33	16.3	13.7	12.7	15	16.2	13.6	12.6	14.4	16.6	12	15.4	12
Groundwater Elevation	feet	0	622.47	620.6	620.83	620.43	620.37	619.92	619.76	620.03	619.83	619.91	620.42	619.79	622.07
Oxygen, Dissolved	mg/L	1	0.27	0.9	0.23	0.3	0.1	0.26	0.12	0.05	0.37	0.11	0.26	0.07	0.27
Turbidity	NTU	25.9	3.67	10.26	4.43	2.63	0.16	3.08	3.11	0.09	0.13	2.72	0	0.98	4.12
Total Alkalinity as CaCO3	mg/L	620	--	--	--	--	850	800	--	880	--	880	940	800	--
Iron, dissolved	ug/L	--	--	--	--	--	44000	39000	--	41000	--	33000	32000	41000	50000
Manganese, dissolved	ug/L	--	--	--	--	--	5100	4800	--	5300	--	4100	4500	7000	--
Calcium, total	ug/L	--	--	--	--	--	--	280000	--	--	--	--	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	40000	--	44000	--	33000	33000	42000	--
Magnesium, total	ug/L	--	--	--	--	--	--	46000	--	50000	--	36000	41000	46000	--
Manganese, total	ug/L	--	--	--	--	--	--	4800	--	5500	--	4100	4400	5500	--
Potassium, total	ug/L	--	--	--	--	--	--	7100	--	6100	--	6200	7000	8300	--
Sodium, total	ug/L	--	--	--	--	--	--	110000	--	98000	--	140000	160000	140000	--
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	850	800	--	880	--	880	940	800	--
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	<7.6	<3.8	--	<4.6	--	<4.6	<4.6	<12	--
Arsenic, dissolved	ug/L	--	--	--	--	--	9.4	--	8.8	7.8	--	8.4	7.8	7	--
Molybdenum, dissolved	ug/L	--	--	--	--	--	<1.1	--	--	--	--	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-306A
Number of Sampling Dates: 9

Parameter Name	Units	5/19/2020	7/6/2020	8/18/2020	10/20/2020	4/9/2021	10/27/2021	4/4/2022	10/19/2022	4/11/2023
Boron	ug/L	290	340	--	280	280	240	260	290	--
Calcium	mg/L	83	82	--	76	78	80	78	77	--
Chloride	mg/L	7.8	7.1	7.4	7.2	7.2	7.7	6.3	5.8	--
Fluoride	mg/L	<0.23	<0.23	--	<0.23	<0.28	<0.28	<0.22	<0.22	--
Field pH	Std. Units	6.99	7.04	7.38	7.18	7.21	7.34	7.19	7.25	7.43
Sulfate	mg/L	44	40	41	41	39	42	43	34	--
Total Dissolved Solids	mg/L	610	360	--	350	350	280	330	350	--
Antimony	ug/L	<0.58	<0.51	--	--	<1.1	<1.1	<0.69	<0.69	--
Arsenic	ug/L	<0.88	<0.88	--	<0.88	<0.75	<0.75	<0.75	<0.75	<0.53
Barium	ug/L	61	58	--	58	62	59	61	62	--
Beryllium	ug/L	<0.27	<0.27	--	--	<0.27	<0.27	<0.27	<0.27	--
Cadmium	ug/L	<0.039	<0.049	--	<0.049	<0.051	<0.051	<0.055	<0.055	--
Chromium	ug/L	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	--
Cobalt	ug/L	0.33	0.18	--	0.22	0.17	0.21	0.19	<0.19	--
Lead	ug/L	<0.27	<0.11	--	<0.11	<0.21	0.32	<0.24	<0.24	--
Lithium	ug/L	<2.3	<2.5	--	<2.5	<2.5	<2.5	<2.5	<2.5	--
Mercury	ug/L	<0.1	<0.1	--	--	<0.15	<0.15	<0.11	--	--
Molybdenum	ug/L	<1.1	<1.1	<1.1	<1.1	<1.3	<1.3	<1.2	<1.2	<0.91
Selenium	ug/L	<1	<1	--	<1	<0.96	0.99	<0.96	<0.96	--
Thallium	ug/L	<0.26	<0.26	--	--	<0.26	<0.26	<0.26	<0.26	--
Total Radium	pCi/L	--	0.525	--	0.124	0.408	0.682	0.198	1.18	--
Radium-226	pCi/L	--	0.0377	--	-0.201	0.12	0.279	0.00526	0.193	--
Radium-228	pCi/L	--	0.487	--	0.124	0.288	0.403	0.192	0.99	--
pH at 25 Degrees C	Std. Units	7.4	7.5	--	7.4	7.4	7.4	7.4	7.5	--
Field Oxidation Potential	mV	-21.7	-55.8	21.2	-38.5	-8.5	78.8	192.7	-91.1	-93.3
Field Specific Conductance	umhos/cm	697	683	654	681	669	663	669	624.3	486.3
Field Temperature	deg C	14.6	15.3	15.5	14.4	14.2	14.6	13	14	13.7
Groundwater Elevation	feet	620.4	621.66	620.63	620.17	620.14	620.17	620.61	620.05	622.68
Oxygen, Dissolved	mg/L	1.18	1.24	1.16	1.3	1.68	1.23	1.13	1.3	0.67
Turbidity	NTU	4.15	1.4	2.71	1.56	0.01	0.59	0	3.21	0.83
Total Alkalinity as CaCO3	mg/L	--	--	330	320	320	330	350	350	--
Iron, dissolved	ug/L	--	--	1900	1600	1600	1500	1500	1400	1400
Manganese, dissolved	ug/L	--	--	1200	1100	1100	1000	1000	1000	--
Calcium, total	ug/L	--	--	--	85000	--	--	--	--	--
Iron, total	ug/L	--	--	--	1900	1800	1800	1700	1500	--
Magnesium, total	ug/L	--	--	--	37000	35000	33000	36000	32000	--
Manganese, total	ug/L	--	--	--	1100	1100	1000	1000	940	--
Potassium, total	ug/L	--	--	--	1200	1200	1200	1300	1000	--
Sodium, total	ug/L	--	--	--	11000	10000	9800	10000	9100	--
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	330	320	320	330	350	350	--
Carbonate Alkalinity as CaCO3	mg/L	--	--	<7.6	<1.9	<4.6	<4.6	<4.6	<4.6	--
Arsenic, dissolved	ug/L	--	--	<0.88	--	--	<0.75	--	--	--
Molybdenum, dissolved	ug/L	--	--	<1.1	--	--	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-307
Number of Sampling Dates: 6

Parameter Name	Units	7/12/2021	8/13/2021	10/27/2021	4/5/2022	10/18/2022	4/10/2023
Boron	ug/L	220	250	280	400	1100	1200
Calcium	mg/L	55	47	38	50	39	38
Chloride	mg/L	15	16	17	22	18	23
Fluoride	mg/L	<0.28	<0.28	<0.28	<0.22	<0.22	<0.38
Field pH	Std. Units	8.25	7.86	8.11	8.34	8.44	8.36
Sulfate	mg/L	44	42	70	76	120	45
Total Dissolved Solids	mg/L	210	230	130	210	900	160
Antimony	ug/L	<1.1	<1.1	<1.1	<0.69	<0.69	<1
Arsenic	ug/L	2.1	2.4	2.5	1.8	2.7	2.5
Barium	ug/L	310	300	240	290	280	230
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33
Cadmium	ug/L	<0.051	<0.051	<0.051	<0.055	<0.055	<0.1
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	0.15	0.15	<0.19	<0.19	0.19	<0.17
Lead	ug/L	<0.21	<0.21	<0.21	<0.24	<0.24	<0.24
Lithium	ug/L	13	13	12	10	13	11
Mercury	ug/L	<0.15	<0.15	<0.15	<0.11	--	<0.14
Molybdenum	ug/L	5.5	7.2	12	16	25	7.8
Selenium	ug/L	<0.96	<0.96	<0.96	<0.96	<0.96	<1.4
Thallium	ug/L	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.499	1.91	0.743	0.183	1.51	0.165
Radium-226	pCi/L	0.171	0.289	0.421	0.0893	0.166	0.165
Radium-228	pCi/L	0.328	1.62	0.322	0.0932	1.34	-0.128
pH at 25 Degrees C	Std. Units	8.2	8.1	8.2	8.2	8.1	8.6
Field Oxidation Potential	mV	-40.6	-17.5	-123.4	198.2	-175.6	-150.4
Field Specific Conductance	umhos/cm	449.6	437	361.2	460	399.6	312.4
Field Temperature	deg C	15.2	17.4	16.4	6.9	15.7	8
Groundwater Elevation	feet	630.95	630.01	634.9	639.74	639.23	629.13
Oxygen, Dissolved	mg/L	0.47	0.17	0.93	0.08	0.16	0.28
Turbidity	NTU	0	0	0	0	4.34	0
Total Alkalinity as CaCO3	mg/L	170	--	86	130	100	--
Iron, dissolved	ug/L	110	--	110	87	90	68
Manganese, dissolved	ug/L	300	--	240	560	450	--
Iron, total	ug/L	140	--	95	78	110	--
Magnesium, total	ug/L	17000	--	12000	17000	11000	--
Manganese, total	ug/L	310	--	230	590	430	--
Potassium, total	ug/L	3600	--	2600	2400	2900	--
Sodium, total	ug/L	13000	--	11000	16000	24000	--
Bicarbonate Alkalinity as CaCO3	mg/L	170	--	86	130	100	--
Carbonate Alkalinity as CaCO3	mg/L	<4.1	--	<2.3	<4.6	<4.6	--
Arsenic, dissolved	ug/L	2	--	2.6	--	--	--
Molybdenum, dissolved	ug/L	5.2	--	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-307A
Number of Sampling Dates: 6

Parameter Name	Units	7/12/2021	8/13/2021	10/27/2021	4/5/2022	10/18/2022	4/10/2023
Boron	ug/L	370	380	300	430	680	--
Calcium	mg/L	67	62	70	58	52	--
Chloride	mg/L	6.8	7.2	8.1	13	11	--
Fluoride	mg/L	<0.28	<0.28	<0.28	<0.22	<0.22	--
Field pH	Std. Units	7.83	7.35	7.29	7.48	7.59	7.33
Sulfate	mg/L	30	32	33	28	27	--
Total Dissolved Solids	mg/L	280	290	230	250	270	--
Antimony	ug/L	<1.1	<1.1	<1.1	<0.69	<0.69	--
Arsenic	ug/L	<0.75	0.76	1.3	2.1	1.9	0.65
Barium	ug/L	120	120	130	110	100	--
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27	<0.27	--
Cadmium	ug/L	<0.051	<0.051	<0.051	<0.055	<0.055	--
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	--
Cobalt	ug/L	0.54	0.57	0.77	0.68	0.65	--
Lead	ug/L	<0.21	<0.21	0.21	<0.24	<0.24	--
Lithium	ug/L	<2.5	<2.5	<2.5	<2.5	<2.5	--
Mercury	ug/L	<0.15	<0.15	<0.15	<0.11	--	--
Molybdenum	ug/L	6.8	6.6	6.3	5.7	6.6	7.6
Selenium	ug/L	<0.96	<0.96	<0.96	<0.96	<0.96	--
Thallium	ug/L	<0.26	<0.26	<0.26	<0.26	<0.26	--
Total Radium	pCi/L	0.509	0.258	0.957	0.0954	0.683	--
Radium-226	pCi/L	0.265	0.163	0.412	0.0954	0.0963	--
Radium-228	pCi/L	0.245	0.0954	0.545	-0.076	0.587	--
pH at 25 Degrees C	Std. Units	7.5	7.6	7.6	8.1	7.7	--
Field Oxidation Potential	mV	73.1	54.3	47.7	199.8	-99.4	-13.8
Field Specific Conductance	umhos/cm	615.6	612.3	625.4	563	518.7	521.2
Field Temperature	deg C	13.2	12.5	12.9	10.8	11.4	11.6
Groundwater Elevation	feet	625.27	625.48	626.25	626.72	625.77	617.75
Oxygen, Dissolved	mg/L	0.27	0.17	1.39	0.09	0.1	0.15
Turbidity	NTU	0	0	0	0	2.57	0
Total Alkalinity as CaCO3	mg/L	310	--	310	330	270	--
Iron, dissolved	ug/L	<36	--	170	280	300	36
Manganese, dissolved	ug/L	600	--	720	700	640	--
Iron, total	ug/L	<36	--	160	370	330	--
Magnesium, total	ug/L	33000	--	33000	27000	24000	--
Manganese, total	ug/L	620	--	720	710	610	--
Potassium, total	ug/L	3000	--	2500	2100	2000	--
Sodium, total	ug/L	16000	--	14000	22000	28000	--
Bicarbonate Alkalinity as CaCO3	mg/L	310	--	310	330	270	--
Carbonate Alkalinity as CaCO3	mg/L	<4.2	--	<4.6	<4.6	<4.6	--
Arsenic, dissolved	ug/L	<0.75	--	1.4	--	--	--
Molybdenum, dissolved	ug/L	7.3	--	--	--	--	--

Appendix E

Statistical Evaluation

E1 – LCL Evaluation – October 2022

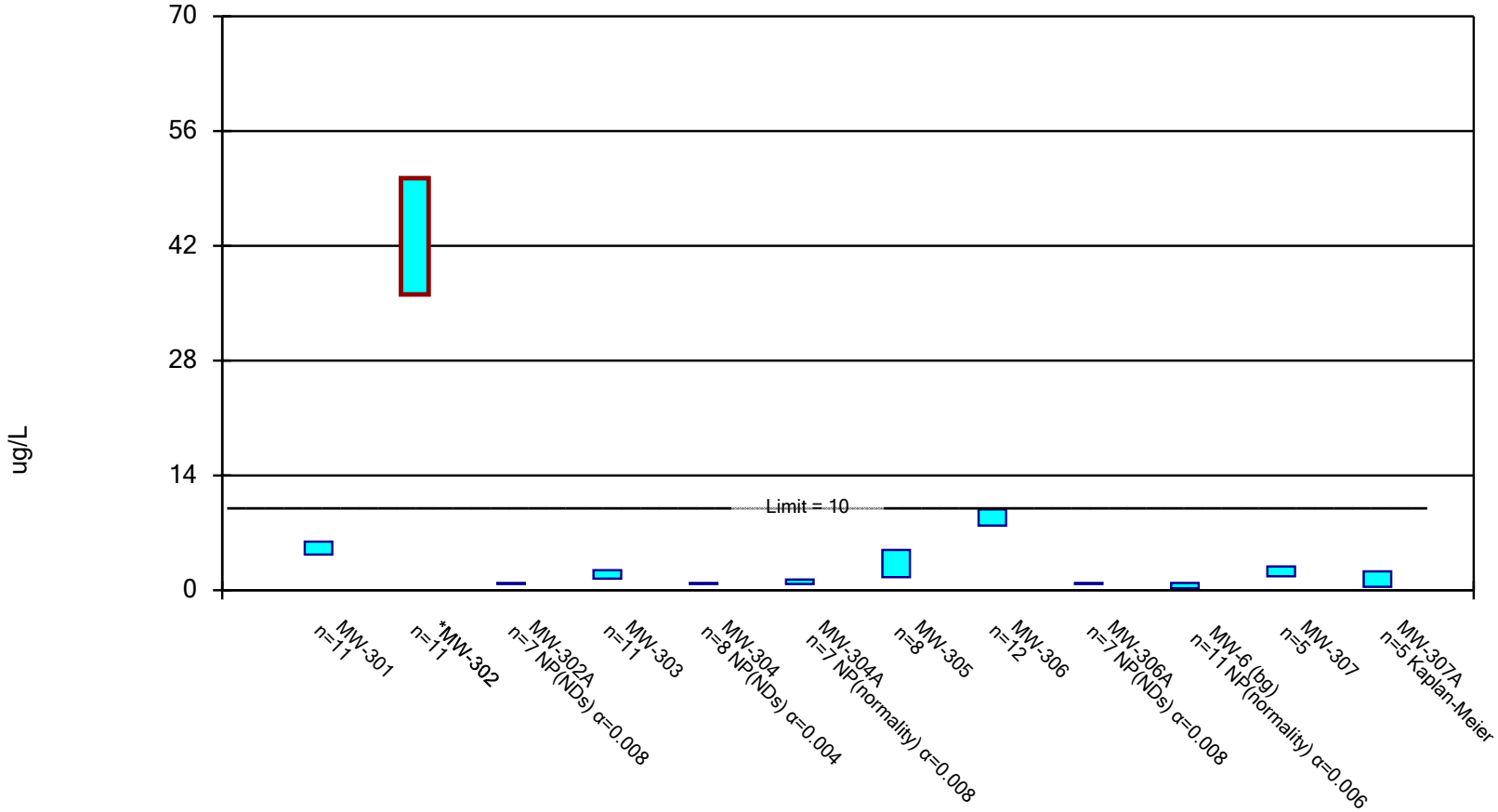
Confidence Interval

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev Printed 2/8/2023, 4:54 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (ug/L)	MW-301	5.923	4.35	10	No	11	0	None	No	0.01	Param.
Arsenic (ug/L)	**MW-302**	**50.25**	**36.08**	**10**	**Yes**	**11**	**0**	**None**	**No**	**0.01**	**Param.**
Arsenic (ug/L)	MW-302A	0.88	0.75	10	No	7	100	None	No	0.008	NP (NDs)
Arsenic (ug/L)	MW-303	2.452	1.403	10	No	11	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-304	0.88	0.75	10	No	8	100	None	No	0.004	NP (NDs)
Arsenic (ug/L)	MW-304A	1.3	0.75	10	No	7	71.43	None	No	0.008	NP (normality)
Arsenic (ug/L)	MW-305	4.913	1.584	10	No	8	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-306	9.858	7.876	10	No	12	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-306A	0.88	0.75	10	No	7	100	None	No	0.008	NP (NDs)
Arsenic (ug/L)	MW-6 (bg)	0.88	0.24	10	No	11	72.73	None	No	0.006	NP (normality)
Arsenic (ug/L)	MW-307	2.892	1.708	10	No	5	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-307A	2.302	0.4216	10	No	5	20	Kapla...	No	0.01	Param.

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on



Constituent: Arsenic Analysis Run 2/8/2023 4:53 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Confidence Interval

Constituent: Arsenic (ug/L) Analysis Run 2/8/2023 4:54 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
4/16/2018	3.9	30.8		1.2					
4/26/2018									
8/7/2018	4.4	47.6		2.3					
10/8/2018	5.4	50.4		2.3					
4/15/2019	5.4	37		1.4 (J)					
6/20/2019					<0.75 (U)		2.2	8.6	
10/2/2019	5.6	53		2.5	<0.75 (U)		3.4	12	
12/5/2019								9.3	
2/5/2020								9.4	
5/19/2020	3.8			1.4 (J)			3.6	8.5	<0.88 (U)
5/20/2020		33	<0.88 (U)		<0.88 (U)	1.3 (J)			
7/6/2020			<0.88 (U)			<0.88 (U)			<0.88 (U)
10/19/2020	6	48	<0.88 (U)	3.2	<0.88 (U)	<0.88 (U)			
10/20/2020							5.6	10	<0.88 (U)
2/23/2021								9	
4/7/2021									
4/8/2021	5			1.5 (J)					
4/9/2021		33	<0.75 (U)		<0.75 (U)	0.78 (J)	1.7 (J)	8	<0.75 (U)
7/12/2021								8.2	
8/13/2021									
10/26/2021	7.1			2.2	<0.75 (U)	<0.75 (U)			
10/27/2021		51	<0.75 (U)				3.9	8.6	<0.75 (U)
4/4/2022							0.89 (J)	7.7	<0.75 (U)
4/5/2022	4.9	40	<0.75 (U)	1.3 (J)	<0.75 (U)	<0.75 (U)			
4/6/2022									
10/17/2022	5		<0.75 (U)	1.9 (J)	<0.75 (U)	<0.75 (U)			
10/18/2022							4.7		
10/19/2022		51						7.1	<0.75 (U)
Mean	5.136	43.16	0.8057	1.927	0.7825	0.87	3.249	8.867	0.8057
Std. Dev.	0.9437	8.5	0.06949	0.6294	0.06018	0.1985	1.571	1.263	0.06949
Upper Lim.	5.923	50.25	0.88	2.452	0.88	1.3	4.913	9.858	0.88
Lower Lim.	4.35	36.08	0.75	1.403	0.75	0.75	1.584	7.876	0.75

ND substitution: RL or RL/2 if <15% NDs.

Confidence Interval

Constituent: Arsenic (ug/L) Analysis Run 2/8/2023 4:54 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
4/16/2018			
4/26/2018	0.23 (J)		
8/7/2018	0.26 (J)		
10/8/2018	0.24 (J)		
4/15/2019	<0.75 (U)		
6/20/2019			
10/2/2019	<0.75 (U)		
12/5/2019			
2/5/2020			
5/19/2020			
5/20/2020	<0.88 (U)		
7/6/2020			
10/19/2020			
10/20/2020	<0.88 (U)		
2/23/2021			
4/7/2021	<0.75 (U)		
4/8/2021			
4/9/2021			
7/12/2021		2.1	<0.75 (U)
8/13/2021		2.4	0.76 (J)
10/26/2021	<0.75 (U)		
10/27/2021		2.5	1.3 (J)
4/4/2022			
4/5/2022		1.8 (J)	2.1
4/6/2022	<0.75 (U)		
10/17/2022			
10/18/2022	<0.75 (U)	2.7	1.9 (J)
10/19/2022			
Mean	0.6355	2.3	1.362
Std. Dev.	0.2569	0.3536	0.6275
Upper Lim.	0.88	2.892	2.302
Lower Lim.	0.24	1.708	0.4216

ND substitution: RL or RL/2 if <15% NDs.

E2 – Updated Statistical Evaluation of Background

January 4, 2022
File No. 25222070.00

TECHNICAL MEMORANDUM

SUBJECT: Statistical Evaluation of Groundwater Monitoring Results – UPL Update and Tolerance Limit Calculation
Lansing Generating Station (LAN)

PREPARED BY: Nicole Kron

CHECKED BY: Sherren Clark

STATISTICAL METHOD

For comparison to background, groundwater monitoring data for the multiunit system at the Lansing Generating Station (LAN) are evaluated in accordance with 40 CFR 257.93(f)(3), using a prediction interval procedure, in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper prediction limit (UPL).

For assessment monitoring parameters, groundwater monitoring data is also evaluated by comparing the lower confidence limit (LCL) for the arithmetic mean of the monitoring results to the Groundwater Protection Standard (GPS) established in accordance with 40 CFR 257.95(h).

Statistical evaluation is performed using commercially available software (*Sanitas for Groundwater*© or similar) in general accordance with the U. S. Environmental Protection Agency's (U. S. EPA's) *Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities* dated March 2009 (Unified Guidance) (U. S. EPA, 2009) and generally accepted procedures.

Under the interwell approach for comparison to background, monitoring results are compared to UPLs and upper tolerance limits (UTLs) calculated based on background monitoring results from the background well: MW-6.

Compliance wells for the former ash pond include MW-301, MW-302, and MW-303. Delineation wells were installed to support the selection of remedy at LAN: MW- 302A, MW-304, MW-305, MW-306, MW-306A, MW-307, and MW-307A.

The initial UPLs were calculated based on eight rounds of background monitoring performed prior to the initiation of compliance monitoring for the LAN, from December 2015 through August 2017. Since then, additional rounds of monitoring for Appendix III and IV parameters have been performed at the background wells. As part of the evaluation of the 2022 monitoring results, the background data set for the UPL and UTL calculations is being updated to include data from the background well collected through October 2022. This memo addresses updated UPLs for Appendix III parameters and UTLs for Appendix IV parameters.

TIME SERIES PLOTS

Time series plots are prepared for the monitoring parameters to show concentration variations over time. Time series graphs are included in **Attachment 1**. In the graphs, non-detect values are shown with hollow symbols, while detected values have solid symbols. For some Appendix IV parameters, many or all background results are non-detect, but detection limits may have increased or decreased since the earliest data were collected.

OUTLIER ANALYSIS - INTERWELL

For interwell analysis, an outlier evaluation is performed for background monitoring results at the upgradient wells. A statistical outlier is a value that is extremely different from the other values in the data set. The Sanitas outlier tests identify data points that do not appear to fit the distribution of the rest of the data set and determine if they differ significantly from the rest of the data. The outlier analysis performed in Sanitas includes the following steps:

1) Run normality test (Shapiro Wilk/Francia).

2) If normally distributed, run U. S. EPA's 1989 Outlier Test to identify suspected outliers.
   a) If number of background samples is less than or equal to 25, run Dixon's test for suspected outliers.
   b) If number of background samples is more than 25, run Rosner's test for suspected outliers.

3) If not normally distributed, run Tukey's test for outliers.

4) Review data flagged as possible outliers to evaluate whether they should be removed from the background data set. Also review time series plots for possible outliers that were not picked up in the statistical evaluation (e.g., an outlier test may not identify outliers when two values are similar to each other, but very different from all other data).

Results identified as statistical outliers are checked for possible lab instrument failure, field collection problems, or data entry errors; however, outliers may exist naturally in the data if there is an extremely wide inherent or temporal variability in the data. The Unified Guidance states that unless a likely error can be identified, the outlier should not be removed.

Data listed with an X flag on the data page of the Sanitas output, if any, were previously excluded as outliers, but were included in the outlier analysis to reevaluate whether they should continue to be excluded from UPL and UTL calculations. After the outlier analysis is complete, any data selected to be excluded from the UPL and UTL calculations, as described below, are flagged with an X for exclusion

For the evaluation of interwell background data collected through the October 2022 sampling event, the following background values were identified by Sanitas as potential outliers and handled as described:

- **Cadmium (MW-6):** One high cadmium result from December 2015 was flagged as a statistical outlier. The result was kept in the dataset because the result was a non-detect and the higher value represents a somewhat higher detection limit, not a detected cadmium concentration.

- **Lead (MW-6):** One high lead result from December 2015 was flagged as a statistical outlier. The result was kept in the dataset because the result was a non-detect and the higher value represents a somewhat higher detection limit, not a detected lead concentration.

- **Total Dissolved Solids (MW-6):** One high total dissolved solids (TDS) result from the May 2020 sampling event was flagged as a statistical outlier. The result was kept in the dataset because it did not appear to represent lab or sampling error and it appears to fall within a possible range for this parameter.

Outlier analysis results are included in **Attachment 2.**

BACKGROUND UPDATE

The background data pool was updated in accordance with the Unified Guidance, which recommends updating background every 2 to 3 years for semiannual sampling. Prior to expanding the data pool, the original background data set (December 2015 through August 2017) and the data to be added (October 2017 through October 2022) were compared. The Unified Guidance states that recently collected measurements from the background wells can be added to the existing pool if a Student's t-test or Wilcoxon rank-sum test finds no significant difference between the two groups at the 1 percent level of significance.

The Sanitas background group comparison for the LAN background data sets, included in **Attachment 3**, indicated no significant difference at the 1 percent level, except for antimony, beryllium, fluoride, molybdenum, and mercury where most results were non-detect and the shift reflected a change in detection limits. Based on these results, the recent data can be added to the background pool. The comparison uses Welch's t-test for normally distributed data and the Mann-Whitney test for non-normal data.

INTERWELL PREDICTION LIMITS

Interwell prediction limits for Appendix III parameters are calculated using background data from the upgradient monitoring well (MW-6) for each monitored constituent, with outliers removed as noted above. During this evaluation of compliance monitoring, groundwater results from December 2015 through October 2022 were included to calculate the interwell prediction limits. The prediction limit analysis performed in Sanitas includes the following steps:

1) If 100 percent of the background values are non-detect, the Double Quantification rule applies and no prediction limit is calculated.

2) If more than 50 percent of results are non-detect, then a non-parametric prediction limit is calculated.

3) If 50 percent or fewer of the results are non-detect, run normality test (Shapiro Wilk/Francia) to assess whether the data fit a normal distribution or can be transformed to fit a normal distribution (e.g., lognormal).

4) If normal or transformed normal, calculate parametric prediction limit.

5) If not normal or transformed normal, calculate non-parametric prediction limit.

Consistent with the Unified Guidance, parametric prediction limits are calculated based on a 1-of-2 retesting protocol and a 10 percent site-wide false positive rate. Sanitas establishes the per-test significance level based on user inputs of the number of events per year, number of constituents being evaluated, and number of compliance wells. For this update, the following values were used:

Parameter	Value	Comments
Evaluations per year	2	April and October events
Constituents analyzed	7	Total of 7 Appendix III constituents
Compliance wells	3	Three compliance wells at the waste boundary

Non-parametric prediction limits are also based on a 1-of-2 retesting protocol.

For results with 100 percent non-detects in the background data, if any, evaluation under the Double Quantification Rule means that a statistically significant increase (SSI) has not occurred for a compliance well unless two sample results from the well exceed the laboratory's reporting limit or quanitification limit. All of the Appendix III constituents were detected at least one in the background wells; therefore, UPLs were calculated for all. Although UPLs were calculated for all Appendix III constituents, a future result will not be identified as an SSI unless two sample results exceed both the UPL and the reporting limit or quantification limit.

For evaluation of parameters with less than 100 percent non-detects in the background sampling, the non-detects were adjusted using the Kaplan-Meier technique, unless the non-detects represent less than 15 percent of the total samples, in which case one-half of the detection limit was used.

Interwell prediction limit analysis Appendix III results are included in **Attachment 4**.

INTERWELL TOLERANCE LIMITS

Interwell tolerance limits for Appendix IV parameters were calculated using background data from the upgradient monitoring well (MW-6) for each monitored constituent, with outliers removed as noted above. During this evaluation of compliance monitoring, groundwater results from December 2015 through October 2022 were included to calculate the interwell tolerance limits. The tolerance limit analysis was performed in Sanitas, including the same five steps listed above. Management of non-detect results in the background data was also the same as described above for prediction limits. As recommended in the Unified Guidance, the UTL was calculated with 95 percent confidence and 95 percent coverage.

Interwell tolerance limits analysis results are included in **Attachment 5**.

NDK/AJR/SCC

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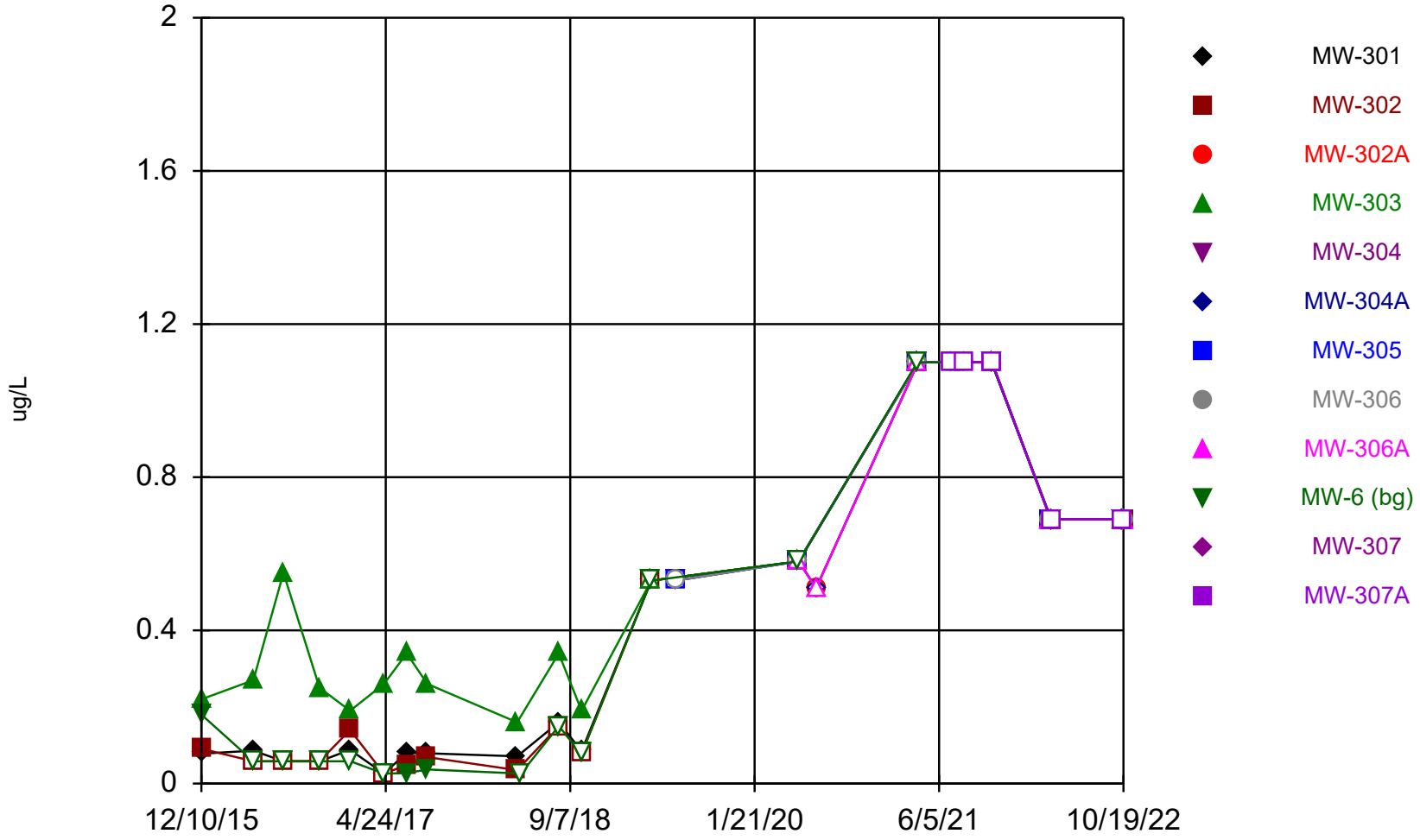
Attachment 1

Time Series Plots

Hollow symbols indicate censored values.

Antimony



Time Series Analysis Run 12/16/2022 12:14 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Antimony (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	0.078 (J)	0.091 (J)		0.22 (J)					
4/29/2016	0.086 (J)	<0.058 (U)		0.27 (J)					
7/20/2016	<0.058 (U)	<0.058 (U)		0.55 (J)					
10/26/2016	<0.058 (U)	<0.058 (U)		0.25 (J)					
10/27/2016									
1/17/2017	0.088 (J)	0.14 (J)		0.19 (J)					
1/18/2017									
4/19/2017	<0.026 (U)	<0.026 (U)		0.26 (J)					
6/19/2017	0.08 (J)	0.048 (J)							
6/20/2017				0.34 (J)					
8/15/2017	0.079 (J)	0.069 (J)		0.26 (J)					
4/16/2018	0.071 (J)	0.035 (J)		0.16 (J)					
4/26/2018									
8/7/2018	0.16 (J)	<0.15 (U)		0.34 (J)					
10/8/2018	0.085 (J)	<0.078 (U)		0.19 (J)					
4/15/2019	<0.53 (U)	<0.53 (U)		<0.53 (U)					
6/20/2019					<0.53 (U)		<0.53 (U)	<0.53 (U)	
5/19/2020	<0.58 (U)			<0.58 (U)			<0.58 (U)	<0.58 (U)	<0.58 (U)
5/20/2020		<0.58 (U)	<0.58 (U)		<0.58 (U)	<0.58 (U)			
7/6/2020			<0.51 (U)			<0.51 (U)			<0.51 (U)
4/7/2021									
4/8/2021	<1.1 (U)			<1.1 (U)					
4/9/2021		<1.1 (U)	<1.1 (U)		<1.1 (U)	<1.1 (U)	<1.1 (U)	<1.1 (U)	<1.1 (U)
7/12/2021									
8/13/2021									
10/26/2021	<1.1 (U)			<1.1 (U)	<1.1 (U)	<1.1 (U)			
10/27/2021		<1.1 (U)	<1.1 (U)				<1.1 (U)	<1.1 (U)	<1.1 (U)
4/4/2022							<0.69 (U)	<0.69 (U)	<0.69 (U)
4/5/2022	<0.69 (U)	<0.69 (U)	<0.69 (U)	<0.69 (U)	<0.69 (U)	<0.69 (U)			
4/6/2022									
10/17/2022	<0.69 (U)		<0.69 (U)	<0.69 (U)	<0.69 (U)	<0.69 (U)			
10/18/2022							<0.69 (U)		
10/19/2022		<0.69 (U)						<0.69 (U)	<0.69 (U)

ND substitution: RL or RL/2 if <15% NDs.

Time Series

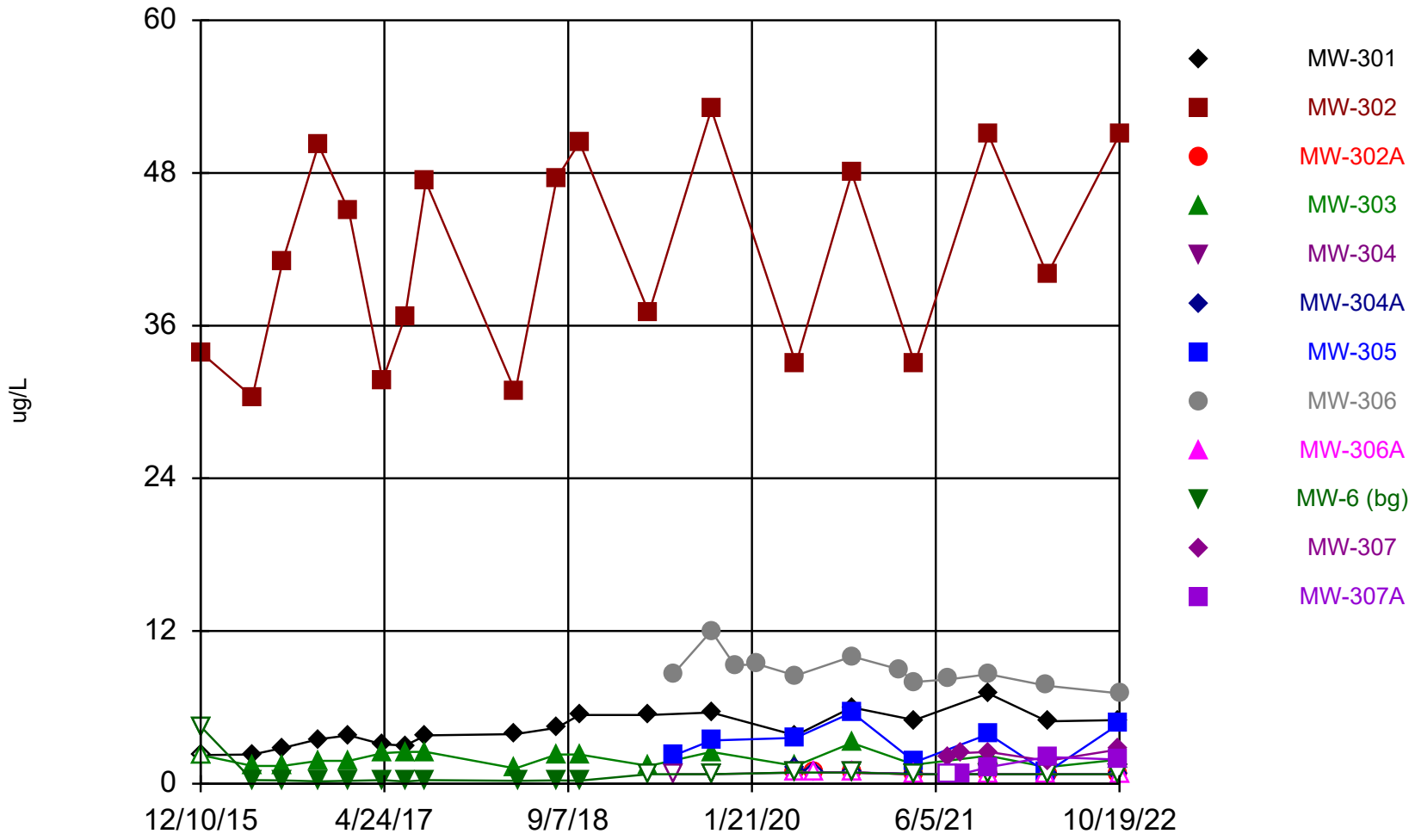
Constituent: Antimony (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	0.18 (J)		
4/29/2016	<0.058 (U)		
7/20/2016	<0.058 (U)		
10/26/2016			
10/27/2016	<0.058 (U)		
1/17/2017			
1/18/2017	<0.058 (U)		
4/19/2017	<0.026 (U)		
6/19/2017	0.027 (J)		
6/20/2017			
8/15/2017	0.037 (J)		
4/16/2018			
4/26/2018	<0.026 (U)		
8/7/2018	<0.15 (U)		
10/8/2018	<0.078 (U)		
4/15/2019	<0.53 (U)		
6/20/2019			
5/19/2020			
5/20/2020	<0.58 (U)		
7/6/2020			
4/7/2021	<1.1 (U)		
4/8/2021			
4/9/2021			
7/12/2021		<1.1 (U)	<1.1 (U)
8/13/2021		<1.1	<1.1
10/26/2021	<1.1 (U)		
10/27/2021		<1.1 (U)	<1.1 (U)
4/4/2022			
4/5/2022		<0.69 (U)	<0.69 (U)
4/6/2022	<0.69 (U)		
10/17/2022			
10/18/2022	<0.69 (U)	<0.69 (U)	<0.69 (U)
10/19/2022			

ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Arsenic



Time Series Analysis Run 12/16/2022 12:14 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Arsenic (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	<4.5 (U)	33.9		<4.5 (U)					
4/29/2016	2.3	30.4		1.4					
7/20/2016	2.8	41		1.4					
10/26/2016	3.5	50.2		1.8					
10/27/2016									
1/17/2017	3.8	45		1.8					
1/18/2017									
4/19/2017	3.1	31.7		2.4					
6/19/2017	3	36.7							
6/20/2017				2.5					
8/15/2017	3.8	47.3		2.5					
4/16/2018	3.9	30.8		1.2					
4/26/2018									
8/7/2018	4.4	47.6		2.3					
10/8/2018	5.4	50.4		2.3					
4/15/2019	5.4	37		1.4 (J)					
6/20/2019					<0.75 (U)		2.2	8.6	
10/2/2019	5.6	53		2.5	<0.75 (U)		3.4	12	
12/5/2019								9.3	
2/5/2020								9.4	
5/19/2020	3.8			1.4 (J)			3.6	8.5	<0.88 (U)
5/20/2020		33	<0.88 (U)		<0.88 (U)	1.3 (J)			
7/6/2020			<0.88 (U)			<0.88 (U)			<0.88 (U)
10/19/2020	6	48	<0.88 (U)	3.2	<0.88 (U)	<0.88 (U)			
10/20/2020							5.6	10	<0.88 (U)
2/23/2021								9	
4/7/2021									
4/8/2021	5			1.5 (J)					
4/9/2021		33	<0.75 (U)		<0.75 (U)	0.78 (J)	1.7 (J)	8	<0.75 (U)
7/12/2021								8.2	
8/13/2021									
10/26/2021	7.1			2.2	<0.75 (U)	<0.75 (U)			
10/27/2021		51	<0.75 (U)				3.9	8.6	<0.75 (U)
4/4/2022							0.89 (J)	7.7	<0.75 (U)
4/5/2022	4.9	40	<0.75 (U)	1.3 (J)	<0.75 (U)	<0.75 (U)			
4/6/2022									
10/17/2022	5		<0.75 (U)	1.9 (J)	<0.75 (U)	<0.75 (U)			
10/18/2022							4.7		
10/19/2022		51						7.1	<0.75 (U)

ND substitution: RL or RL/2 if <15% NDs.

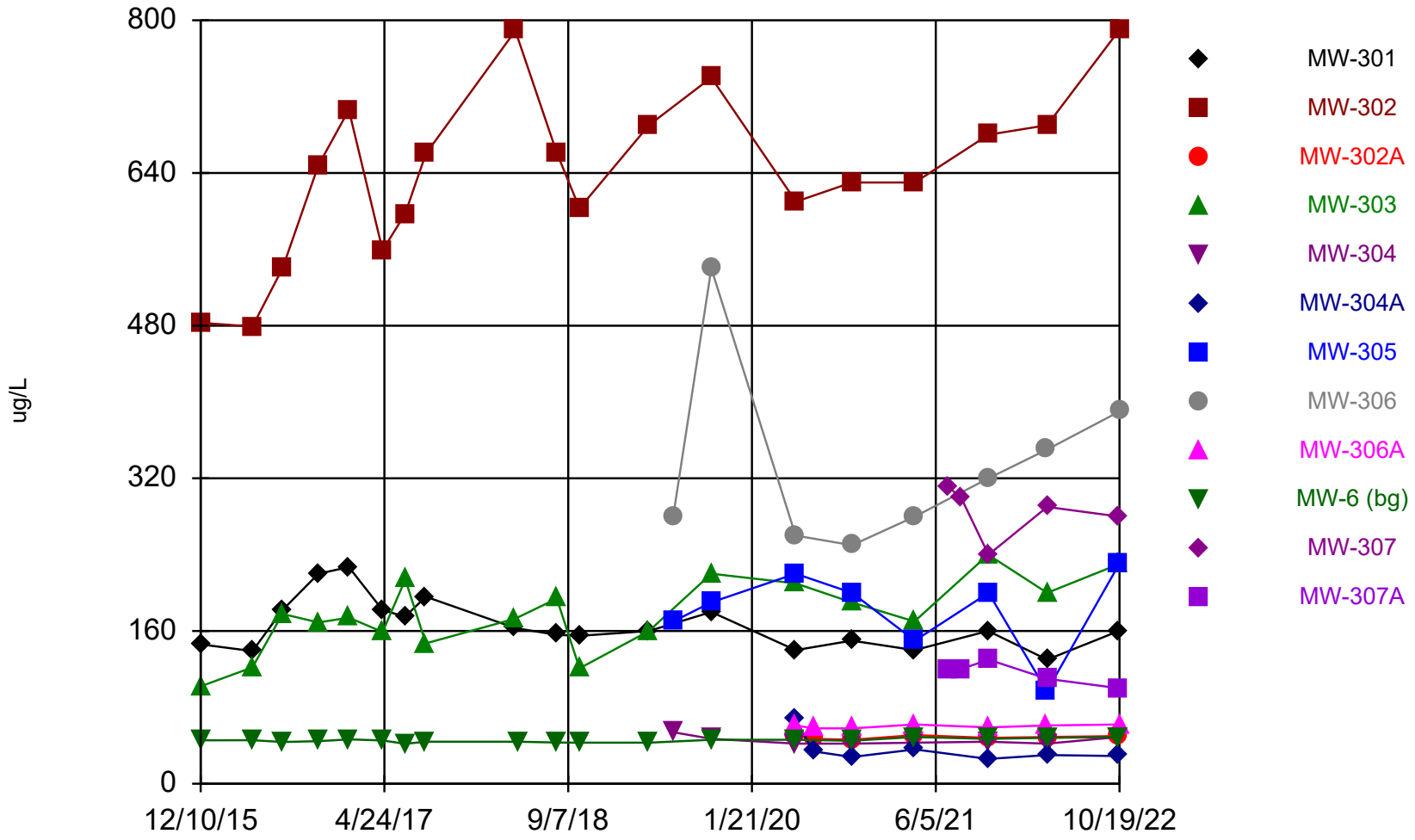
Time Series

Constituent: Arsenic (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	<4.5 (U)		
4/29/2016	0.28 (J)		
7/20/2016	0.26 (J)		
10/26/2016			
10/27/2016	0.19 (J)		
1/17/2017			
1/18/2017	0.23 (J)		
4/19/2017	0.28 (J)		
6/19/2017	0.18 (J)		
6/20/2017			
8/15/2017	0.28 (J)		
4/16/2018			
4/26/2018	0.23 (J)		
8/7/2018	0.26 (J)		
10/8/2018	0.24 (J)		
4/15/2019	<0.75 (U)		
6/20/2019			
10/2/2019	<0.75 (U)		
12/5/2019			
2/5/2020			
5/19/2020			
5/20/2020	<0.88 (U)		
7/6/2020			
10/19/2020			
10/20/2020	<0.88 (U)		
2/23/2021			
4/7/2021	<0.75 (U)		
4/8/2021			
4/9/2021			
7/12/2021		2.1	<0.75 (U)
8/13/2021		2.4	0.76 (J)
10/26/2021	<0.75 (U)		
10/27/2021		2.5	1.3 (J)
4/4/2022			
4/5/2022		1.8 (J)	2.1
4/6/2022	<0.75 (U)		
10/17/2022			
10/18/2022	<0.75 (U)	2.7	1.9 (J)
10/19/2022			

ND substitution: RL or RL/2 if <15% NDs.

Barium



Time Series Analysis Run 12/16/2022 12:14 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Barium (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	146	483		102					
4/29/2016	139	479		122					
7/20/2016	182	540		178					
10/26/2016	220	648		169					
10/27/2016									
1/17/2017	227	706		174					
1/18/2017									
4/19/2017	182	559		159					
6/19/2017	175	597							
6/20/2017				214					
8/15/2017	196	660		147					
4/16/2018	163	789		173					
4/26/2018									
8/7/2018	156	661		194					
10/8/2018	155	603		121					
4/15/2019	160	690		160					
6/20/2019					54		170	280	
10/2/2019	180	740		220	47		190	540	
5/19/2020	140			210			220	260	61
5/20/2020		610	51		42	67			
7/6/2020			47			34			58
10/19/2020	150	630	46	190	42	28			
10/20/2020							200	250	58
4/7/2021									
4/8/2021	140 (B)			170 (B)					
4/9/2021		630 (B)	51 (B)		43 (B)	36 (B)	150 (B)	280 (B)	62 (B)
7/12/2021									
8/13/2021									
10/26/2021	160			240	44	26			
10/27/2021		680	48				200	320	59
4/4/2022							97	350	61
4/5/2022	130	690	49	200	42	30			
4/6/2022									
10/17/2022	160		50	230	49	29			
10/18/2022							230		
10/19/2022		790						390	62

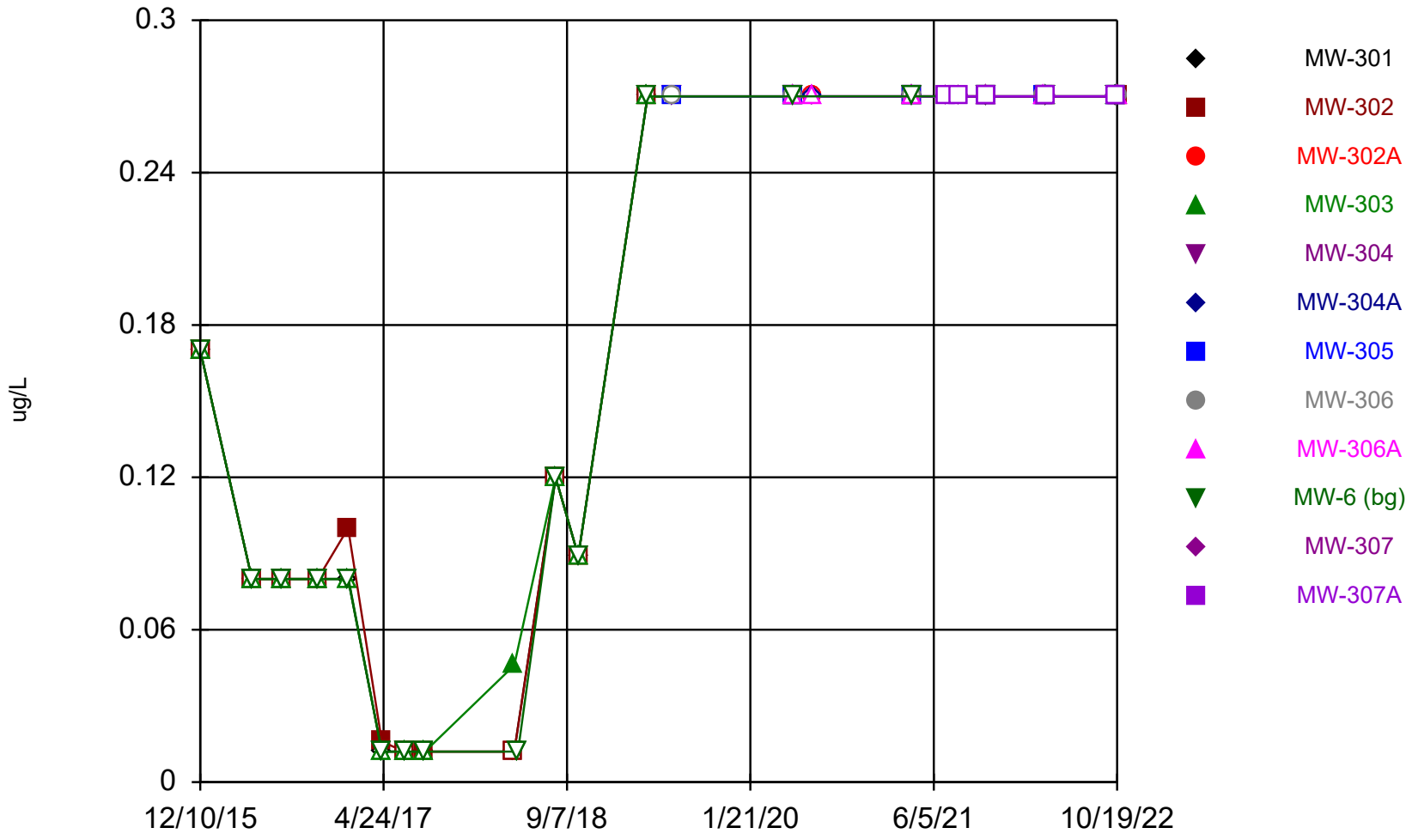
Time Series

Constituent: Barium (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	45.5		
4/29/2016	45.6		
7/20/2016	43.8		
10/26/2016			
10/27/2016	44.6		
1/17/2017			
1/18/2017	46.5		
4/19/2017	45.4		
6/19/2017	41.9		
6/20/2017			
8/15/2017	44		
4/16/2018			
4/26/2018	44.1		
8/7/2018	43.1		
10/8/2018	43		
4/15/2019	43		
6/20/2019			
10/2/2019	46		
5/19/2020			
5/20/2020	46		
7/6/2020			
10/19/2020			
10/20/2020	45		
4/7/2021	49 (B)		
4/8/2021			
4/9/2021			
7/12/2021		310	120
8/13/2021		300	120
10/26/2021	47		
10/27/2021		240	130
4/4/2022			
4/5/2022		290	110
4/6/2022	48		
10/17/2022			
10/18/2022	49	280	100
10/19/2022			

Hollow symbols indicate censored values.

Beryllium



Time Series Analysis Run 12/16/2022 12:14 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Beryllium (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	<0.17 (U)	<0.17 (U)		<0.17 (U)					
4/29/2016	<0.08 (U)	<0.08 (U)		<0.08 (U)					
7/20/2016	<0.08 (U)	<0.08 (U)		<0.08 (U)					
10/26/2016	<0.08 (U)	<0.08 (U)		<0.08 (U)					
10/27/2016									
1/17/2017	<0.08 (U)	0.1 (J)		<0.08 (U)					
1/18/2017									
4/19/2017	<0.012 (U)	0.016 (J)		<0.012 (U)					
6/19/2017	<0.012 (U)	<0.012 (U)							
6/20/2017				<0.012 (U)					
8/15/2017	<0.012 (U)	0.012 (J)		<0.012 (U)					
4/16/2018	<0.012 (U)	<0.012 (U)		0.046 (J)					
4/26/2018									
8/7/2018	<0.12 (U)	<0.12 (U)		<0.12 (U)					
10/8/2018	<0.089 (U)	<0.089 (U)		<0.089 (U)					
4/15/2019	<0.27 (U)	<0.27 (U)		<0.27 (U)					
6/20/2019					<0.27 (U)		<0.27 (U)	<0.27 (U)	
5/19/2020	<0.27 (U)			<0.27 (U)			<0.27 (U)	<0.27 (U)	<0.27 (U)
5/20/2020		<0.27 (U)	<0.27 (U)		<0.27 (U)	<0.27 (U)			
7/6/2020			<0.27 (U)			<0.27 (U)			<0.27 (U)
4/7/2021									
4/8/2021	<0.27 (U)			<0.27 (U)					
4/9/2021		<0.27 (U)	<0.27 (U)		<0.27 (U)	<0.27 (U)	<0.27 (U)	<0.27 (U)	<0.27 (U)
7/12/2021									
8/13/2021									
10/26/2021	<0.27 (U)			<0.27 (U)	<0.27 (U)	<0.27 (U)			
10/27/2021		<0.27 (U)	<0.27 (U)				<0.27 (U)	<0.27 (U)	<0.27 (U)
4/4/2022							<0.27 (U)	<0.27 (U)	<0.27 (U)
4/5/2022	<0.27 (U)	<0.27 (U)	<0.27 (U)	<0.27 (U)	<0.27 (U)	<0.27 (U)			
4/6/2022									
10/17/2022	<0.27 (U)		<0.27 (U)	<0.27 (U)	<0.27 (U)	<0.27 (U)			
10/18/2022							<0.27 (U)		
10/19/2022		<0.27 (U)						<0.27 (U)	<0.27 (U)

ND substitution: RL or RL/2 if <15% NDs.

Time Series

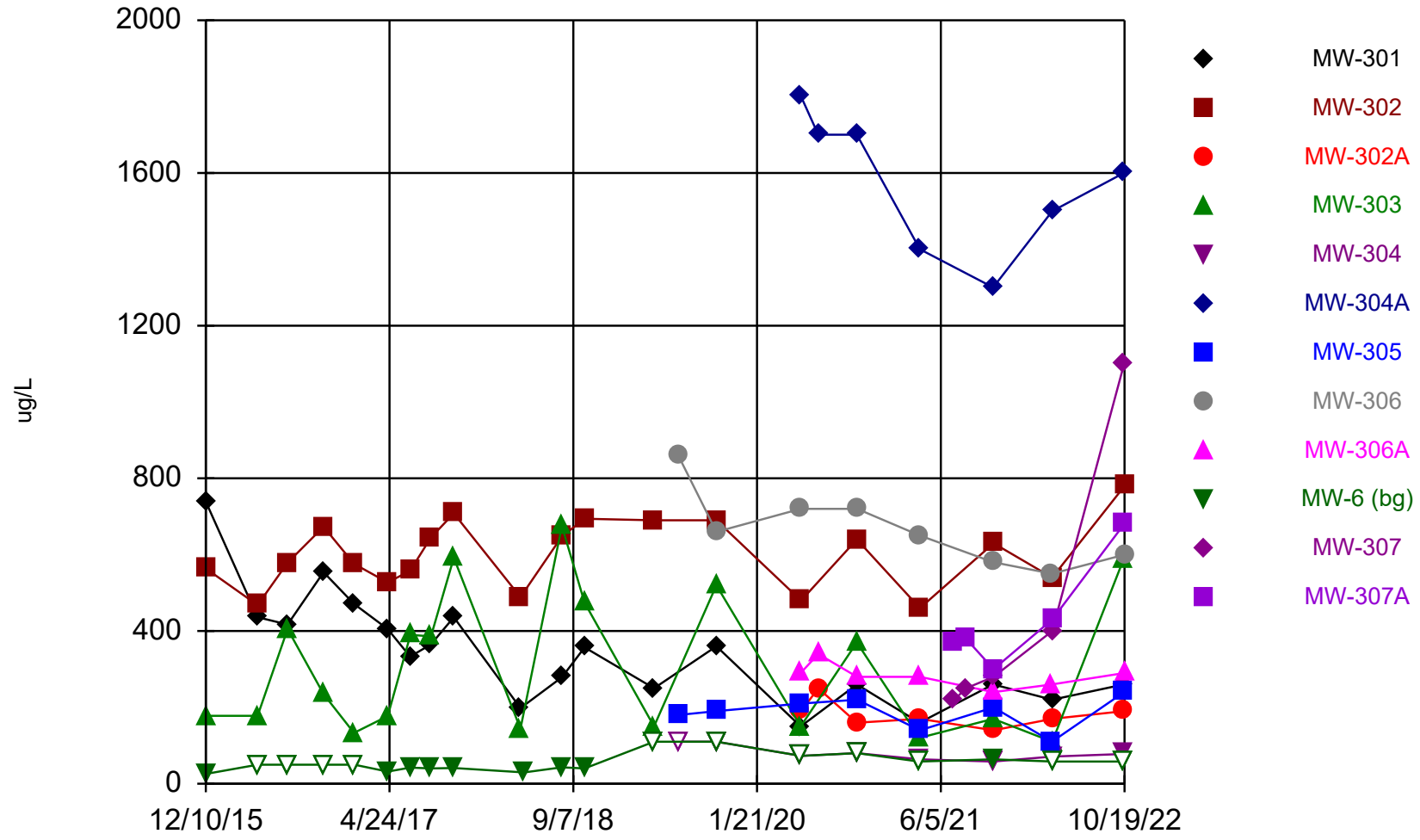
Constituent: Beryllium (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	<0.17 (U)		
4/29/2016	<0.08 (U)		
7/20/2016	<0.08 (U)		
10/26/2016			
10/27/2016	<0.08 (U)		
1/17/2017			
1/18/2017	<0.08 (U)		
4/19/2017	<0.012 (U)		
6/19/2017	<0.012 (U)		
6/20/2017			
8/15/2017	<0.012 (U)		
4/16/2018			
4/26/2018	<0.012 (U)		
8/7/2018	<0.12 (U)		
10/8/2018	<0.089 (U)		
4/15/2019	<0.27 (U)		
6/20/2019			
5/19/2020			
5/20/2020	<0.27 (U)		
7/6/2020			
4/7/2021	<0.27 (U)		
4/8/2021			
4/9/2021			
7/12/2021		<0.27 (U)	<0.27 (U)
8/13/2021		<0.27	<0.27
10/26/2021	<0.27 (U)		
10/27/2021		<0.27 (U)	<0.27 (U)
4/4/2022			
4/5/2022		<0.27 (U)	<0.27 (U)
4/6/2022	<0.27 (U)		
10/17/2022			
10/18/2022	<0.27 (U)	<0.27 (U)	<0.27 (U)
10/19/2022			

ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Boron



Time Series Analysis Run 12/16/2022 12:14 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Boron (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	739	564		178					
4/29/2016	436	468		178					
7/20/2016	417	579		405					
10/26/2016	554	673		235					
10/27/2016									
1/17/2017	471	576		133					
1/18/2017									
4/19/2017	405	527		177					
6/19/2017	333	558							
6/20/2017				390					
8/15/2017	365	645		386					
10/16/2017	436	708		592					
4/16/2018	198	489		144					
4/26/2018									
8/7/2018	279	648		675					
10/8/2018	357	694		474					
4/15/2019	250	690		150 (J)					
6/20/2019					<110 (U)		180 (J)	860	
10/2/2019	360	690		520	<110 (U)		190 (J)	660	
5/19/2020	150			150			210	720	290
5/20/2020		480	190		<73 (U)	1800			
7/6/2020			250			1700			340
10/19/2020	260	640	160	370	<80 (U)	1700			
10/20/2020							220	720	280
4/7/2021									
4/8/2021	160			120					
4/9/2021		460	170		64 (J)	1400	140	650	280
7/12/2021									
8/13/2021									
10/26/2021	260			170	<58 (U)	1300			
10/27/2021		630	140				200	580	240
4/4/2022							110	550	260
4/5/2022	220	540	170	110	71 (J)	1500			
4/6/2022									
10/17/2022	260		190	590	78 (J)	1600			
10/18/2022							240		
10/19/2022		780						600	290

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Boron (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	25.7 (J)		
4/29/2016	<50 (U)		
7/20/2016	<50 (U)		
10/26/2016			
10/27/2016	<50 (U)		
1/17/2017			
1/18/2017	<50 (U)		
4/19/2017	31.9 (J)		
6/19/2017	42.1 (J)		
6/20/2017			
8/15/2017	40 (J)		
10/16/2017	41.2 (J)		
4/16/2018			
4/26/2018	29.8 (J)		
8/7/2018	42.9 (J)		
10/8/2018	40.2 (J)		
4/15/2019	<110 (U)		
6/20/2019			
10/2/2019	<110 (U)		
5/19/2020			
5/20/2020	<73 (U)		
7/6/2020			
10/19/2020			
10/20/2020	<80 (U)		
4/7/2021	<58 (U)		
4/8/2021			
4/9/2021			
7/12/2021		220	370
8/13/2021		250	380
10/26/2021	64 (J)		
10/27/2021		280	300
4/4/2022			
4/5/2022		400	430
4/6/2022	<58 (U)		
10/17/2022			
10/18/2022	<58 (U)	1100	680
10/19/2022			

ND substitution: RL or RL/2 if <15% NDs.

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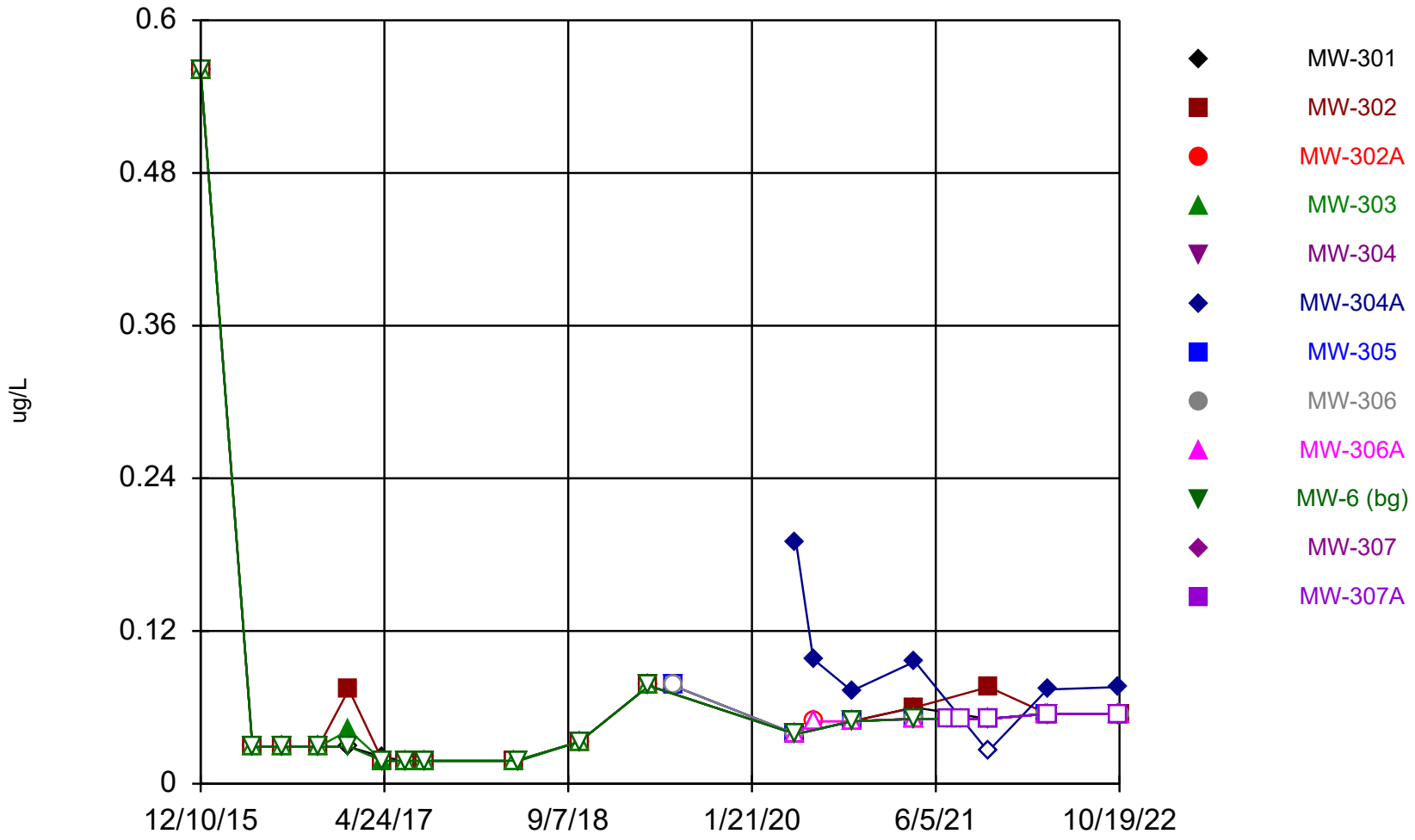
Hollow symbols indicate censored values.

Cadmium



Time Series Analysis Run 12/16/2022 12:14 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Cadmium (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	<0.56 (U)	<0.56 (U)		<0.56 (U)					
4/29/2016	<0.029 (U)	<0.029 (U)		<0.029 (U)					
7/20/2016	<0.029 (U)	<0.029 (U)		<0.029 (U)					
10/26/2016	<0.029 (U)	<0.029 (U)		<0.029 (U)					
10/27/2016									
1/17/2017	<0.029 (U)	0.074 (J)		0.042 (J)					
1/18/2017									
4/19/2017	0.021 (J)	<0.018 (U)		0.018 (J)					
6/19/2017	<0.018 (U)	<0.018 (U)							
6/20/2017				<0.018 (U)					
8/15/2017	<0.018 (U)	<0.018 (U)		<0.018 (U)					
4/16/2018	<0.018 (U)	<0.018 (U)		<0.018 (U)					
4/26/2018									
10/8/2018	<0.033 (U)	<0.033 (U)		<0.033 (U)					
4/15/2019	<0.077 (U)	<0.077 (U)		<0.077 (U)					
6/20/2019					<0.077 (U)		<0.077 (U)	<0.077 (U)	
5/19/2020	<0.039 (U)			<0.039 (U)			<0.039 (U)	<0.039 (U)	<0.039 (U)
5/20/2020		<0.039 (U)	<0.039 (U)		<0.039 (U)	0.19			
7/6/2020			<0.049 (U)			0.098 (J)			<0.049 (U)
10/19/2020	<0.049 (U)	<0.049 (U)	<0.049 (U)	<0.049 (U)	<0.049 (U)	0.073 (J)			
10/20/2020							<0.049 (U)	<0.049 (U)	<0.049 (U)
4/7/2021									
4/8/2021	0.06 (J)			<0.051 (U)					
4/9/2021		0.06 (J)	<0.051 (U)		<0.051 (U)	0.096 (J)	<0.051 (U)	<0.051 (U)	<0.051 (U)
7/12/2021									
8/13/2021									
10/26/2021	<0.051 (U)			<0.051 (U)	<0.051 (U)	<0.051 (U)			
10/27/2021		0.076 (J)	<0.051 (U)				<0.051 (U)	<0.051 (U)	<0.051 (U)
4/4/2022							<0.055 (U)	<0.055 (U)	<0.055 (U)
4/5/2022	<0.055 (U)	<0.055 (U)	<0.055 (U)	<0.055 (U)	<0.055 (U)	0.074 (J)			
4/6/2022									
10/17/2022	<0.055 (U)		<0.055 (U)	<0.055 (U)	<0.055 (U)	0.076 (J)			
10/18/2022							<0.055 (U)		
10/19/2022		<0.055 (U)						<0.055 (U)	<0.055 (U)

ND substitution: RL or RL/2 if <15% NDs.

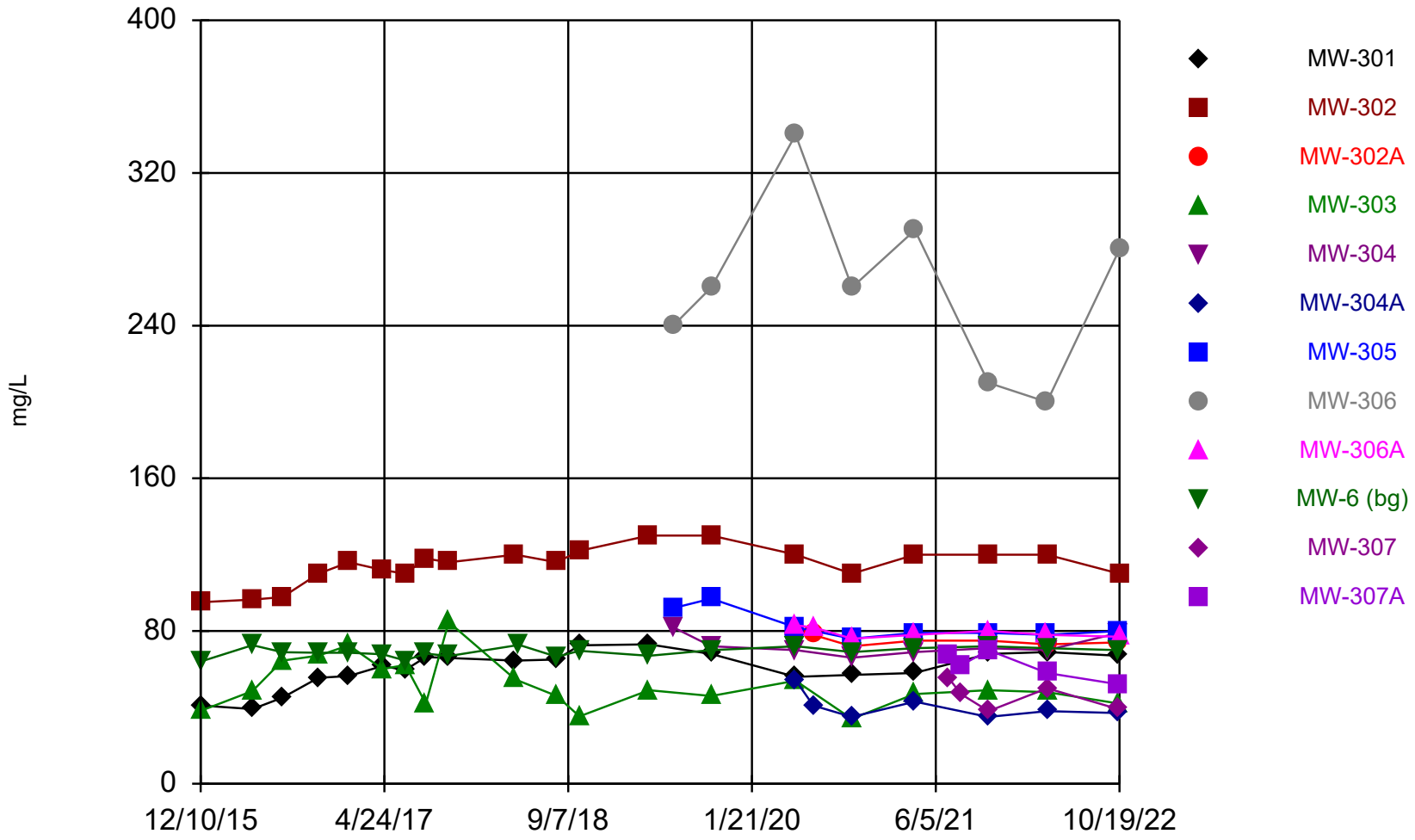
Time Series

Constituent: Cadmium (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	<0.56 (U)		
4/29/2016	<0.029 (U)		
7/20/2016	<0.029 (U)		
10/26/2016			
10/27/2016	<0.029 (U)		
1/17/2017			
1/18/2017	<0.029 (U)		
4/19/2017	<0.018 (U)		
6/19/2017	<0.018 (U)		
6/20/2017			
8/15/2017	<0.018 (U)		
4/16/2018			
4/26/2018	<0.018 (U)		
10/8/2018	<0.033 (U)		
4/15/2019	<0.077 (U)		
6/20/2019			
5/19/2020			
5/20/2020	<0.039 (U)		
7/6/2020			
10/19/2020			
10/20/2020	<0.049 (U)		
4/7/2021	<0.051 (U)		
4/8/2021			
4/9/2021			
7/12/2021		<0.051 (U)	<0.051 (U)
8/13/2021		<0.051	<0.051
10/26/2021	<0.051 (U)		
10/27/2021		<0.051 (U)	<0.051 (U)
4/4/2022			
4/5/2022		<0.055 (U)	<0.055 (U)
4/6/2022	<0.055 (U)		
10/17/2022			
10/18/2022	<0.055 (U)	<0.055 (U)	<0.055 (U)
10/19/2022			

ND substitution: RL or RL/2 if <15% NDs.

Calcium



Time Series Analysis Run 12/16/2022 12:14 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Calcium (mg/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

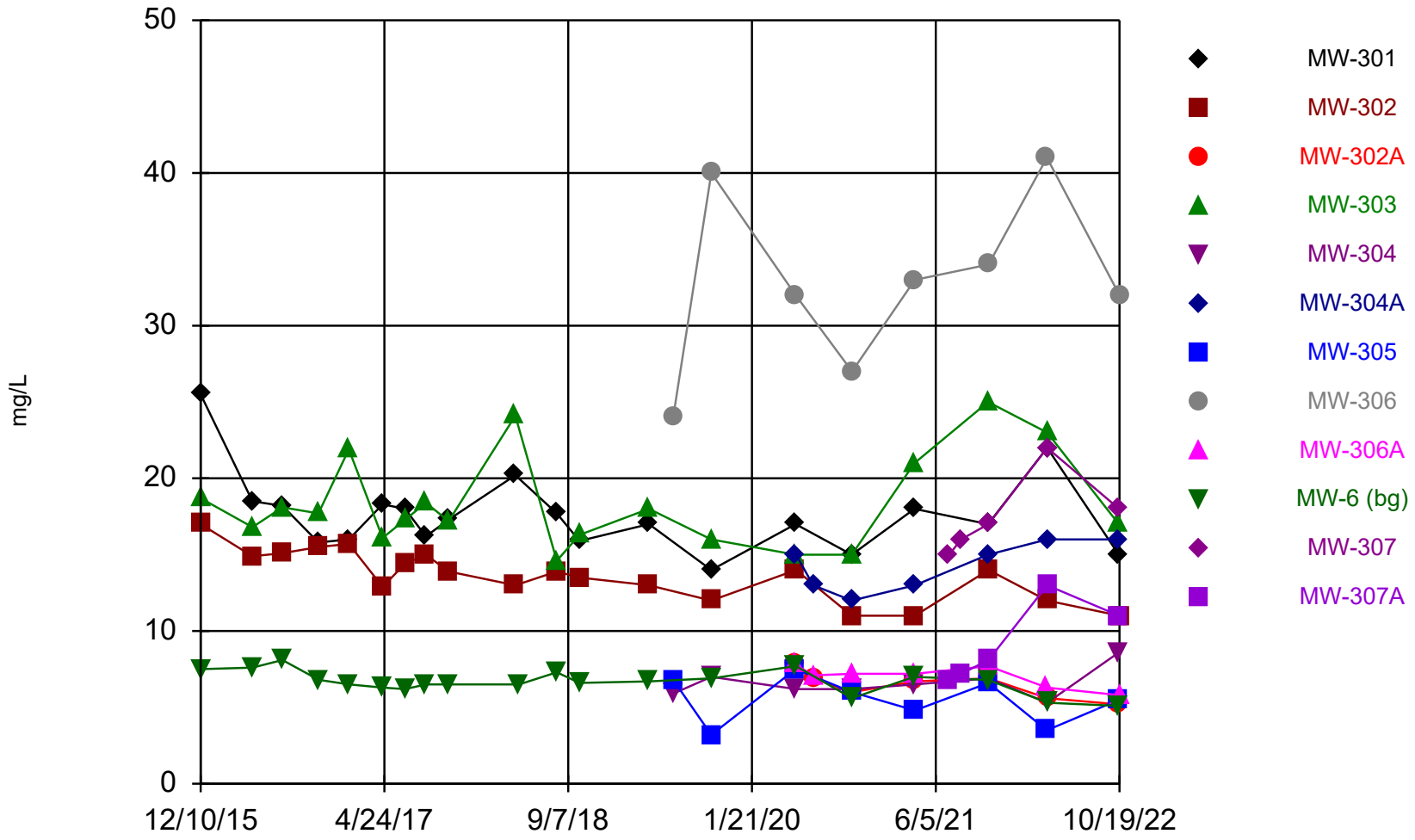
	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	41	95.1		38.2					
4/29/2016	39.1	96.5		48.6					
7/20/2016	45.1	97.8		64.5					
10/26/2016	55.5	110		67.1					
10/27/2016									
1/17/2017	56.4	116		72.5					
1/18/2017									
4/19/2017	61.7	112		60.1					
6/19/2017	59.5	110							
6/20/2017				62.2					
8/15/2017	66.4	118		42					
10/16/2017	65.9	116		84.7					
4/16/2018	64.5	120		54.6					
4/26/2018									
8/7/2018	65.1	116		46					
10/8/2018	72.5	122		35.3					
4/15/2019	73	130		49					
6/20/2019					82		92	240	
10/2/2019	68	130		46	72		97	260	
5/19/2020	56			54			82	340	83
5/20/2020		120	79		70	54			
7/6/2020			78			41			82
10/19/2020	57	110	72	34	66	35			
10/20/2020							76	260	76
4/7/2021									
4/8/2021	58			47					
4/9/2021		120	75		69	43	79	290	78
7/12/2021									
8/13/2021									
10/26/2021	68			49	71	35			
10/27/2021		120	75				79	210	80
4/4/2022							78	200	78
4/5/2022	69	120	73	48	70	38			
4/6/2022									
10/17/2022	67		74	42	79	37			
10/18/2022							80		
10/19/2022		110						280	77

Time Series

Constituent: Calcium (mg/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	64		
4/29/2016	72.6		
7/20/2016	68.9		
10/26/2016			
10/27/2016	68.6		
1/17/2017			
1/18/2017	68.6		
4/19/2017	67.8		
6/19/2017	64.6		
6/20/2017			
8/15/2017	68.2		
10/16/2017	66.9		
4/16/2018			
4/26/2018	72.7		
8/7/2018	66.5		
10/8/2018	69.6		
4/15/2019	67		
6/20/2019			
10/2/2019	70		
5/19/2020			
5/20/2020	72		
7/6/2020			
10/19/2020			
10/20/2020	69		
4/7/2021	71		
4/8/2021			
4/9/2021			
7/12/2021		55	67
8/13/2021		47	62
10/26/2021	72		
10/27/2021		38	70
4/4/2022			
4/5/2022		50	58
4/6/2022	71		
10/17/2022			
10/18/2022	70	39	52
10/19/2022			

Chloride



Time Series Analysis Run 12/16/2022 12:15 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Chloride (mg/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	25.5	17		18.7					
4/29/2016	18.5	14.9		16.8					
7/20/2016	18.2	15.1		18.1					
10/26/2016	15.8	15.5		17.7					
10/27/2016									
1/17/2017	16	15.7		21.9					
1/18/2017									
4/19/2017	18.3	12.9		16.1					
6/19/2017	18	14.4							
6/20/2017				17.3					
8/15/2017	16.2	15		18.4					
10/16/2017	17.3	13.9		17.2					
4/16/2018	20.2	13		24.1					
4/26/2018									
8/7/2018	17.7	13.9		14.6					
10/8/2018	15.9	13.5		16.3					
4/15/2019	17	13		18					
6/20/2019					5.9		6.8	24	
10/2/2019	14	12		16	7		3.2 (J)	40	
5/19/2020	17			15			7.5	32	7.8
5/20/2020		14	7.8		6.2	15			
7/6/2020			6.9			13			7.1
10/19/2020	15	11	6	15	6.2	12			
10/20/2020							6	27	7.2
4/7/2021									
4/8/2021	18			21					
4/9/2021		11	6.7		6.5	13	4.8 (J)	33	7.2
7/12/2021									
8/13/2021									
10/26/2021	17			25	6.9	15			
10/27/2021		14	6.9				6.6	34	7.7
4/4/2022							3.5 (J)	41	6.3
4/5/2022	22	12	5.6	23	5.3	16			
4/6/2022									
10/17/2022	15		5.2	17	8.6	16			
10/18/2022							5.5		
10/19/2022		11						32	5.8

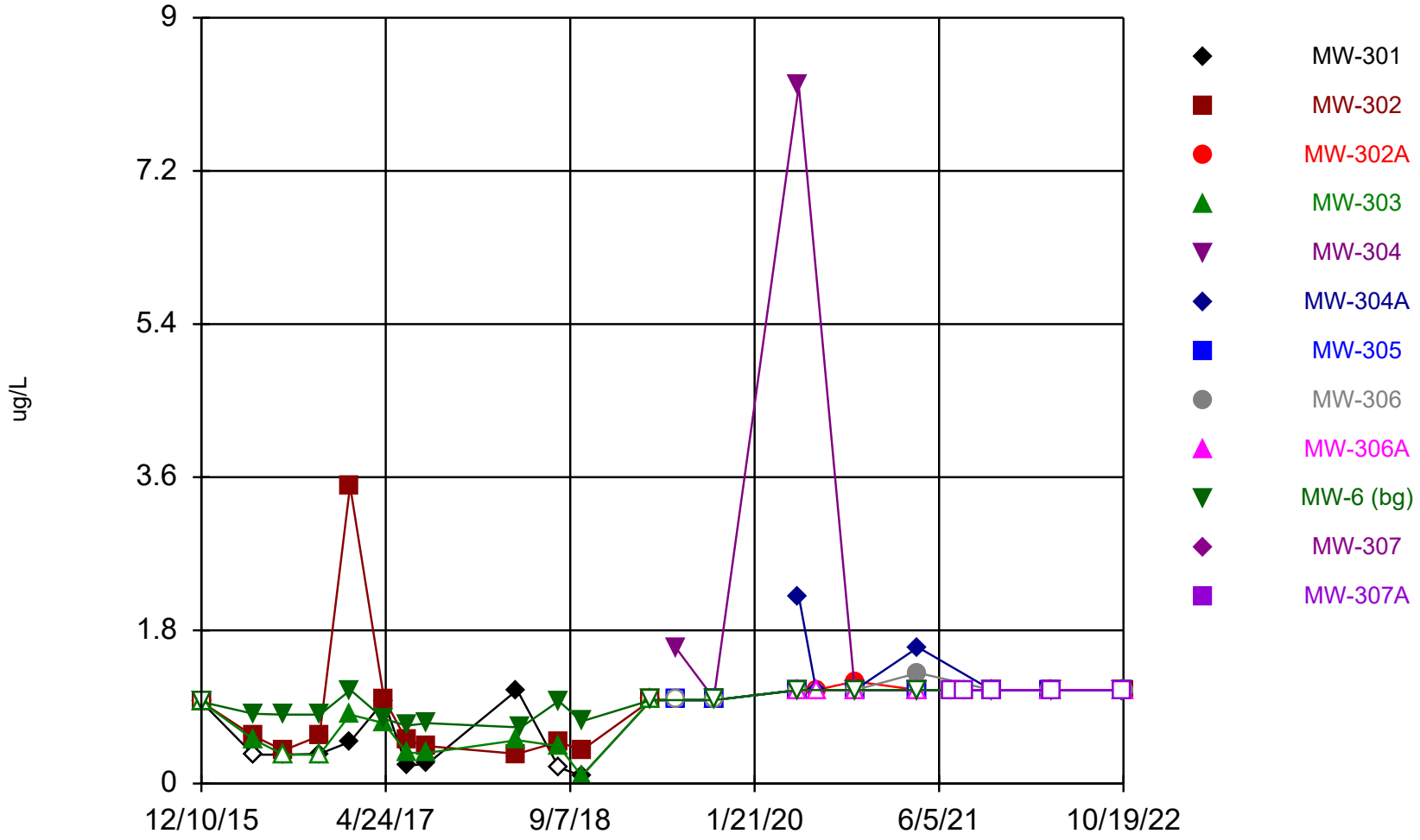
Time Series

Constituent: Chloride (mg/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	7.5		
4/29/2016	7.6		
7/20/2016	8.1		
10/26/2016			
10/27/2016	6.8		
1/17/2017			
1/18/2017	6.5		
4/19/2017	6.3		
6/19/2017	6.2		
6/20/2017			
8/15/2017	6.5		
10/16/2017	6.5		
4/16/2018			
4/26/2018	6.5		
8/7/2018	7.3		
10/8/2018	6.6		
4/15/2019	6.7		
6/20/2019			
10/2/2019	6.9		
5/19/2020			
5/20/2020	7.7		
7/6/2020			
10/19/2020			
10/20/2020	5.6		
4/7/2021	7		
4/8/2021			
4/9/2021			
7/12/2021		15	6.8
8/13/2021		16	7.2
10/26/2021	6.8		
10/27/2021		17	8.1
4/4/2022			
4/5/2022		22	13
4/6/2022	5.3		
10/17/2022			
10/18/2022	5.1	18	11
10/19/2022			

Hollow symbols indicate censored values.

Chromium



Time Series Analysis Run 12/16/2022 12:15 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Chromium (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	<0.96 (U)	<0.96 (U)		<0.96 (U)					
4/29/2016	<0.34 (U)	0.56 (J)		0.52 (J)					
7/20/2016	<0.34 (U)	0.39 (J)		<0.34 (U)					
10/26/2016	0.35 (J)	0.56 (J)		<0.34 (U)					
10/27/2016									
1/17/2017	0.49 (J)	3.5		0.81 (J)					
1/18/2017									
4/19/2017	0.97 (J)	1 (J)		0.71 (J)					
6/19/2017	0.21 (J)	0.51 (J)							
6/20/2017				0.36 (J)					
8/15/2017	0.23 (J)	0.44 (J)		0.36 (J)					
4/16/2018	1.1	0.35 (J)		0.51 (J)					
4/26/2018									
8/7/2018	<0.19 (U)	0.49 (J)		0.44 (J)					
10/8/2018	0.09 (J)	0.39 (J)		0.089 (J)					
4/15/2019	<0.98 (U)	<0.98 (U)		<0.98 (U)					
6/20/2019					1.6 (J)		<0.98 (U)	<0.98 (U)	
10/2/2019	<0.98 (U)	<0.98 (U)		<0.98 (U)	1 (J)		<0.98 (U)	<0.98 (U)	
5/19/2020	<1.1 (U)			<1.1 (U)			<1.1 (U)	<1.1 (U)	<1.1 (U)
5/20/2020		<1.1 (U)	<1.1 (U)		8.2	2.2 (J)			
7/6/2020			<1.1 (U)			1.1 (J)			<1.1 (U)
10/19/2020	<1.1 (U)	<1.1 (U)	1.2 (J)	<1.1 (U)	<1.1 (U)	<1.1 (U)			
10/20/2020							<1.1 (U)	<1.1 (U)	<1.1 (U)
4/7/2021									
4/8/2021	<1.1 (U)			<1.1 (U)					
4/9/2021		<1.1 (U)	<1.1 (U)		<1.1 (U)	1.6 (J)	<1.1 (U)	1.3 (J)	<1.1 (U)
7/12/2021									
8/13/2021									
10/26/2021	<1.1 (U)			<1.1 (U)	<1.1 (U)	<1.1 (U)			
10/27/2021		<1.1 (U)	<1.1 (U)				<1.1 (U)	<1.1 (U)	<1.1 (U)
4/4/2022							<1.1 (U)	<1.1 (U)	<1.1 (U)
4/5/2022	<1.1 (U)	<1.1 (U)	<1.1 (U)	<1.1 (U)	<1.1 (U)	<1.1 (U)			
4/6/2022									
10/17/2022	<1.1 (U)		<1.1 (U)	<1.1 (U)	<1.1 (U)	<1.1 (U)			
10/18/2022							<1.1 (U)		
10/19/2022		<1.1 (U)						<1.1 (U)	<1.1 (U)

ND substitution: RL or RL/2 if <15% NDs.

Time Series

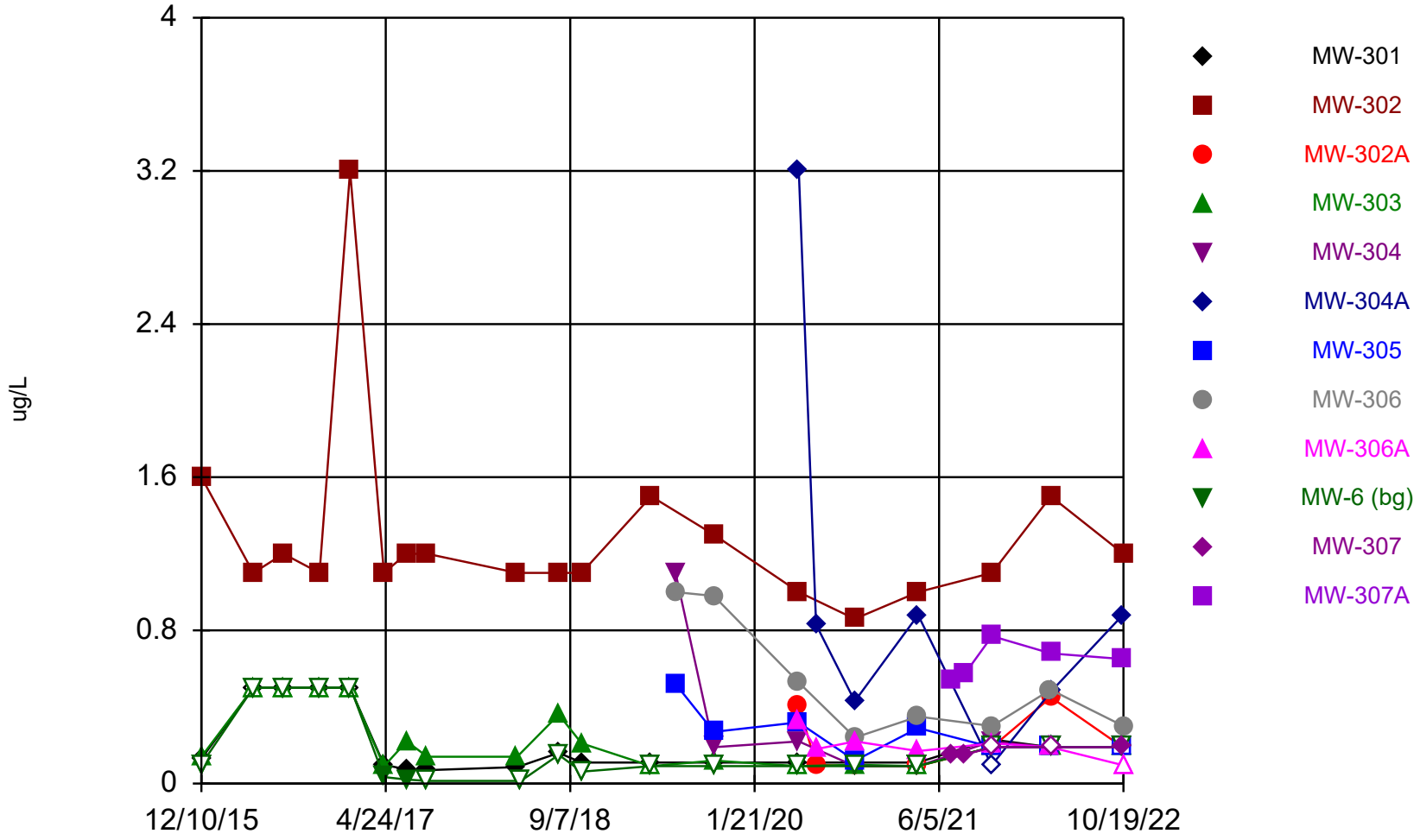
Constituent: Chromium (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	<0.96 (U)		
4/29/2016	0.82 (J)		
7/20/2016	0.81 (J)		
10/26/2016			
10/27/2016	0.81 (J)		
1/17/2017			
1/18/2017	1.1		
4/19/2017	0.76 (J)		
6/19/2017	0.68 (J)		
6/20/2017			
8/15/2017	0.71 (J)		
4/16/2018			
4/26/2018	0.66 (J)		
8/7/2018	0.97 (J)		
10/8/2018	0.73 (J)		
4/15/2019	<0.98 (U)		
6/20/2019			
10/2/2019	<0.98 (U)		
5/19/2020			
5/20/2020	<1.1 (U)		
7/6/2020			
10/19/2020			
10/20/2020	<1.1 (U)		
4/7/2021	<1.1 (U)		
4/8/2021			
4/9/2021			
7/12/2021		<1.1 (U)	<1.1 (U)
8/13/2021		<1.1	<1.1
10/26/2021	<1.1 (U)		
10/27/2021		<1.1 (U)	<1.1 (U)
4/4/2022			
4/5/2022		<1.1 (U)	<1.1 (U)
4/6/2022	<1.1 (U)		
10/17/2022			
10/18/2022	<1.1 (U)	<1.1 (U)	<1.1 (U)
10/19/2022			

ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Cobalt



Time Series Analysis Run 12/16/2022 12:15 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Cobalt (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	0.13 (J)	1.6		0.14 (J)					
4/29/2016	<0.5 (U)	1.1		<0.5 (U)					
7/20/2016	<0.5 (U)	1.2		<0.5 (U)					
10/26/2016	<0.5 (U)	1.1		<0.5 (U)					
10/27/2016									
1/17/2017	<0.5 (U)	3.2		<0.5 (U)					
1/18/2017									
4/19/2017	0.098 (J)	1.1		0.09 (J)					
6/19/2017	0.074 (J)	1.2							
6/20/2017				0.22 (J)					
8/15/2017	0.07 (J)	1.2		0.14 (J)					
4/16/2018	0.086 (J)	1.1		0.14 (J)					
4/26/2018									
8/7/2018	0.16 (J)	1.1		0.36 (J)					
10/8/2018	0.11 (J)	1.1		0.21 (J)					
4/15/2019	0.11 (J)	1.5		<0.091 (U)					
6/20/2019					1.1		0.52	1	
10/2/2019	0.11 (J)	1.3		0.12 (J)	0.19 (J)		0.27 (J)	0.98	
5/19/2020	0.11 (J)			<0.091 (U)			0.32 (J)	0.53	0.33 (J)
5/20/2020		1	0.41 (J)		0.22 (J)	3.2			
7/6/2020			0.098 (J)			0.83			0.18 (J)
10/19/2020	0.11 (J)	0.86	<0.091 (U)	0.098 (J)	<0.091 (U)	0.43 (J)			
10/20/2020							0.12 (J)	0.24 (J)	0.22 (J)
4/7/2021									
4/8/2021	0.11 (J)			<0.091 (U)					
4/9/2021		1	<0.091 (U)		<0.091 (U)	0.88	0.29 (J)	0.35 (J)	0.17 (J)
7/12/2021									
8/13/2021									
10/26/2021	0.23 (J)			<0.19 (U)	0.22 (J)	<0.19 (U)			
10/27/2021		1.1	<0.19 (U)				<0.19 (U)	0.3 (J)	0.21 (J)
4/4/2022							<0.19 (U)	0.49 (J)	0.19 (J)
4/5/2022	<0.19 (U)	1.5	0.45 (J)	<0.19 (U)	<0.19 (U)	0.48 (J)			
4/6/2022									
10/17/2022	<0.19 (U)		<0.19 (U)	<0.19 (U)	<0.19 (U)	0.88			
10/18/2022							<0.19 (U)		
10/19/2022		1.2						0.3 (J)	<0.19 (U)

ND substitution: RL or RL/2 if <15% NDs.

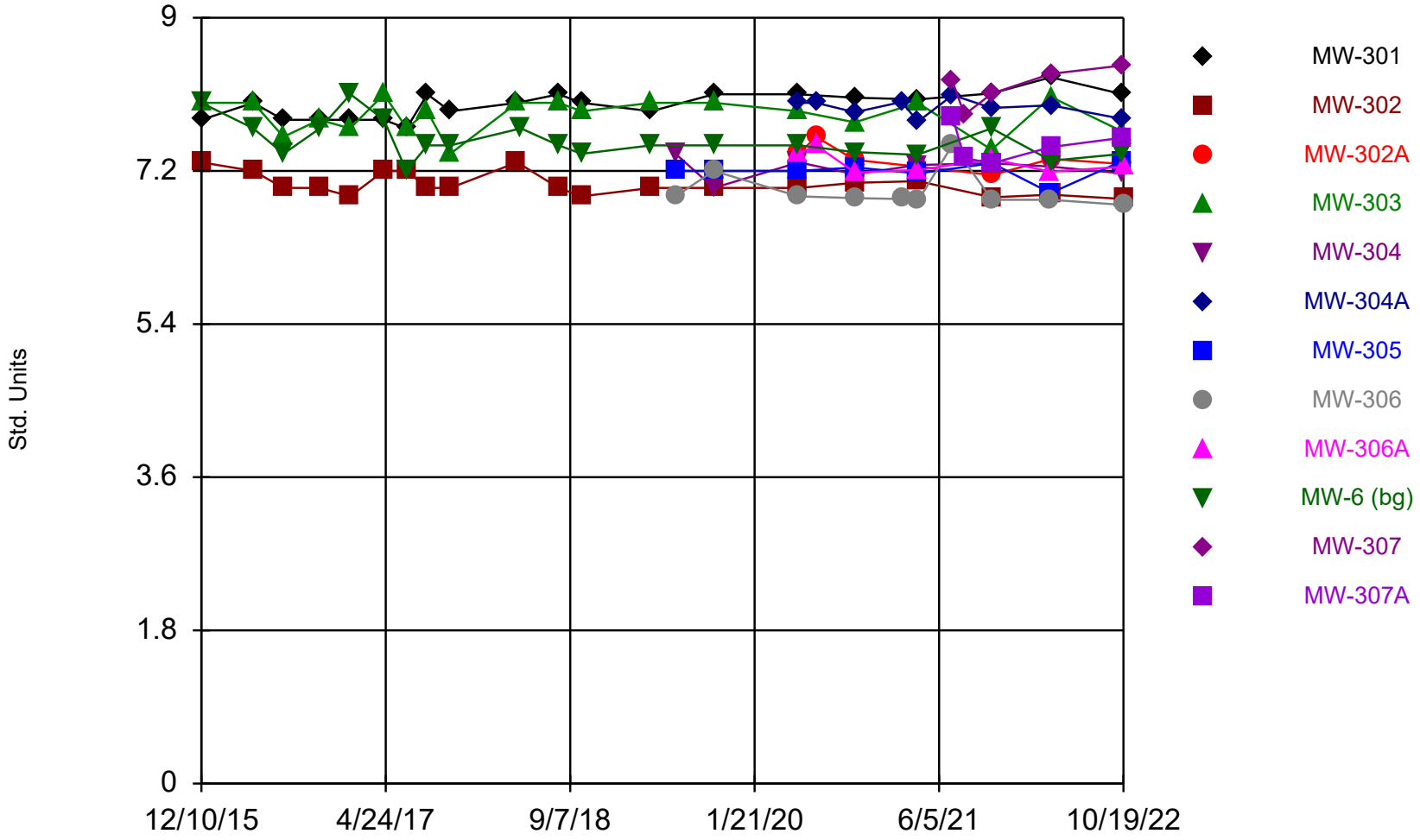
Time Series

Constituent: Cobalt (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	<0.1 (U)		
4/29/2016	<0.5 (U)		
7/20/2016	<0.5 (U)		
10/26/2016			
10/27/2016	<0.5 (U)		
1/17/2017			
1/18/2017	<0.5 (U)		
4/19/2017	0.034 (J)		
6/19/2017	0.021 (J)		
6/20/2017			
8/15/2017	<0.014 (U)		
4/16/2018			
4/26/2018	<0.014 (U)		
8/7/2018	<0.15 (U)		
10/8/2018	<0.062 (U)		
4/15/2019	<0.091 (U)		
6/20/2019			
10/2/2019	<0.091 (U)		
5/19/2020			
5/20/2020	<0.091 (U)		
7/6/2020			
10/19/2020			
10/20/2020	<0.091 (U)		
4/7/2021	<0.091 (U)		
4/8/2021			
4/9/2021			
7/12/2021		0.15 (J)	0.54
8/13/2021		0.15 (J)	0.57
10/26/2021	<0.19 (U)		
10/27/2021		<0.19 (U)	0.77
4/4/2022			
4/5/2022		<0.19 (U)	0.68
4/6/2022	<0.19 (U)		
10/17/2022			
10/18/2022	<0.19 (U)	0.19 (J)	0.65
10/19/2022			

ND substitution: RL or RL/2 if <15% NDs.

Field pH



Time Series Analysis Run 12/16/2022 12:15 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Field pH (Std. Units) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	7.8	7.3		8					
4/29/2016	8	7.2		8					
7/20/2016	7.8	7		7.6					
10/26/2016	7.8	7		7.8					
10/27/2016									
1/17/2017	7.8	6.9		7.7					
1/18/2017									
4/19/2017	7.8	7.2		8.1					
6/19/2017	7.7	7.2							
6/20/2017				7.7					
8/15/2017	8.1	7		7.9					
10/16/2017	7.9	7		7.4					
4/16/2018	8	7.3		8					
4/26/2018									
8/7/2018	8.1	7		8					
10/8/2018	8	6.9		7.9					
4/15/2019	7.9	7		8					
6/20/2019					7.4		7.2	6.9	
10/2/2019	8.1	7		8	7		7.2	7.2	
5/19/2020	8.1			7.9			7.2	6.9	7.4
5/20/2020		7	7.4		7.3	8			
7/6/2020			7.6			8			7.5
10/19/2020	8.06	7.06	7.33	7.77	7.16	7.89			
10/20/2020							7.24	6.88	7.18
2/23/2021						8.01		6.87	
4/7/2021									
4/8/2021	8.04			8					
4/9/2021		7.08	7.25		7.27	7.78	7.17	6.85	7.21
7/12/2021						8.09		7.51	
8/13/2021									
10/26/2021	8.11			7.45	7.29	7.94			
10/27/2021		6.89	7.15				7.29	6.86	7.34
4/4/2022							6.94	6.86	7.19
4/5/2022	8.3	6.92	7.34	8.07	7.25	7.97			
4/6/2022									
10/17/2022	8.1		7.28	7.66	7.17	7.81			
10/18/2022							7.32		
10/19/2022		6.87						6.8	7.25

Time Series

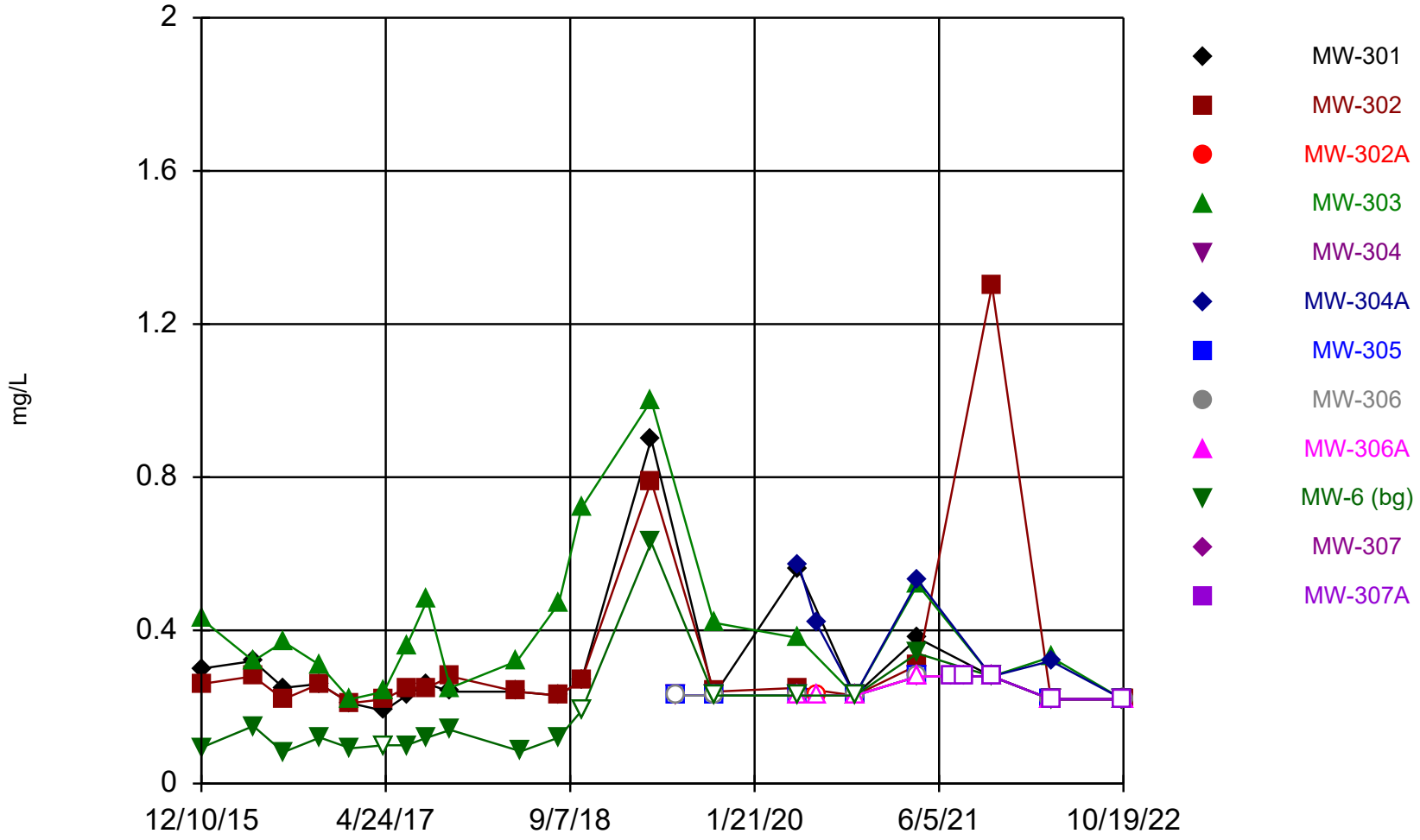
Constituent: Field pH (Std. Units) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	8		
4/29/2016	7.7		
7/20/2016	7.4		
10/26/2016			
10/27/2016	7.7		
1/17/2017			
1/18/2017	8.1		
4/19/2017	7.8		
6/19/2017	7.2		
6/20/2017			
8/15/2017	7.5		
10/16/2017	7.5		
4/16/2018			
4/26/2018	7.7		
8/7/2018	7.5		
10/8/2018	7.4		
4/15/2019	7.5		
6/20/2019			
10/2/2019	7.5		
5/19/2020			
5/20/2020	7.5		
7/6/2020			
10/19/2020			
10/20/2020	7.42		
2/23/2021			
4/7/2021	7.39		
4/8/2021			
4/9/2021			
7/12/2021		8.25	7.83
8/13/2021		7.86	7.35
10/26/2021	7.7		
10/27/2021		8.11	7.29
4/4/2022			
4/5/2022		8.34	7.48
4/6/2022	7.32		
10/17/2022			
10/18/2022	7.4	8.44	7.59
10/19/2022			

Hollow symbols indicate censored values.

Fluoride



Time Series Analysis Run 12/16/2022 12:15 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Fluoride (mg/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	0.3	0.26		0.43					
4/29/2016	0.32	0.28		0.32					
7/20/2016	0.25	0.22		0.37					
10/26/2016	0.26	0.26		0.31					
10/27/2016									
1/17/2017	0.21	0.21		0.22					
1/18/2017									
4/19/2017	0.19 (J)	0.22		0.24					
6/19/2017	0.23	0.25							
6/20/2017				0.36					
8/15/2017	0.26	0.25		0.48					
10/16/2017	0.24	0.28		0.25					
4/16/2018	0.24	0.24		0.32					
4/26/2018									
8/7/2018	0.23	0.23		0.47					
10/8/2018	0.27	0.27		0.72					
4/15/2019	0.9	0.79		1					
6/20/2019					<0.23 (U)		<0.23 (U)	<0.23 (U)	
10/2/2019	0.23 (J)	0.24 (J)		0.42 (J)	<0.23 (U)		<0.23 (U)	<0.23 (U)	
5/19/2020	0.56			0.38 (J)			0.23 (J)	<0.23 (U)	<0.23 (U)
5/20/2020		0.25 (J)	<0.23 (U)		<0.23 (U)	0.57			
7/6/2020			<0.23 (U)			0.42 (J)			<0.23 (U)
10/19/2020	<0.23 (U)	<0.23 (U)	<0.23 (U)	<0.23 (U)	<0.23 (U)	<0.23 (U)			
10/20/2020							<0.23 (U)	<0.23 (U)	<0.23 (U)
4/7/2021									
4/8/2021	0.38 (J)			0.52					
4/9/2021		0.31 (J)	<0.28 (U)		<0.28 (U)	0.53	<0.28 (U)	<0.28 (U)	<0.28 (U)
7/12/2021									
8/13/2021									
10/26/2021	<0.28 (U)			<0.28 (U)	<0.28 (U)	<0.28 (U)			
10/27/2021		1.3	<0.28 (U)				<0.28 (U)	<0.28 (U)	<0.28 (U)
4/4/2022							<0.22 (U)	<0.22 (U)	<0.22 (U)
4/5/2022	<0.22 (U)	<0.22 (U)	<0.22 (U)	0.33 (J)	<0.22 (U)	0.32 (J)			
4/6/2022									
10/17/2022	<0.22 (U)		<0.22 (U)	<0.22 (U)	<0.22 (U)	<0.22 (U)			
10/18/2022							<0.22 (U)		
10/19/2022		<0.22 (U)						<0.22 (U)	<0.22 (U)

ND substitution: RL or RL/2 if <15% NDs.

Time Series

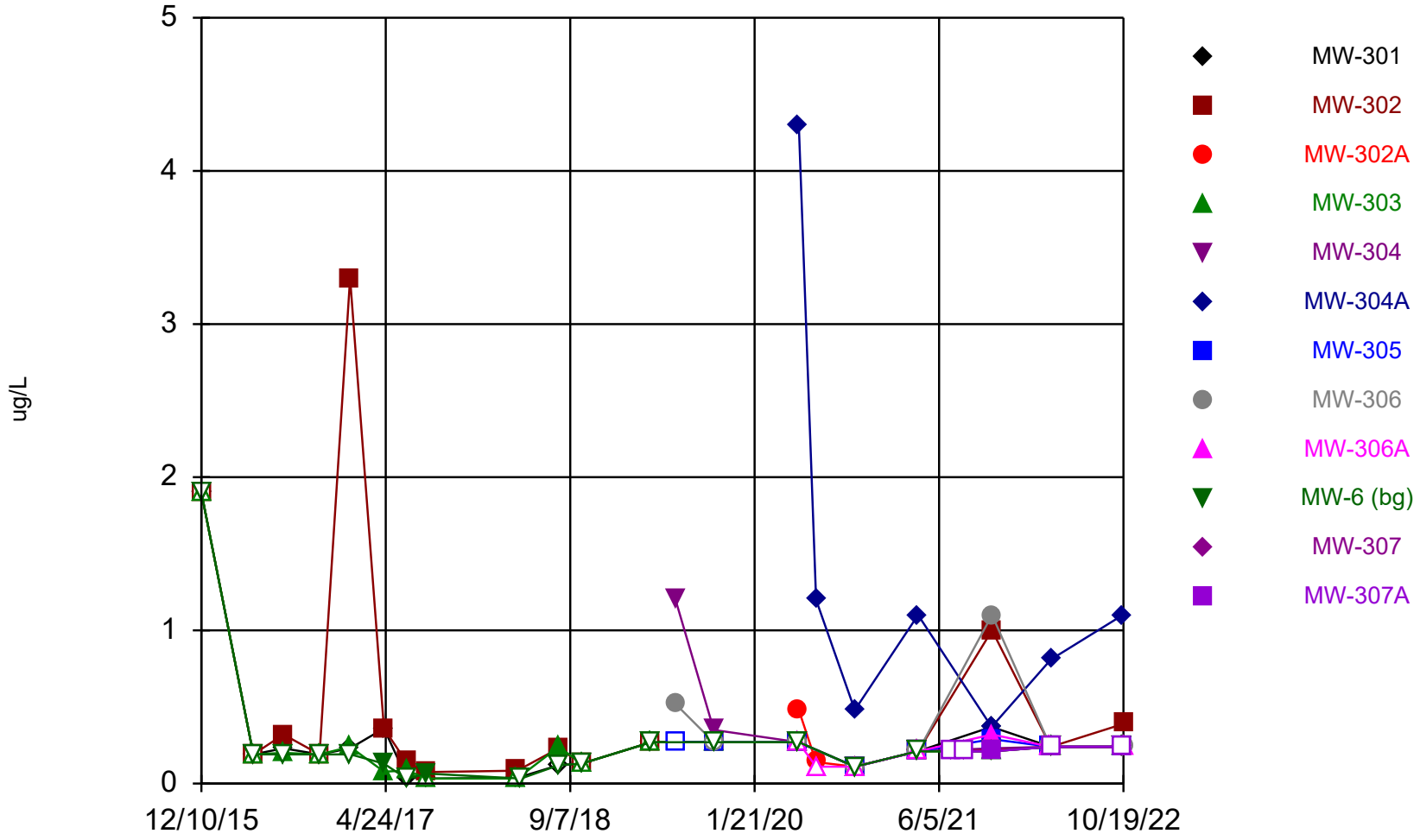
Constituent: Fluoride (mg/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	0.094 (J)		
4/29/2016	0.15 (J)		
7/20/2016	0.082 (J)		
10/26/2016			
10/27/2016	0.12 (J)		
1/17/2017			
1/18/2017	0.092 (J)		
4/19/2017	<0.1 (U)		
6/19/2017	0.1 (J)		
6/20/2017			
8/15/2017	0.12 (J)		
10/16/2017	0.14 (J)		
4/16/2018			
4/26/2018	0.084 (J)		
8/7/2018	0.12 (J)		
10/8/2018	<0.19 (U)		
4/15/2019	0.63		
6/20/2019			
10/2/2019	<0.23 (U)		
5/19/2020			
5/20/2020	<0.23 (U)		
7/6/2020			
10/19/2020			
10/20/2020	<0.23 (U)		
4/7/2021	0.34 (J)		
4/8/2021			
4/9/2021			
7/12/2021		<0.28 (U)	<0.28 (U)
8/13/2021		<0.28	<0.28
10/26/2021	<0.28 (U)		
10/27/2021		<0.28 (U)	<0.28 (U)
4/4/2022			
4/5/2022		<0.22 (U)	<0.22 (U)
4/6/2022	<0.22 (U)		
10/17/2022			
10/18/2022	<0.22 (U)	<0.22 (U)	<0.22 (U)
10/19/2022			

ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Lead



Time Series Analysis Run 12/16/2022 12:15 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Lead (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	<1.9 (U)	<1.9 (U)		<1.9 (U)					
4/29/2016	<0.19 (U)	<0.19 (U)		<0.19 (U)					
7/20/2016	0.23 (J)	0.32 (J)		0.2 (J)					
10/26/2016	<0.19 (U)	<0.19 (U)		<0.19 (U)					
10/27/2016									
1/17/2017	0.23 (J)	3.3		0.24 (J)					
1/18/2017									
4/19/2017	0.36 (J)	0.36 (J)		0.078 (J)					
6/19/2017	0.041 (J)	0.14 (J)							
6/20/2017				0.085 (J)					
8/15/2017	<0.033 (U)	0.075 (J)		<0.033 (U)					
4/16/2018	0.037 (J)	0.084 (J)		<0.033 (U)					
4/26/2018									
8/7/2018	<0.12 (U)	0.23 (J)		0.24 (J)					
10/8/2018	<0.13 (U)	<0.13 (U)		<0.13 (U)					
4/15/2019	<0.27 (U)	<0.27 (U)		<0.27 (U)					
6/20/2019					1.2		<0.27 (U)	0.52	
10/2/2019	<0.27 (U)	<0.27 (U)		<0.27 (U)	0.35 (J)		<0.27 (U)	<0.27 (U)	
5/19/2020	<0.27 (U)			<0.27 (U)			<0.27 (U)	<0.27 (U)	<0.27 (U)
5/20/2020		<0.27 (U)	0.48 (J)		<0.27 (U)	4.3			
7/6/2020			0.14 (J)			1.2			<0.11 (U)
10/19/2020	<0.11 (U)	<0.11 (U)	<0.11 (U)	<0.11 (U)	<0.11 (U)	0.48 (J)			
10/20/2020							<0.11 (U)	<0.11 (U)	<0.11 (U)
4/7/2021									
4/8/2021	<0.21 (U)			<0.21 (U)					
4/9/2021		<0.21 (U)	<0.21 (U)		<0.21 (U)	1.1	<0.21 (U)	<0.21 (U)	<0.21 (U)
7/12/2021									
8/13/2021									
10/26/2021	0.37 (J)			<0.21 (U)	0.23 (J)	0.37 (J)			
10/27/2021		1	0.22 (J)				0.29 (J)	1.1	0.32 (J)
4/4/2022							<0.24 (U)	<0.24 (U)	<0.24 (U)
4/5/2022	<0.24 (U)	<0.24 (U)	<0.24 (U)	<0.24 (U)	<0.24 (U)	0.81			
4/6/2022									
10/17/2022	<0.24 (U)		<0.24 (U)	<0.24 (U)	<0.24 (U)	1.1			
10/18/2022							<0.24 (U)		
10/19/2022		0.39 (J)						<0.24 (U)	<0.24 (U)

ND substitution: RL or RL/2 if <15% NDs.

Time Series

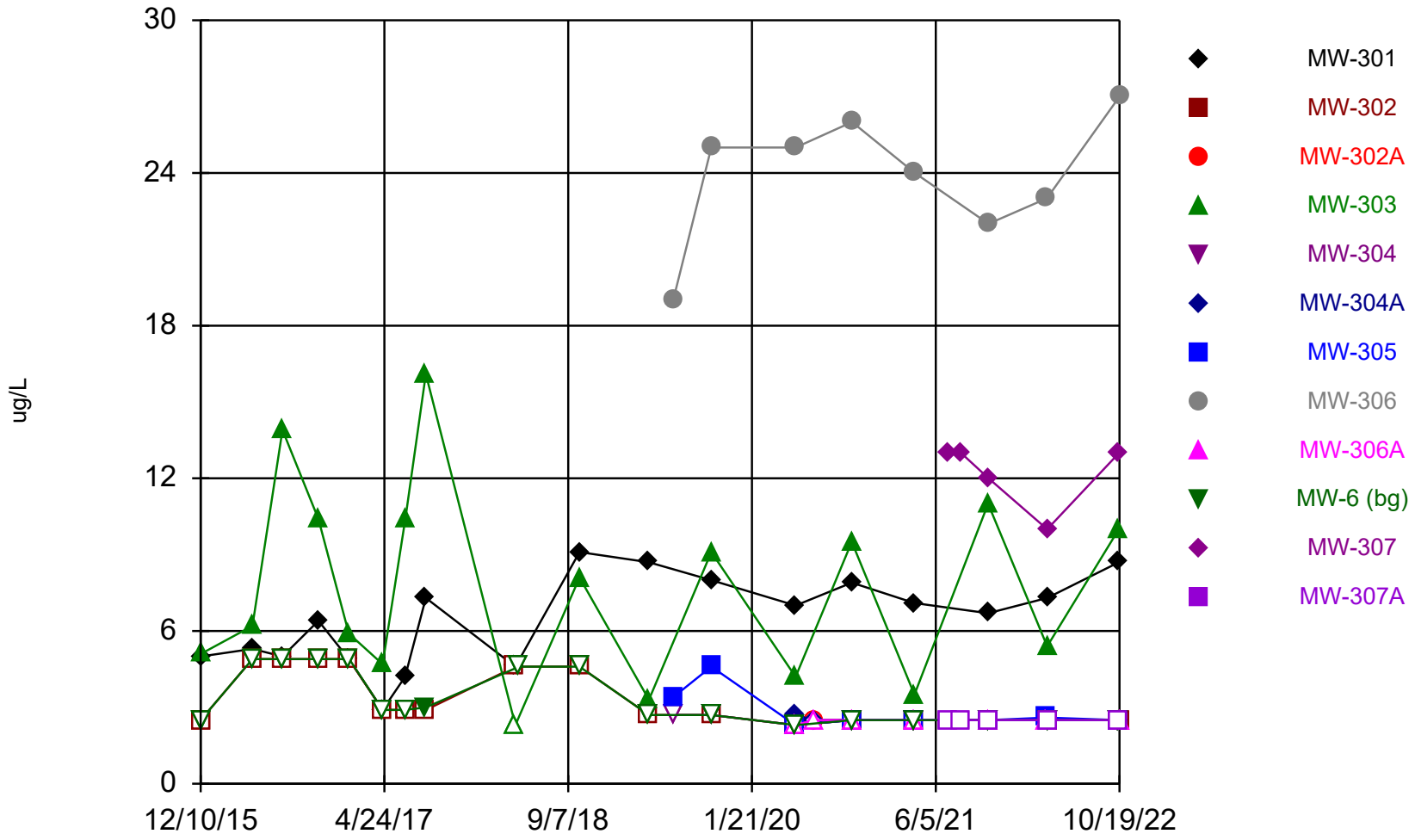
Constituent: Lead (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	<1.9 (U)		
4/29/2016	<0.19 (U)		
7/20/2016	<0.19 (U)		
10/26/2016			
10/27/2016	<0.19 (U)		
1/17/2017			
1/18/2017	<0.19 (U)		
4/19/2017	0.13 (J)		
6/19/2017	<0.033 (U)		
6/20/2017			
8/15/2017	0.065 (J)		
4/16/2018			
4/26/2018	<0.033 (U)		
8/7/2018	<0.12 (U)		
10/8/2018	<0.13 (U)		
4/15/2019	<0.27 (U)		
6/20/2019			
10/2/2019	<0.27 (U)		
5/19/2020			
5/20/2020	<0.27 (U)		
7/6/2020			
10/19/2020			
10/20/2020	<0.11 (U)		
4/7/2021	<0.21 (U)		
4/8/2021			
4/9/2021			
7/12/2021		<0.21 (U)	<0.21 (U)
8/13/2021		<0.21	<0.21
10/26/2021	<0.21 (U)		
10/27/2021		<0.21 (U)	0.21 (J)
4/4/2022			
4/5/2022		<0.24 (U)	<0.24 (U)
4/6/2022	<0.24 (U)		
10/17/2022			
10/18/2022	<0.24 (U)	<0.24 (U)	<0.24 (U)
10/19/2022			

ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Lithium



Time Series Analysis Run 12/16/2022 12:15 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Lithium (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	5 (J)	<2.5 (U)		5.1 (J)					
4/29/2016	5.3 (J)	<4.9 (U)		6.2 (J)					
7/20/2016	5 (J)	<4.9 (U)		13.9					
10/26/2016	6.4 (J)	<4.9 (U)		10.4					
10/27/2016									
1/17/2017	<4.9 (U)	<4.9 (U)		5.9 (J)					
1/18/2017									
4/19/2017	<2.9 (U)	<2.9 (U)		4.7 (J)					
6/19/2017	4.2 (J)	<2.9 (U)							
6/20/2017				10.4					
8/15/2017	7.3 (J)	<2.9 (U)		16.1					
4/16/2018	<4.6 (U)	<4.6 (U)		<4.6 (U)					
4/26/2018									
10/8/2018	9.1 (J)	<4.6 (U)		8.1 (J)					
4/15/2019	8.7 (J)	<2.7 (U)		3.3 (J)					
6/20/2019					<2.7 (U)		3.4 (J)	19	
10/2/2019	8 (J)	<2.7 (U)		9.1 (J)	<2.7 (U)		4.6 (J)	25	
5/19/2020	7 (J)			4.2 (J)			<2.3 (U)	25	<2.3 (U)
5/20/2020		<2.3 (U)	<2.3 (U)		<2.3 (U)	2.7 (J)			
7/6/2020			<2.5 (U)			<2.5 (U)			<2.5 (U)
10/19/2020	7.9 (J)	<2.5 (U)	<2.5 (U)	9.5 (J)	<2.5 (U)	<2.5 (U)			
10/20/2020							<2.5 (U)	26	<2.5 (U)
4/7/2021									
4/8/2021	7.1 (J)			3.5 (J)					
4/9/2021		<2.5 (U)	<2.5 (U)		<2.5 (U)	<2.5 (U)	<2.5 (U)	24	<2.5 (U)
7/12/2021									
8/13/2021									
10/26/2021	6.7 (J)			11	<2.5 (U)	<2.5 (U)			
10/27/2021		<2.5 (U)	<2.5 (U)				<2.5 (U)	22	<2.5 (U)
4/4/2022							2.6 (J)	23	<2.5 (U)
4/5/2022	7.3 (J)	<2.5 (U)	<2.5 (U)	5.4 (J)	<2.5 (U)	<2.5 (U)			
4/6/2022									
10/17/2022	8.7 (J)		<2.5 (U)	10	<2.5 (U)	<2.5 (U)			
10/18/2022							<2.5 (U)		
10/19/2022		<2.5 (U)						27	<2.5 (U)

ND substitution: RL or RL/2 if <15% NDs.

Time Series

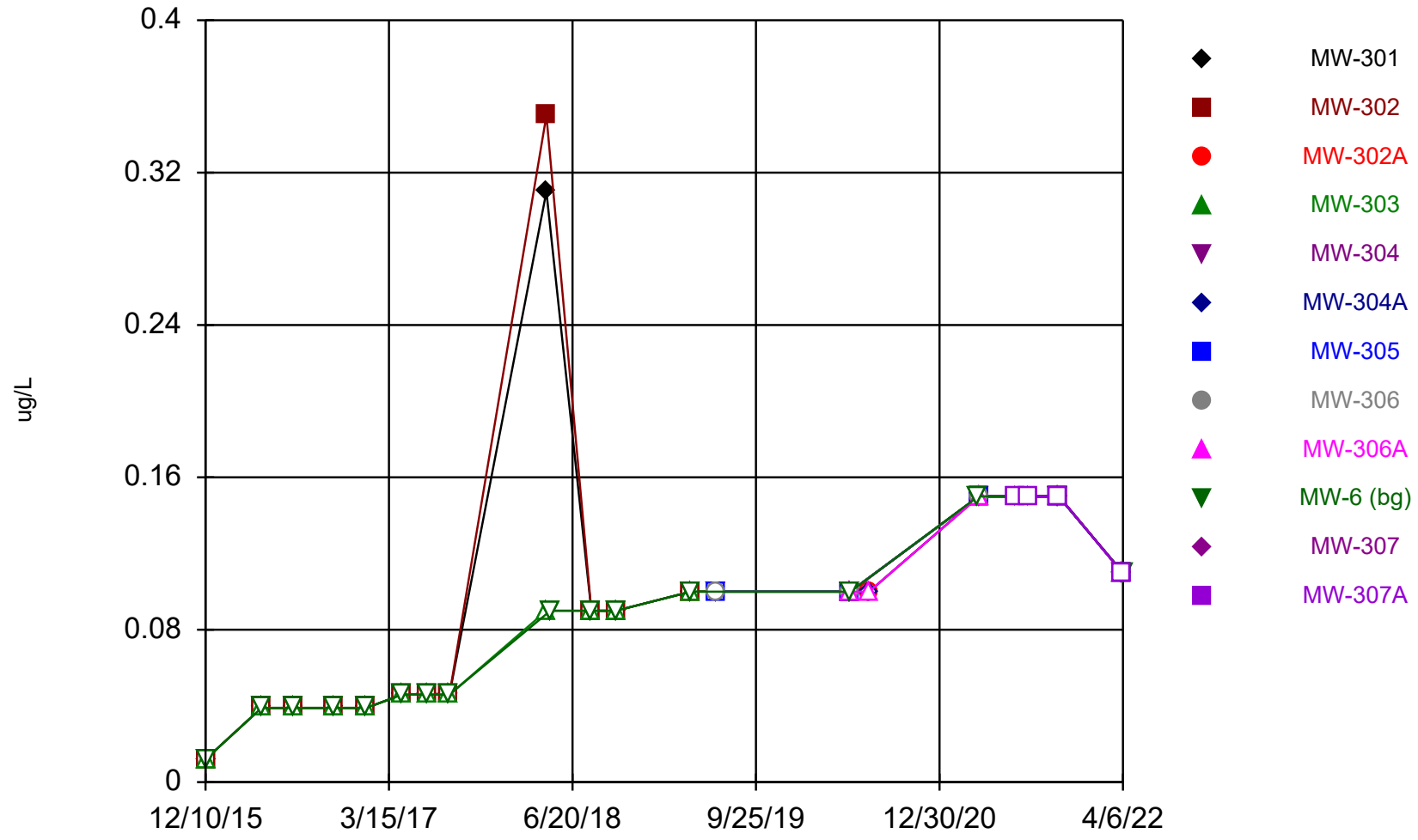
Constituent: Lithium (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	<2.5 (U)		
4/29/2016	<4.9 (U)		
7/20/2016	<4.9 (U)		
10/26/2016			
10/27/2016	<4.9 (U)		
1/17/2017			
1/18/2017	<4.9 (U)		
4/19/2017	<2.9 (U)		
6/19/2017	<2.9 (U)		
6/20/2017			
8/15/2017	3 (J)		
4/16/2018			
4/26/2018	<4.6 (U)		
10/8/2018	<4.6 (U)		
4/15/2019	<2.7 (U)		
6/20/2019			
10/2/2019	<2.7 (U)		
5/19/2020			
5/20/2020	<2.3 (U)		
7/6/2020			
10/19/2020			
10/20/2020	<2.5 (U)		
4/7/2021	<2.5 (U)		
4/8/2021			
4/9/2021			
7/12/2021		13	<2.5 (U)
8/13/2021		13	<2.5
10/26/2021	<2.5 (U)		
10/27/2021		12	<2.5 (U)
4/4/2022			
4/5/2022		10	<2.5 (U)
4/6/2022	<2.5 (U)		
10/17/2022			
10/18/2022	<2.5 (U)	13	<2.5 (U)
10/19/2022			

ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Mercury



Time Series Analysis Run 12/16/2022 12:15 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Mercury (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	<0.012 (U)	<0.012 (U)		<0.012 (U)					
4/29/2016	<0.039 (U)	<0.039 (U)		<0.039 (U)					
7/20/2016	<0.039 (U)	<0.039 (U)		<0.039 (U)					
10/26/2016	<0.039 (U)	<0.039 (U)		<0.039 (U)					
10/27/2016									
1/17/2017	<0.039 (U)	<0.039 (U)		<0.039 (U)					
1/18/2017									
4/19/2017	<0.046 (U)	<0.046 (U)		<0.046 (U)					
6/19/2017	<0.046 (U)	<0.046 (U)							
6/20/2017				<0.046 (U)					
8/15/2017	<0.046 (U)	<0.046 (U)		<0.046 (U)					
4/16/2018	0.31	0.35		<0.09 (U)					
4/26/2018									
8/7/2018	<0.09 (U)	<0.09 (U)		<0.09 (U)					
10/8/2018	<0.09 (U)	<0.09 (U)		<0.09 (U)					
4/15/2019	<0.1 (U)	<0.1 (U)		<0.1 (U)					
6/20/2019					<0.1 (U)		<0.1 (U)	<0.1 (U)	
5/19/2020	<0.1 (U)			<0.1 (U)			<0.1 (U)	<0.1 (U)	<0.1 (U)
5/20/2020		<0.1 (U)	<0.1 (U)		<0.1 (U)	<0.1 (U)			
7/6/2020			<0.1 (U)			<0.1 (U)			<0.1 (U)
4/7/2021									
4/8/2021	<0.15 (U)			<0.15 (U)					
4/9/2021		<0.15 (U)	<0.15 (U)		<0.15 (U)	<0.15 (U)	<0.15 (U)	<0.15 (U)	<0.15 (U)
7/12/2021									
8/13/2021									
10/26/2021	<0.15 (U)			<0.15 (U)	<0.15 (U)	<0.15 (U)			
10/27/2021		<0.15 (U)	<0.15 (U)				<0.15 (U)	<0.15 (U)	<0.15 (U)
4/4/2022							<0.11 (U)	<0.11 (U)	<0.11 (U)
4/5/2022	<0.11 (U)	<0.11 (U)	<0.11 (U)	<0.11 (U)	<0.11 (U)	<0.11 (U)			
4/6/2022									

ND substitution: RL or RL/2 if <15% NDs.

Time Series

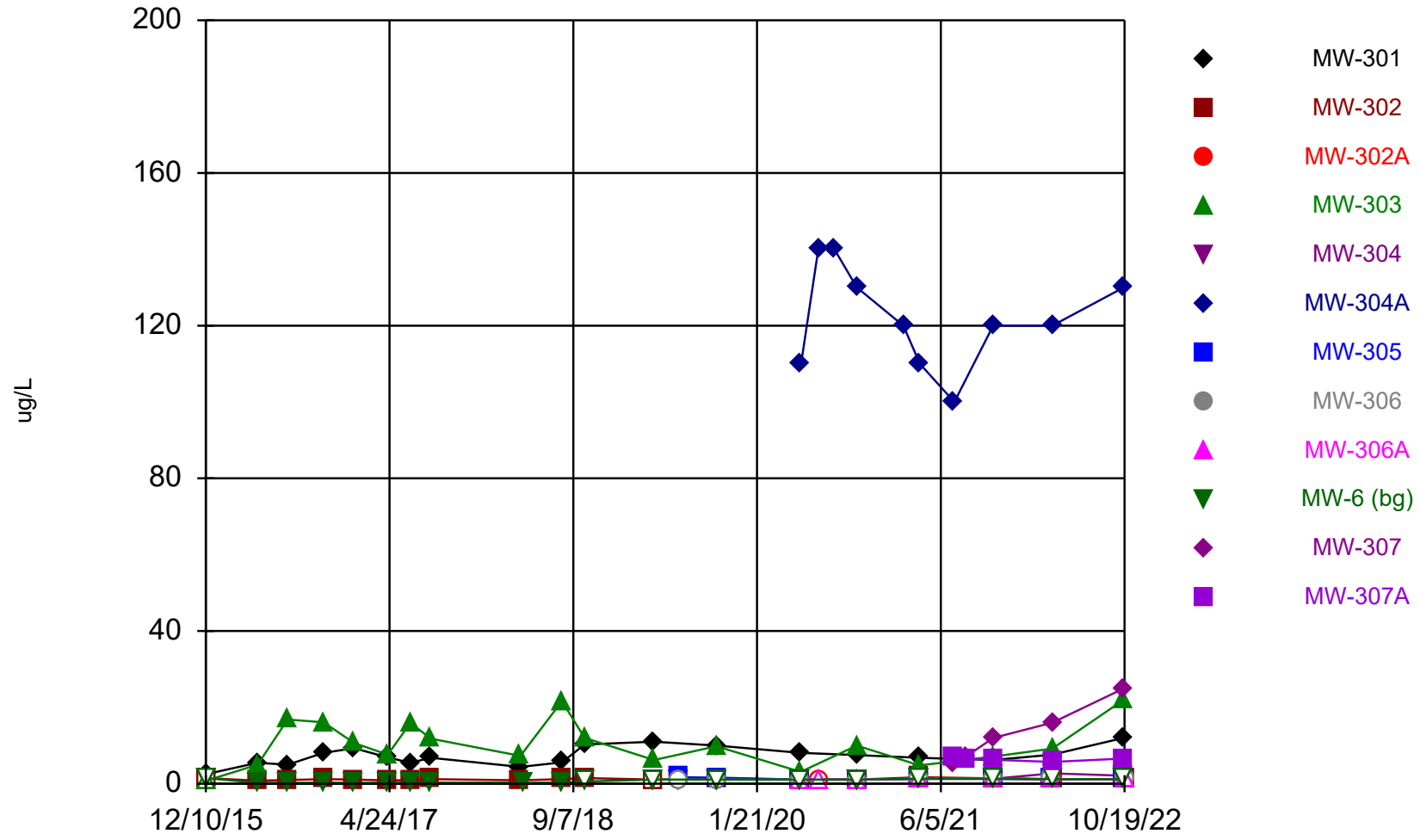
Constituent: Mercury (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	<0.012 (U)		
4/29/2016	<0.039 (U)		
7/20/2016	<0.039 (U)		
10/26/2016			
10/27/2016	<0.039 (U)		
1/17/2017			
1/18/2017	<0.039 (U)		
4/19/2017	<0.046 (U)		
6/19/2017	<0.046 (U)		
6/20/2017			
8/15/2017	<0.046 (U)		
4/16/2018			
4/26/2018	<0.09 (U)		
8/7/2018	<0.09 (U)		
10/8/2018	<0.09 (U)		
4/15/2019	<0.1 (U)		
6/20/2019			
5/19/2020			
5/20/2020	<0.1 (U)		
7/6/2020			
4/7/2021	<0.15 (U)		
4/8/2021			
4/9/2021			
7/12/2021		<0.15 (U)	<0.15 (U)
8/13/2021		<0.15	<0.15
10/26/2021	<0.15 (U)		
10/27/2021		<0.15 (U)	<0.15 (U)
4/4/2022			
4/5/2022		<0.11 (U)	<0.11 (U)
4/6/2022	<0.11 (U)		

ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Molybdenum



Time Series Analysis Run 12/16/2022 12:15 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Molybdenum (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	2.5 (J)	<1.5 (U)		<1.5 (U)					
4/29/2016	5.5	0.81 (J)		5					
7/20/2016	5	0.98 (J)		16.8					
10/26/2016	8.1	1.2		16.1					
10/27/2016									
1/17/2017	9.3	1.1		10.7					
1/18/2017									
4/19/2017	6.9	0.87 (J)		7.6					
6/19/2017	5.5	0.91 (J)							
6/20/2017				15.9					
8/15/2017	6.8	1.2		11.8					
4/16/2018	4.4	0.91 (J)		7.3					
4/26/2018									
8/7/2018	5.6	1.2		21.6					
10/8/2018	10.3	1.5		12					
4/15/2019	11	<1.1 (U)		6.2					
6/20/2019					<1.1 (U)		1.7 (J)	<1.1 (U)	
10/2/2019	10	1.4 (J)		9.8	<1.1 (U)		1.6 (J)	<1.1 (U)	
5/19/2020	8.1			3.1			<1.1 (U)	<1.1 (U)	<1.1 (U)
5/20/2020		<1.1 (U)	<1.1 (U)		<1.1 (U)	110			
7/6/2020			<1.1 (U)			140			<1.1 (U)
8/19/2020						140			
10/19/2020	7.5	<1.1 (U)	<1.1 (U)	10	<1.1 (U)	130			
10/20/2020							<1.1 (U)	<1.1 (U)	<1.1 (U)
2/23/2021						120			
4/7/2021									
4/8/2021	6.8			4.8					
4/9/2021		1.7 (J)	<1.3 (U)		<1.3 (U)	110	<1.3 (U)	<1.3 (U)	<1.3 (U)
7/12/2021						100			
8/13/2021									
10/26/2021	6.2			7.1	<1.3 (U)	120			
10/27/2021		1.4 (J)	<1.3 (U)				<1.3 (U)	<1.3 (U)	<1.3 (U)
4/4/2022							<1.2 (U)	<1.2 (U)	<1.2 (U)
4/5/2022	7.6	<1.2 (U)	<1.2 (U)	9.2	2.7	120			
4/6/2022									
10/17/2022	12		<1.2 (U)	22	2.1	130			
10/18/2022							<1.2 (U)		
10/19/2022		1.2 (J)						<1.2 (U)	<1.2 (U)

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Molybdenum (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend

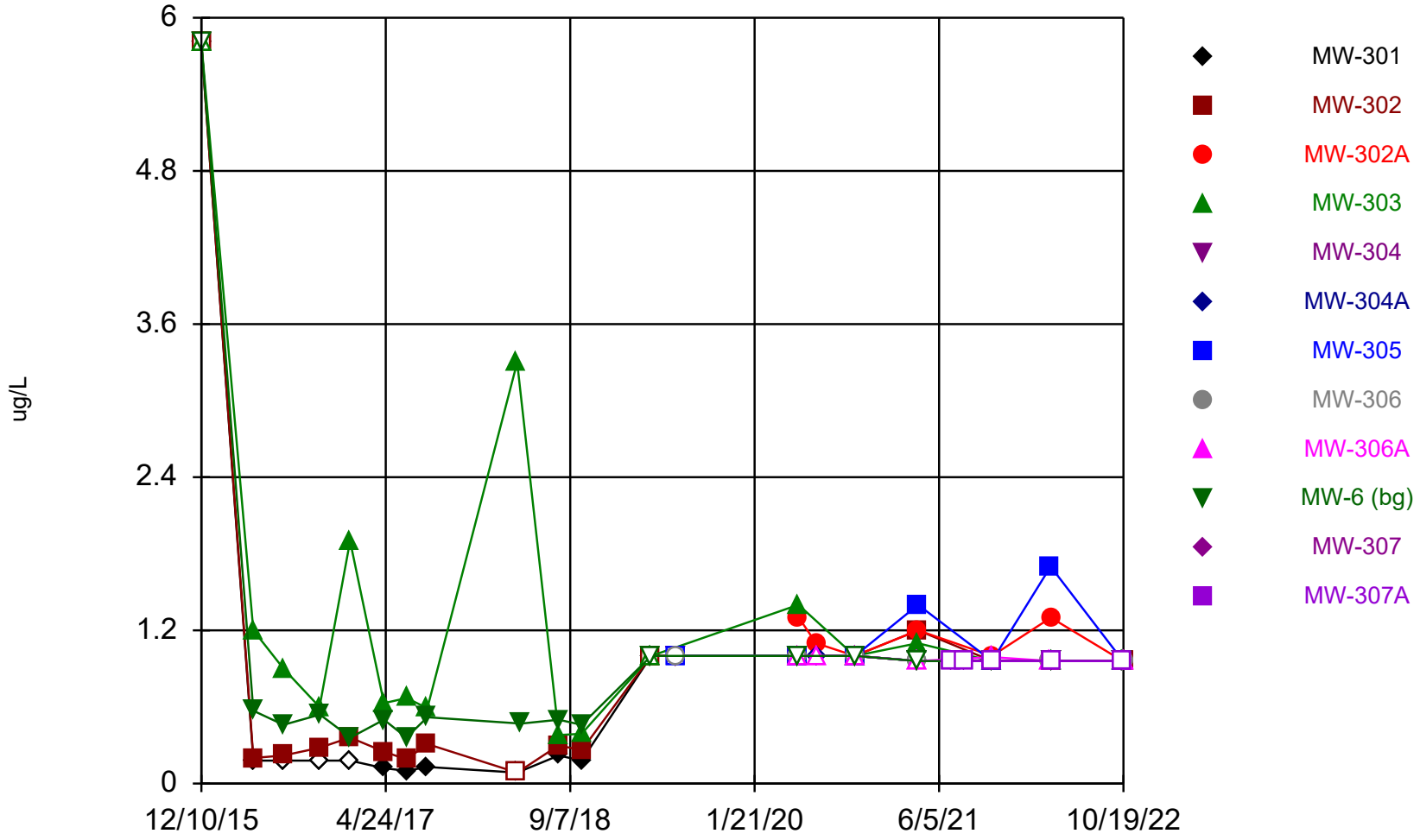
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	<1.5 (U)		
4/29/2016	0.25 (J)		
7/20/2016	0.24 (J)		
10/26/2016			
10/27/2016	0.31 (J)		
1/17/2017			
1/18/2017	0.21 (J)		
4/19/2017	0.25 (J)		
6/19/2017	0.26 (J)		
6/20/2017			
8/15/2017	0.31 (J)		
4/16/2018			
4/26/2018	0.26 (J)		
8/7/2018	0.28 (J)		
10/8/2018	<0.57 (U)		
4/15/2019	<1.1 (U)		
6/20/2019			
10/2/2019	<1.1 (U)		
5/19/2020			
5/20/2020	<1.1 (U)		
7/6/2020			
8/19/2020			
10/19/2020			
10/20/2020	<1.1 (U)		
2/23/2021			
4/7/2021	<1.3 (U)		
4/8/2021			
4/9/2021			
7/12/2021		5.5	6.8
8/13/2021		7.2	6.6
10/26/2021	<1.3 (U)		
10/27/2021		12	6.3
4/4/2022			
4/5/2022		16	5.7
4/6/2022	<1.2 (U)		
10/17/2022			
10/18/2022	<1.2 (U)	25	6.6
10/19/2022			

ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Selenium



Time Series Analysis Run 12/16/2022 12:15 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Selenium (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	<5.8 (U)	<5.8 (U)		<5.8 (U)					
4/29/2016	<0.18 (U)	0.2 (J)		1.2					
7/20/2016	<0.18 (U)	0.22 (J)		0.9 (J)					
10/26/2016	<0.18 (U)	0.28 (J)		0.6 (J)					
10/27/2016									
1/17/2017	<0.18 (U)	0.36 (J)		1.9					
1/18/2017									
4/19/2017	0.12 (J)	0.25 (J)		0.63 (J)					
6/19/2017	0.1 (J)	0.19 (J)							
6/20/2017				0.67 (J)					
8/15/2017	0.13 (J)	0.31 (J)		0.59 (J)					
4/16/2018	<0.086 (U)	<0.086 (U)		3.3					
4/26/2018									
8/7/2018	0.22 (J)	0.3 (J)		0.38 (J)					
10/8/2018	0.18 (J)	0.26 (J)		0.39 (J)					
4/15/2019	<1 (U)	<1 (U)		<1 (U)					
6/20/2019					<1 (U)		<1 (U)	<1 (U)	
5/19/2020	<1 (U)			1.4 (J)			<1 (U)	<1 (U)	<1 (U)
5/20/2020		<1 (U)	1.3 (J)		<1 (U)	<1 (U)			
7/6/2020			1.1 (J)			<1 (U)			<1 (U)
10/19/2020	<1 (U)	<1 (U)	<1 (U)	<1 (U)	<1 (U)	<1 (U)			
10/20/2020							<1 (U)	<1 (U)	<1 (U)
4/7/2021									
4/8/2021	<0.96 (U)			1.1 (J)					
4/9/2021		1.2 (J)	1.2 (J)		<0.96 (U)	<0.96 (U)	1.4 (J)	<0.96 (U)	<0.96 (U)
7/12/2021									
8/13/2021									
10/26/2021	<0.96 (U)			<0.96 (U)	<0.96 (U)	<0.96 (U)			
10/27/2021		<0.96 (U)	1 (J)				<0.96 (U)	<0.96 (U)	0.99 (J)
4/4/2022							1.7 (J)	<0.96 (U)	<0.96 (U)
4/5/2022	<0.96 (U)	<0.96 (U)	1.3 (J)	<0.96 (U)	<0.96 (U)	<0.96 (U)			
4/6/2022									
10/17/2022	<0.96 (U)		<0.96 (U)	<0.96 (U)	<0.96 (U)	<0.96 (U)			
10/18/2022							<0.96 (U)		
10/19/2022		<0.96 (U)						<0.96 (U)	<0.96 (U)

ND substitution: RL or RL/2 if <15% NDs.

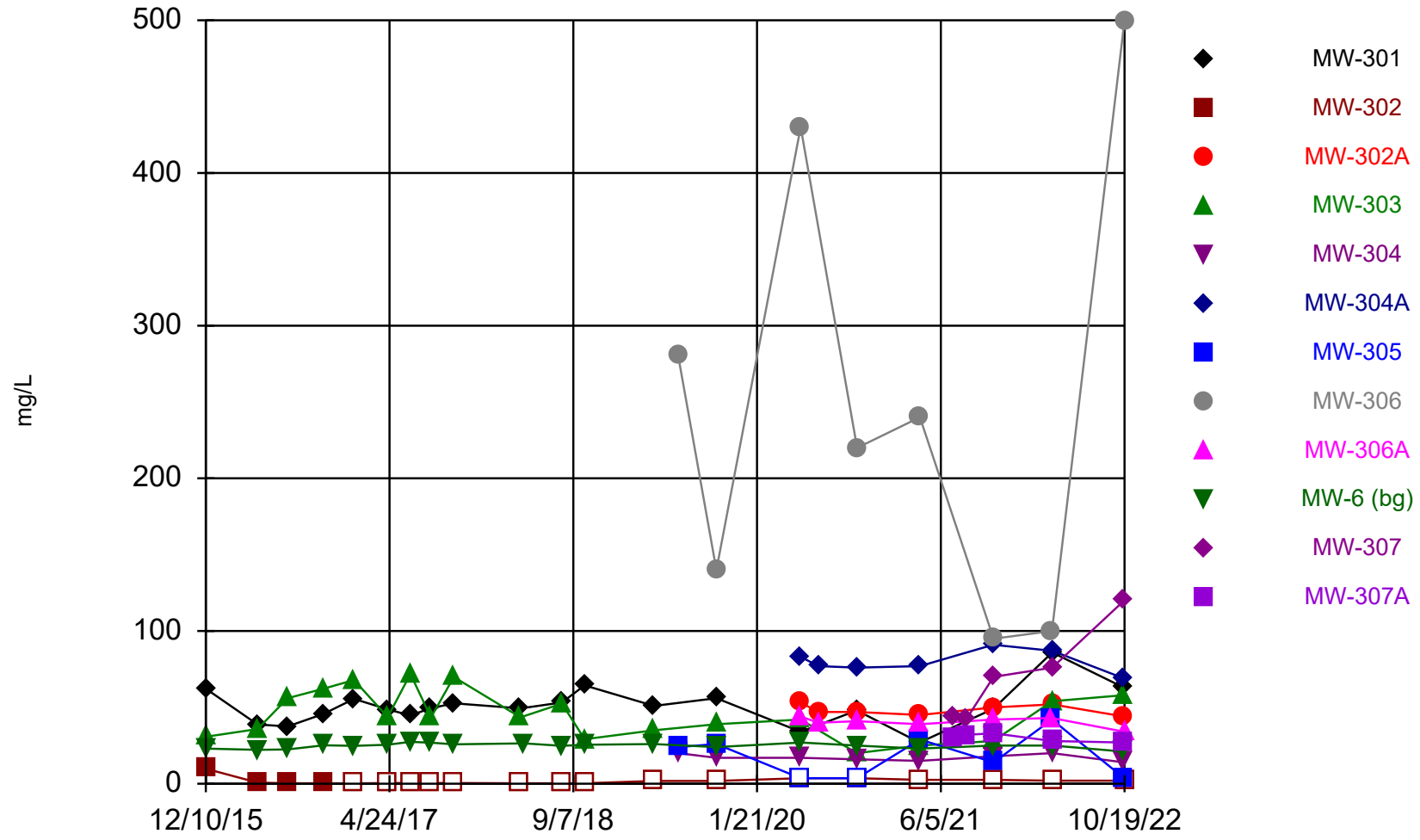
Time Series

Constituent: Selenium (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	<5.8 (U)		
4/29/2016	0.57 (J)		
7/20/2016	0.46 (J)		
10/26/2016			
10/27/2016	0.54 (J)		
1/17/2017			
1/18/2017	0.36 (J)		
4/19/2017	0.5 (J)		
6/19/2017	0.36 (J)		
6/20/2017			
8/15/2017	0.52 (J)		
4/16/2018			
4/26/2018	0.47 (J)		
8/7/2018	0.5 (J)		
10/8/2018	0.46 (J)		
4/15/2019	<1 (U)		
6/20/2019			
5/19/2020			
5/20/2020	<1 (U)		
7/6/2020			
10/19/2020			
10/20/2020	<1 (U)		
4/7/2021	<0.96 (U)		
4/8/2021			
4/9/2021			
7/12/2021		<0.96 (U)	<0.96 (U)
8/13/2021		<0.96	<0.96
10/26/2021	<0.96 (U)		
10/27/2021		<0.96 (U)	<0.96 (U)
4/4/2022			
4/5/2022		<0.96 (U)	<0.96 (U)
4/6/2022	<0.96 (U)		
10/17/2022			
10/18/2022	<0.96 (U)	<0.96 (U)	<0.96 (U)
10/19/2022			

Hollow symbols indicate censored values.

Sulfate



Time Series Analysis Run 12/16/2022 12:15 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Sulfate (mg/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	62.2	9.8		30.8					
4/29/2016	38.8	0.72 (J)		35.8					
7/20/2016	37.5	0.29 (J)		56					
10/26/2016	45.7	0.32 (J)		62.2					
10/27/2016									
1/17/2017	55.6	<0.15 (U)		67.9					
1/18/2017									
4/19/2017	48.7	<0.5 (U)		43.7					
6/19/2017	44.7	<0.5 (U)							
6/20/2017				71.9					
8/15/2017	49.4	<0.5 (U)		43.4					
10/16/2017	52.7	<0.5 (U)		69.9					
4/16/2018	49.3	<0.24 (U)		43.5					
4/26/2018									
8/7/2018	53.2	<0.24 (U)		52.5					
10/8/2018	64.4	<0.24 (U)		29.1					
4/15/2019	51	<1.8 (U)		35					
6/20/2019					20		24	280	
10/2/2019	56	<1.8 (U)		39	17		26	140	
5/19/2020	34			42			<3.6 (U)	430	44
5/20/2020		<3.6 (U)	53		17	83			
7/6/2020			47			77			40
10/19/2020	48	<3.6 (U)	47	20	16	76			
10/20/2020							<3.6 (U)	220	41
4/7/2021									
4/8/2021	27			25					
4/9/2021		<2.5 (U)	45		15	77	29	240	39
7/12/2021									
8/13/2021									
10/26/2021	49			28	18	91			
10/27/2021		<2.5 (U)	50				14	95	42
4/4/2022							42	100	43
4/5/2022	86	<2 (U)	52	54	20	87			
4/6/2022									
10/17/2022	63		44	58	14	69			
10/18/2022							3.6 (J)		
10/19/2022		<2 (U)						500	34

ND substitution: RL or RL/2 if <15% NDs.

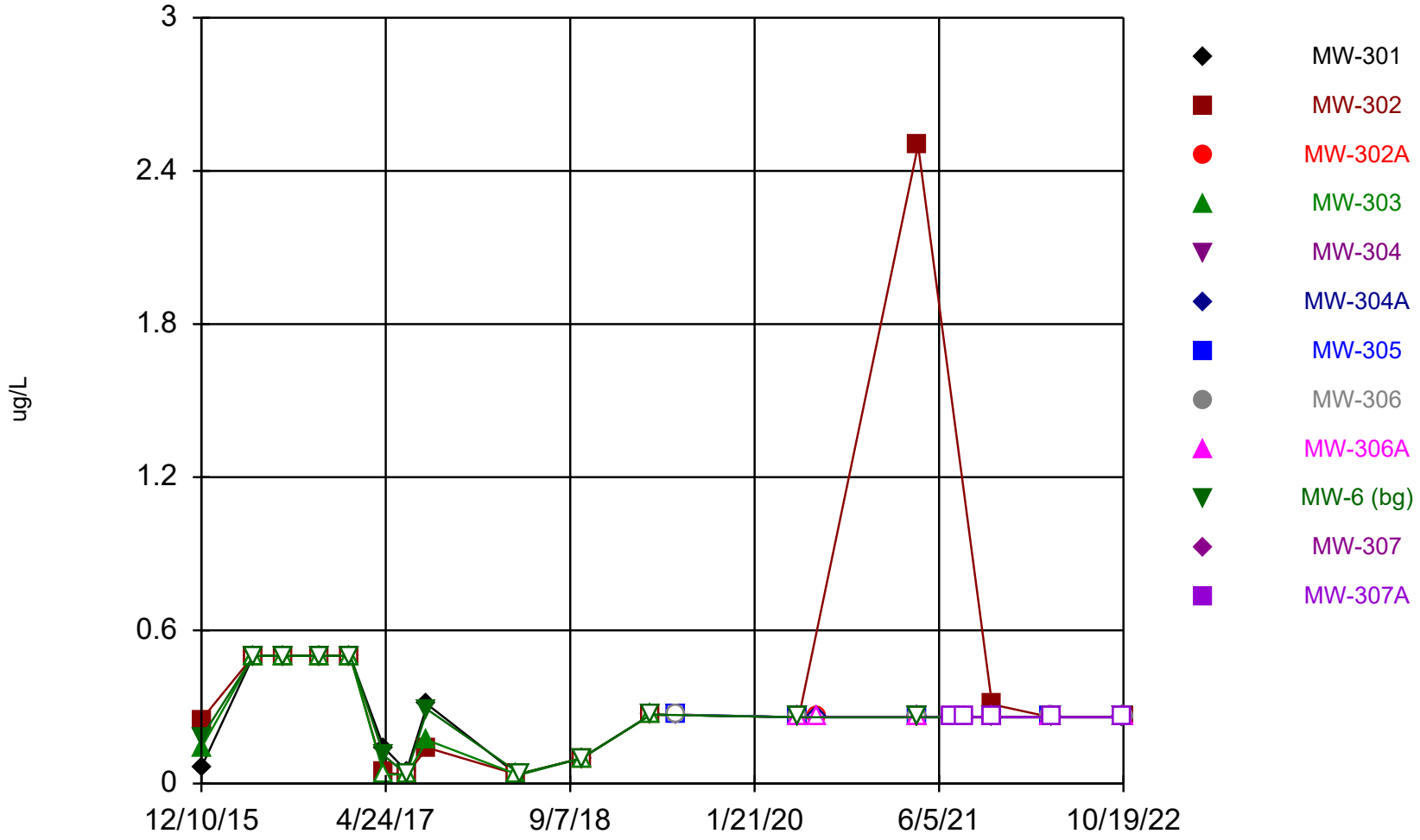
Time Series

Constituent: Sulfate (mg/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	23		
4/29/2016	22.2		
7/20/2016	22.5		
10/26/2016			
10/27/2016	25.2		
1/17/2017			
1/18/2017	24.8		
4/19/2017	25.5		
6/19/2017	27.4		
6/20/2017			
8/15/2017	26.9		
10/16/2017	25.8		
4/16/2018			
4/26/2018	26.4		
8/7/2018	24.8		
10/8/2018	25.5		
4/15/2019	26		
6/20/2019			
10/2/2019	24		
5/19/2020			
5/20/2020	27		
7/6/2020			
10/19/2020			
10/20/2020	25		
4/7/2021	23		
4/8/2021			
4/9/2021			
7/12/2021		44	30
8/13/2021		42	32
10/26/2021	25		
10/27/2021		70	33
4/4/2022			
4/5/2022		76	28
4/6/2022	25		
10/17/2022			
10/18/2022	21	120	27
10/19/2022			

Hollow symbols indicate censored values.

Thallium



Time Series Analysis Run 12/16/2022 12:15 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Thallium (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	0.064 (J)	0.25 (J)		0.14 (J)					
4/29/2016	<0.5 (U)	<0.5 (U)		<0.5 (U)					
7/20/2016	<0.5 (U)	<0.5 (U)		<0.5 (U)					
10/26/2016	<0.5 (U)	<0.5 (U)		<0.5 (U)					
10/27/2016									
1/17/2017	<0.5 (U)	<0.5 (U)		<0.5 (U)					
1/18/2017									
4/19/2017	0.14 (J)	0.042 (J)		<0.036 (U)					
6/19/2017	0.05 (J)	<0.036 (U)							
6/20/2017				<0.036 (U)					
8/15/2017	0.31 (J)	0.14 (J)		0.17 (J)					
4/16/2018	<0.036 (U)	<0.036 (U)		<0.036 (U)					
4/26/2018									
10/8/2018	<0.099 (U)	<0.099 (U)		<0.099 (U)					
4/15/2019	<0.27 (U)	<0.27 (U)		<0.27 (U)					
6/20/2019					<0.27 (U)		<0.27 (U)	<0.27 (U)	
5/19/2020	<0.26 (U)			<0.26 (U)			<0.26 (U)	<0.26 (U)	<0.26 (U)
5/20/2020		<0.26 (U)	<0.26 (U)		<0.26 (U)	<0.26 (U)			
7/6/2020			<0.26 (U)			<0.26 (U)			<0.26 (U)
4/7/2021									
4/8/2021	<0.26 (U)			<0.26 (U)					
4/9/2021		2.5 (B)	<0.26 (U)		<0.26 (U)	<0.26 (U)	<0.26 (U)	<0.26 (U)	<0.26 (U)
7/12/2021									
8/13/2021									
10/26/2021	<0.26 (U)			<0.26 (U)	<0.26 (U)	<0.26 (U)			
10/27/2021		0.31 (J)	<0.26 (U)				<0.26 (U)	<0.26 (U)	<0.26 (U)
4/4/2022							<0.26 (U)	<0.26 (U)	<0.26 (U)
4/5/2022	<0.26 (U)	<0.26 (U)	<0.26 (U)	<0.26 (U)	<0.26 (U)	<0.26 (U)			
4/6/2022									
10/17/2022	<0.26 (U)		<0.26 (U)	<0.26 (U)	<0.26 (U)	<0.26 (U)			
10/18/2022							<0.26 (U)		
10/19/2022		<0.26 (U)						<0.26 (U)	<0.26 (U)

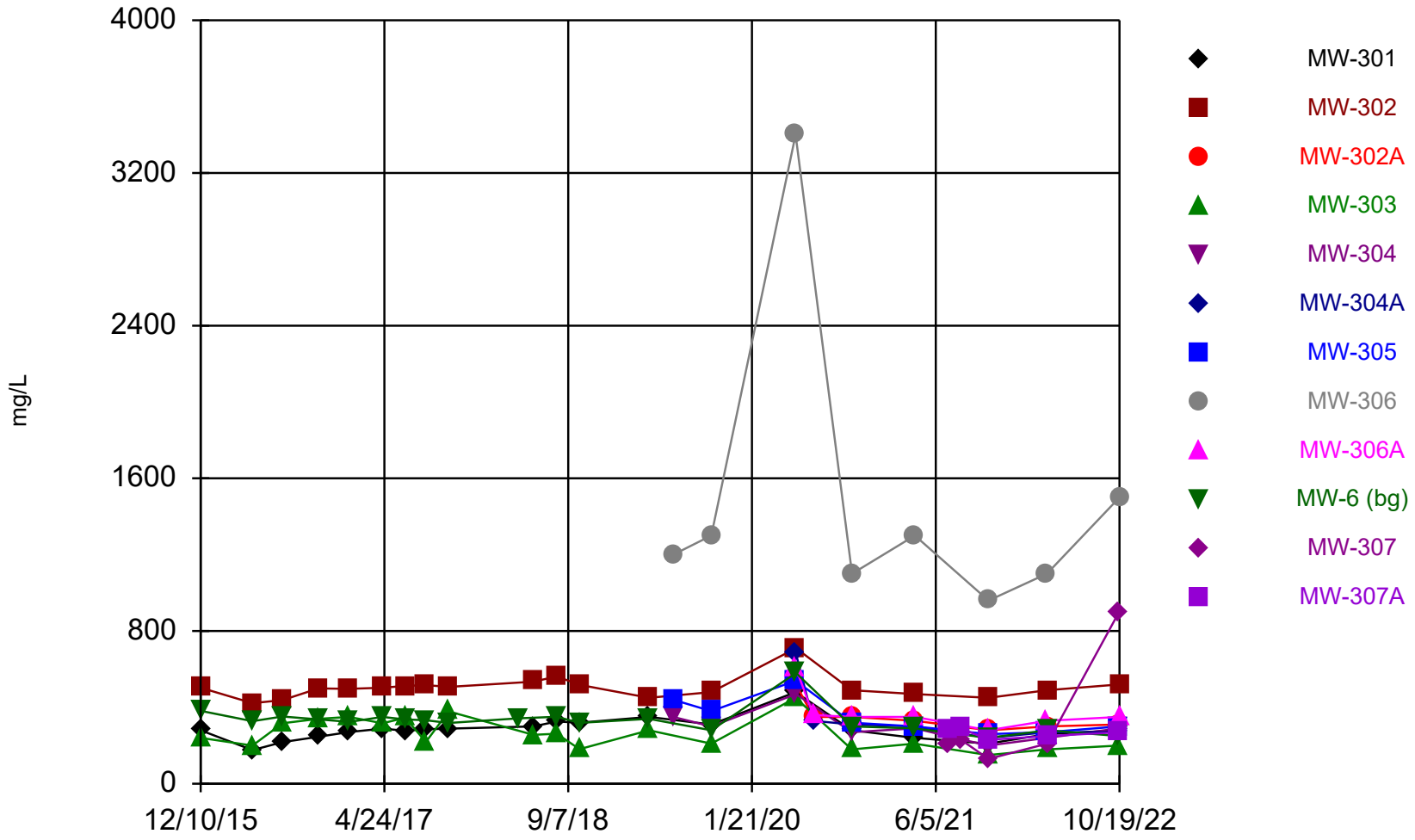
ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Thallium (ug/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	0.18 (J)		
4/29/2016	<0.5 (U)		
7/20/2016	<0.5 (U)		
10/26/2016			
10/27/2016	<0.5 (U)		
1/17/2017			
1/18/2017	<0.5 (U)		
4/19/2017	0.11 (J)		
6/19/2017	<0.036 (U)		
6/20/2017			
8/15/2017	0.29 (J)		
4/16/2018			
4/26/2018	<0.036 (U)		
10/8/2018	<0.099 (U)		
4/15/2019	<0.27 (U)		
6/20/2019			
5/19/2020			
5/20/2020	<0.26 (U)		
7/6/2020			
4/7/2021	<0.26 (U)		
4/8/2021			
4/9/2021			
7/12/2021		<0.26 (U)	<0.26 (U)
8/13/2021		<0.26	<0.26
10/26/2021	<0.26 (U)		
10/27/2021		<0.26 (U)	<0.26 (U)
4/4/2022			
4/5/2022		<0.26 (U)	<0.26 (U)
4/6/2022	<0.26 (U)		
10/17/2022			
10/18/2022	<0.26 (U)	<0.26 (U)	<0.26 (U)
10/19/2022			

Total Dissolved Solids



Time Series Analysis Run 12/16/2022 12:15 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	280	503		240					
4/29/2016	176	422		200					
7/20/2016	218	438		317					
10/26/2016	246	499		340					
10/27/2016									
1/17/2017	271	497		350					
1/18/2017									
4/19/2017	289	503		317					
6/19/2017	278	512							
6/20/2017				346					
8/15/2017	285	517		219					
10/16/2017	289	507		379					
4/26/2018									
6/4/2018	300	535		256					
8/7/2018	326	562		262					
10/8/2018	320	518		181					
4/15/2019	350	450		280					
6/20/2019					350		440	1200	
10/2/2019	310	480		210	300		380	1300	
5/19/2020	480			450			540	3400	610
5/20/2020		710	520		470	680			
7/6/2020			350			330			360
10/19/2020	280	490	350	180	270	310			
10/20/2020							320	1100	350
4/7/2021									
4/8/2021	240			210					
4/9/2021		470	330		290	300	300	1300	350
7/12/2021									
8/13/2021									
10/26/2021	210			150	200	240			
10/27/2021		450	280				260	960	280
4/4/2022							270	1100	330
4/5/2022	260	490	300	180	240	270			
4/6/2022									
10/17/2022	280		310	200	290	270			
10/18/2022							300		
10/19/2022		520						1500	350

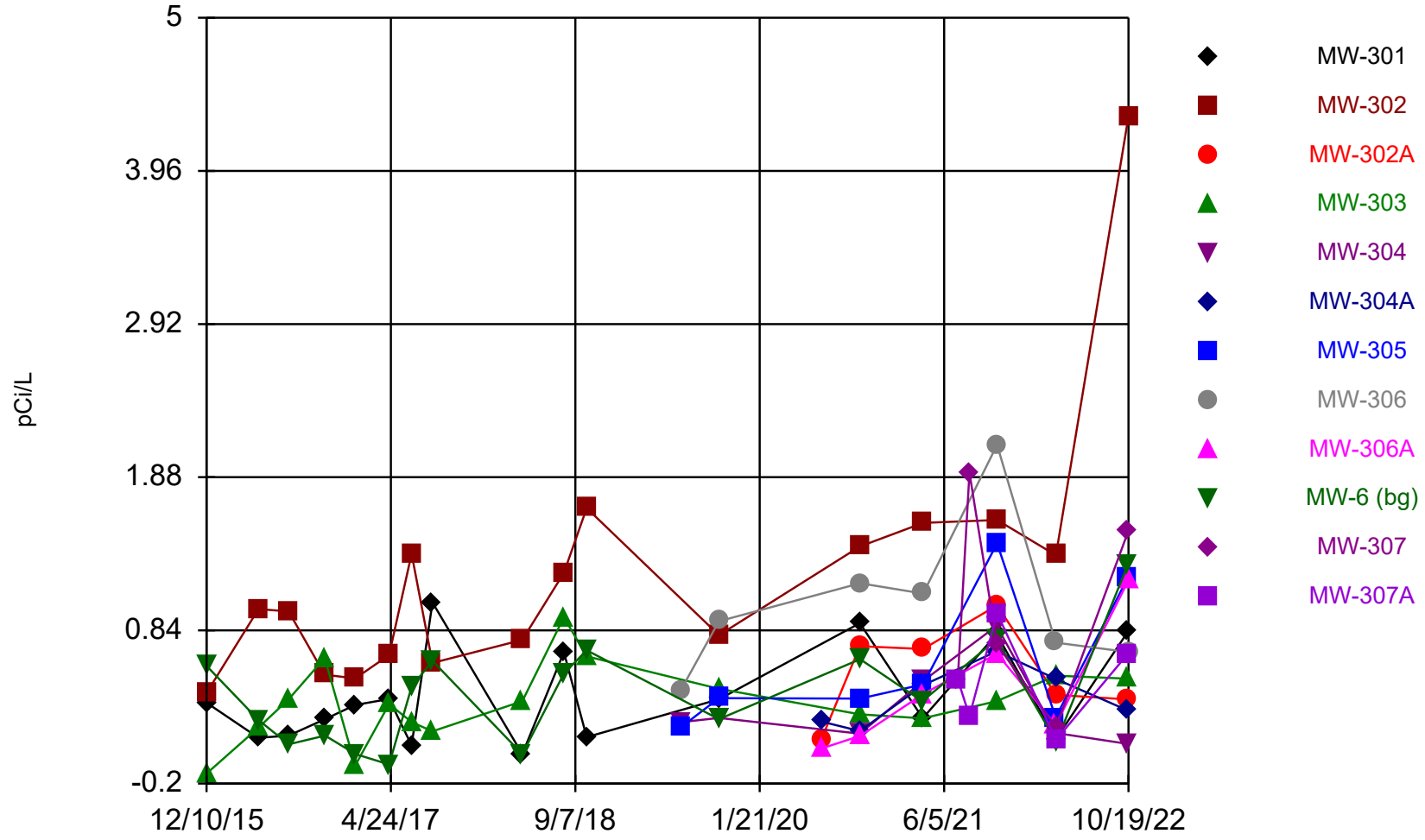
Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	382		
4/29/2016	328		
7/20/2016	352		
10/26/2016			
10/27/2016	337		
1/17/2017			
1/18/2017	324		
4/19/2017	350		
6/19/2017	337		
6/20/2017			
8/15/2017	333		
10/16/2017	318		
4/26/2018	343		
6/4/2018			
8/7/2018	351		
10/8/2018	319		
4/15/2019	340		
6/20/2019			
10/2/2019	280		
5/19/2020			
5/20/2020	580		
7/6/2020			
10/19/2020			
10/20/2020	300		
4/7/2021	290		
4/8/2021			
4/9/2021			
7/12/2021		210	280
8/13/2021		230	290
10/26/2021	240		
10/27/2021		130	230
4/4/2022			
4/5/2022		210	250
4/6/2022	280		
10/17/2022			
10/18/2022	250	900	270
10/19/2022			

Total Radium



Time Series Analysis Run 12/16/2022 12:15 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Time Series

Constituent: Total Radium (pCi/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	0.349	0.415		-0.132					
4/29/2016	0.111	0.985		0.18					
7/20/2016	0.126	0.969		0.372					
10/26/2016	0.236	0.539		0.653					
10/27/2016									
1/17/2017	0.334	0.514		-0.077					
1/18/2017									
4/19/2017	0.374	0.672		0.339					
6/19/2017	0.0591	1.36							
6/20/2017				0.217					
8/15/2017	1.03	0.619		0.155					
4/16/2018	0	0.776		0.359					
8/7/2018	0.692	1.23		0.929					
10/8/2018	0.115	1.67		0.664					
6/20/2019					0.217		0.181	0.432	
10/2/2019	0.372	0.807		0.444	0.246		0.38	0.902	
7/6/2020			0.0963			0.221			0.0377
10/19/2020	0.889	1.41	0.732	0.27	0.139	0.157			
10/20/2020							0.377	1.16	0.124
4/7/2021									
4/8/2021	0.244			0.243					
4/9/2021		1.57	0.714		0.497	0.468	0.474	1.09	0.408
7/12/2021									
8/13/2021									
10/26/2021	0.814			0.359	0.87	0.698			
10/27/2021		1.59	1.01				1.43	2.1	0.682
4/4/2022							0.249	0.757	0.198
4/5/2022	0.103	1.35	0.402	0.533	0.143	0.51			
4/6/2022									
10/17/2022	0.83		0.371	0.512	0.0692	0.296			
10/18/2022							1.2		
10/19/2022		4.33						0.693	1.18

Time Series

Constituent: Total Radium (pCi/L) Analysis Run 12/16/2022 12:16 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	0.599		
4/29/2016	0.232		
7/20/2016	0.0668		
10/26/2016			
10/27/2016	0.126		
1/17/2017			
1/18/2017	0		
4/19/2017	-0.07		
6/19/2017	0.457		
6/20/2017			
8/15/2017	0.633		
4/16/2018	0		
8/7/2018	0.547		
10/8/2018	0.705		
6/20/2019			
10/2/2019	0.237		
7/6/2020			
10/19/2020			
10/20/2020	0.644		
4/7/2021	0.359		
4/8/2021			
4/9/2021			
7/12/2021		0.499	0.509
8/13/2021		1.91	0.258
10/26/2021	0.779		
10/27/2021		0.743	0.957
4/4/2022			
4/5/2022		0.183	0.0954
4/6/2022	0.0823		
10/17/2022			
10/18/2022	1.29	1.51	0.683
10/19/2022			

Attachment 2

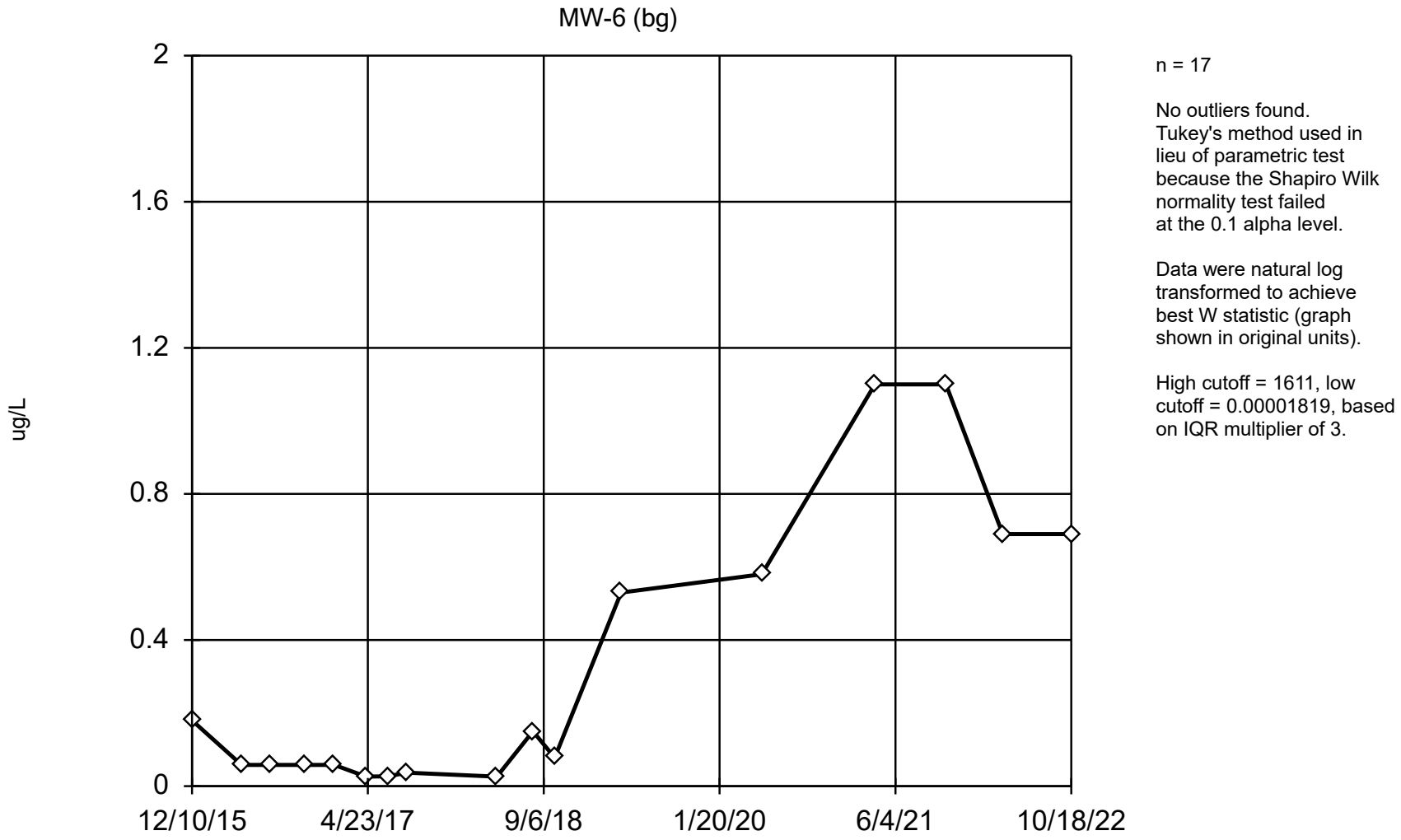
Outliers Analysis

Outlier Analysis

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev Printed 1/1/2023, 4:27 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Antimony (ug/L)	MW-6 (bg)	No	n/a	n/a	NP (nrm)	NaN	17	0.3204	0.381	unknown	ShapiroWilk
Arsenic (ug/L)	MW-6 (bg)	No	n/a	n/a	NP (nrm)	NaN	19	0.6942	0.9609	unknown	ShapiroWilk
Barium (ug/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	19	45.29	2.015	normal	ShapiroWilk
Beryllium (ug/L)	MW-6 (bg)	No	n/a	n/a	NP (nrm)	NaN	17	0.1392	0.1076	unknown	ShapiroWilk
Boron (ug/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	20	55.24	23.15	ln(x)	ShapiroWilk
Cadmium (ug/L)	**MW-6 (bg)**	**Yes**	**0.56**	**12/10/2015**	**Dixon`s**	**0.05**	**17**	**0.06812**	**0.1279**	**ln(x)**	**ShapiroWilk**
Calcium (mg/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	20	69.05	2.475	normal	ShapiroWilk
Chloride (mg/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	20	6.675	0.7684	normal	ShapiroWilk
Chromium (ug/L)	MW-6 (bg)	No	n/a	n/a	NP (nrm)	NaN	19	0.9247	0.1671	unknown	ShapiroWilk
Cobalt (ug/L)	MW-6 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	19	0.18	0.1783	unknown	ShapiroWilk
Field pH (Std. Units)	MW-6 (bg)	No	n/a	n/a	NP (nrm)	NaN	20	7.562	0.2242	unknown	ShapiroWilk
Fluoride (mg/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	20	0.1886	0.1272	ln(x)	ShapiroWilk
Lead (ug/L)	**MW-6 (bg)**	**Yes**	**1.9**	**12/10/2015**	**Dixon`s**	**0.05**	**19**	**0.2627**	**0.4036**	**normal**	**ShapiroWilk**
Lithium (ug/L)	MW-6 (bg)	No	n/a	n/a	NP (nrm)	NaN	18	3.35	1.072	unknown	ShapiroWilk
Mercury (ug/L)	MW-6 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	16	0.07413	0.04168	unknown	ShapiroWilk
Molybdenum (ug/L)	MW-6 (bg)	No	n/a	n/a	NP (nrm)	NaN	19	0.7284	0.4845	unknown	ShapiroWilk
Selenium (ug/L)	MW-6 (bg)	No	n/a	n/a	NP (nrm)	NaN	18	0.9656	1.233	unknown	ShapiroWilk
Sulfate (mg/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	20	24.8	1.715	normal	ShapiroWilk
Thallium (ug/L)	MW-6 (bg)	No	n/a	n/a	NP (nrm)	NaN	16	0.2701	0.1602	unknown	ShapiroWilk
Total Dissolved Solids (mg/L)	**MW-6 (bg)**	**Yes**	**580**	**5/20/2020**	**Dixon`s**	**0.05**	**20**	**331.7**	**68.5**	**normal**	**ShapiroWilk**
Total Radium (pCi/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	17	0.3934	0.3615	normal	ShapiroWilk

Tukey's Outlier Screening



n = 17

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1611, low cutoff = 0.00001819, based on IQR multiplier of 3.

Constituent: Antimony Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tukey's Outlier Screening

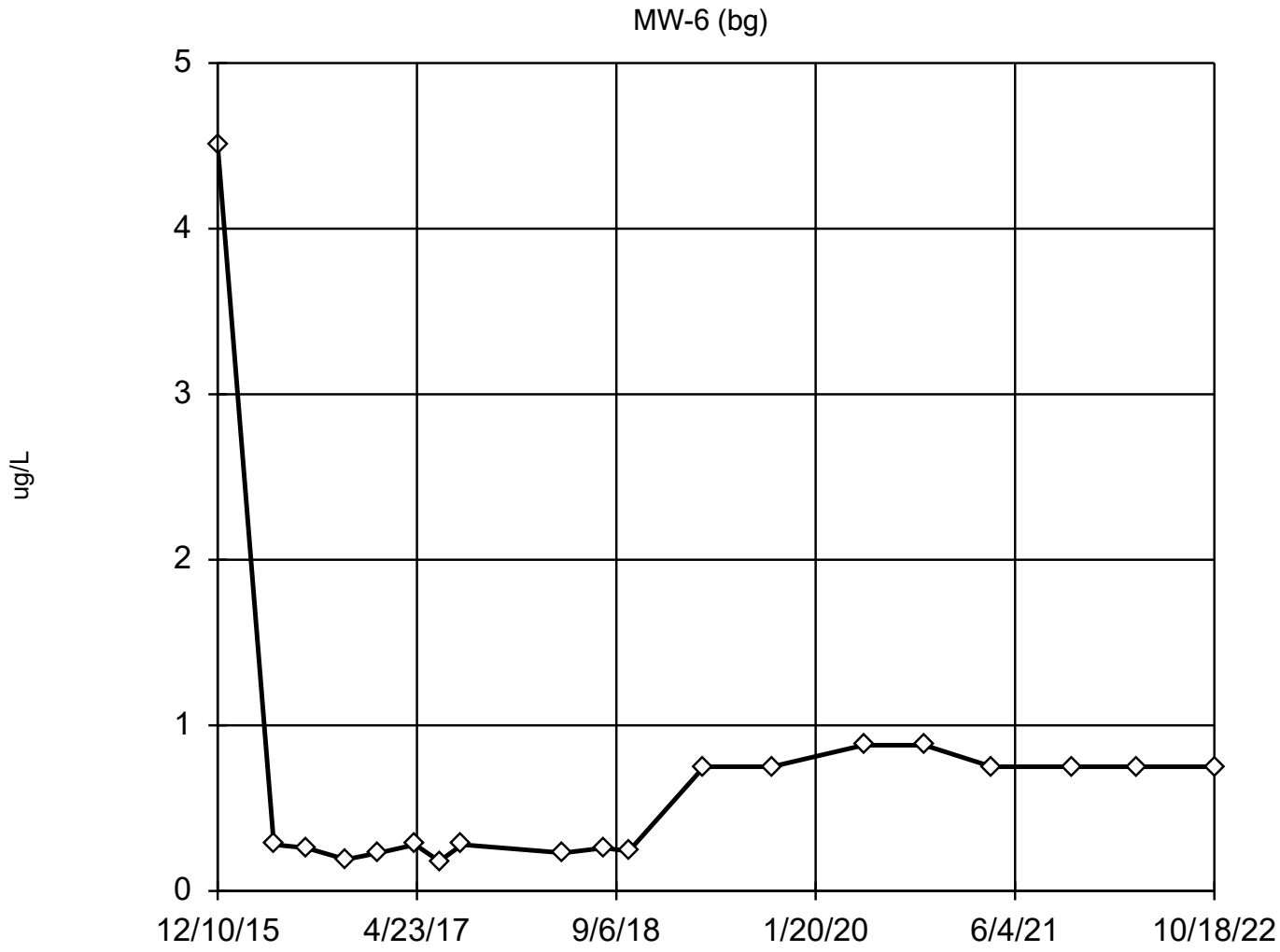
Constituent: Antimony (ug/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	0.18 (J)
4/29/2016	<0.058 (U)
7/20/2016	<0.058 (U)
10/27/2016	<0.058 (U)
1/18/2017	<0.058 (U)
4/19/2017	<0.026 (U)
6/19/2017	0.027 (J)
8/15/2017	0.037 (J)
4/26/2018	<0.026 (U)
8/7/2018	<0.15 (U)
10/8/2018	<0.078 (U)
4/15/2019	<0.53 (U)
5/20/2020	<0.58 (U)
4/7/2021	<1.1 (U)
10/26/2021	<1.1 (U)
4/6/2022	<0.69 (U)
10/18/2022	<0.69 (U)

ND substitution: RL or RL/2 if <15% NDs.

Tukey's Outlier Screening



n = 19

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 22.89, low cutoff = 0.007864, based on IQR multiplier of 3.

Constituent: Arsenic Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tukey's Outlier Screening

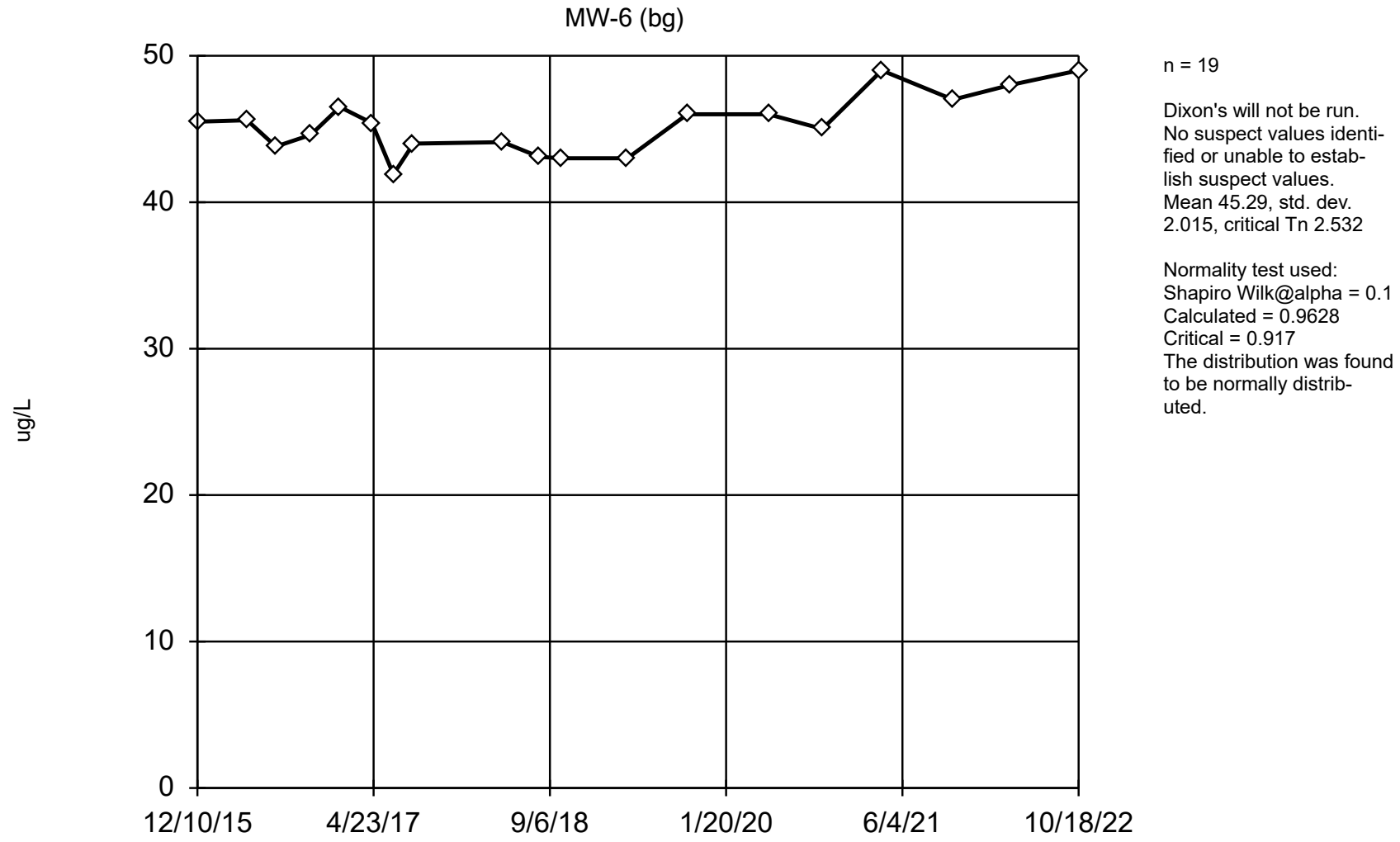
Constituent: Arsenic (ug/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	<4.5 (U)
4/29/2016	0.28 (J)
7/20/2016	0.26 (J)
10/27/2016	0.19 (J)
1/18/2017	0.23 (J)
4/19/2017	0.28 (J)
6/19/2017	0.18 (J)
8/15/2017	0.28 (J)
4/26/2018	0.23 (J)
8/7/2018	0.26 (J)
10/8/2018	0.24 (J)
4/15/2019	<0.75 (U)
10/2/2019	<0.75 (U)
5/20/2020	<0.88 (U)
10/20/2020	<0.88 (U)
4/7/2021	<0.75 (U)
10/26/2021	<0.75 (U)
4/6/2022	<0.75 (U)
10/18/2022	<0.75 (U)

ND substitution: RL or RL/2 if <15% NDs.

EPA Screening (suspected outliers for Dixon's Test)



n = 19

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 45.29, std. dev. 2.015, critical Tn 2.532

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9628
Critical = 0.917
The distribution was found to be normally distributed.

Constituent: Barium Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

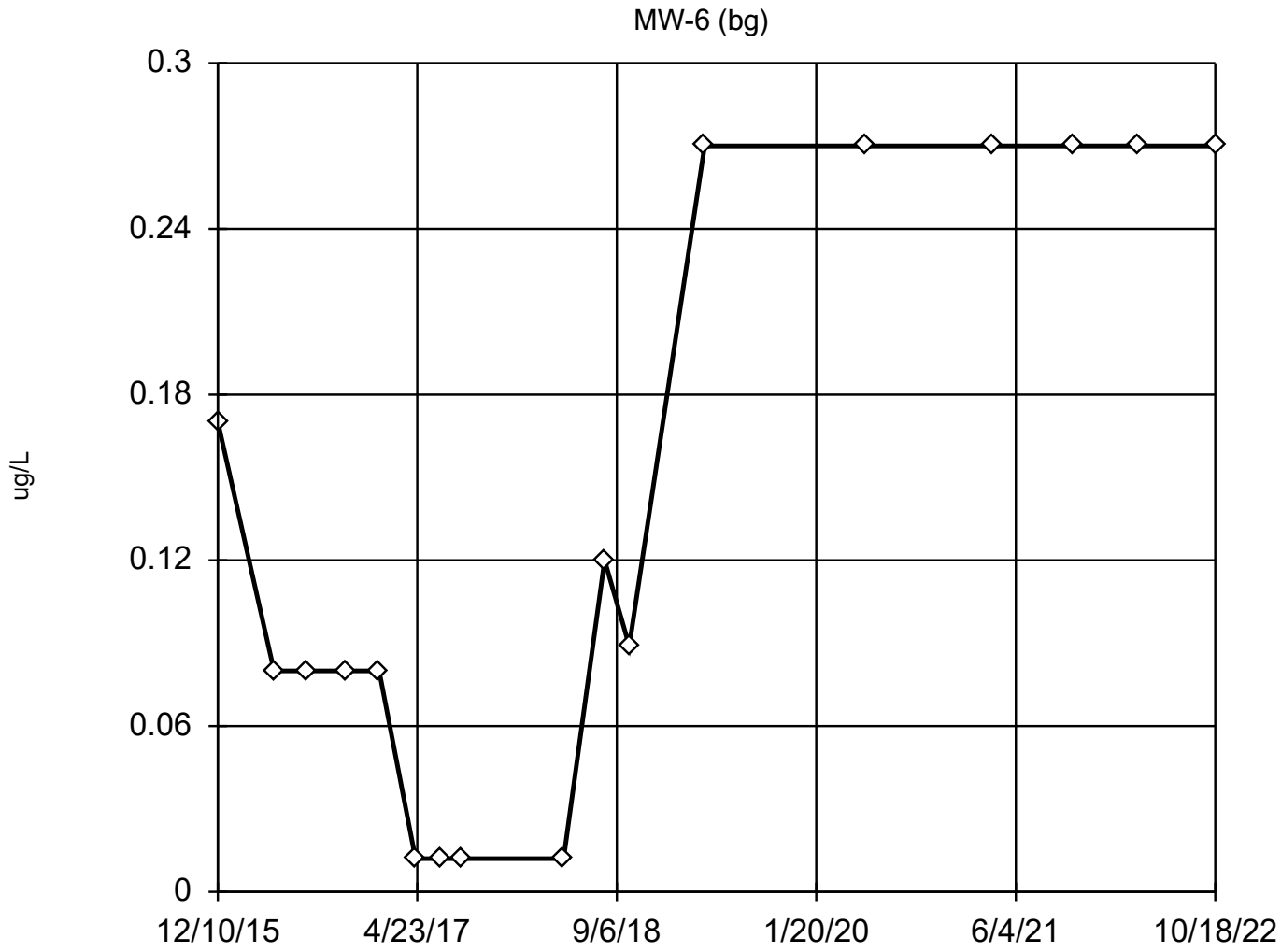
EPA 1989 Outlier Screening

Constituent: Barium (ug/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	45.5
4/29/2016	45.6
7/20/2016	43.8
10/27/2016	44.6
1/18/2017	46.5
4/19/2017	45.4
6/19/2017	41.9
8/15/2017	44
4/26/2018	44.1
8/7/2018	43.1
10/8/2018	43
4/15/2019	43
10/2/2019	46
5/20/2020	46
10/20/2020	45
4/7/2021	49 (B)
10/26/2021	47
4/6/2022	48
10/18/2022	49

Tukey's Outlier Screening



n = 17

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2.22, low cutoff = -0.5992, based on IQR multiplier of 3.

Constituent: Beryllium Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tukey's Outlier Screening

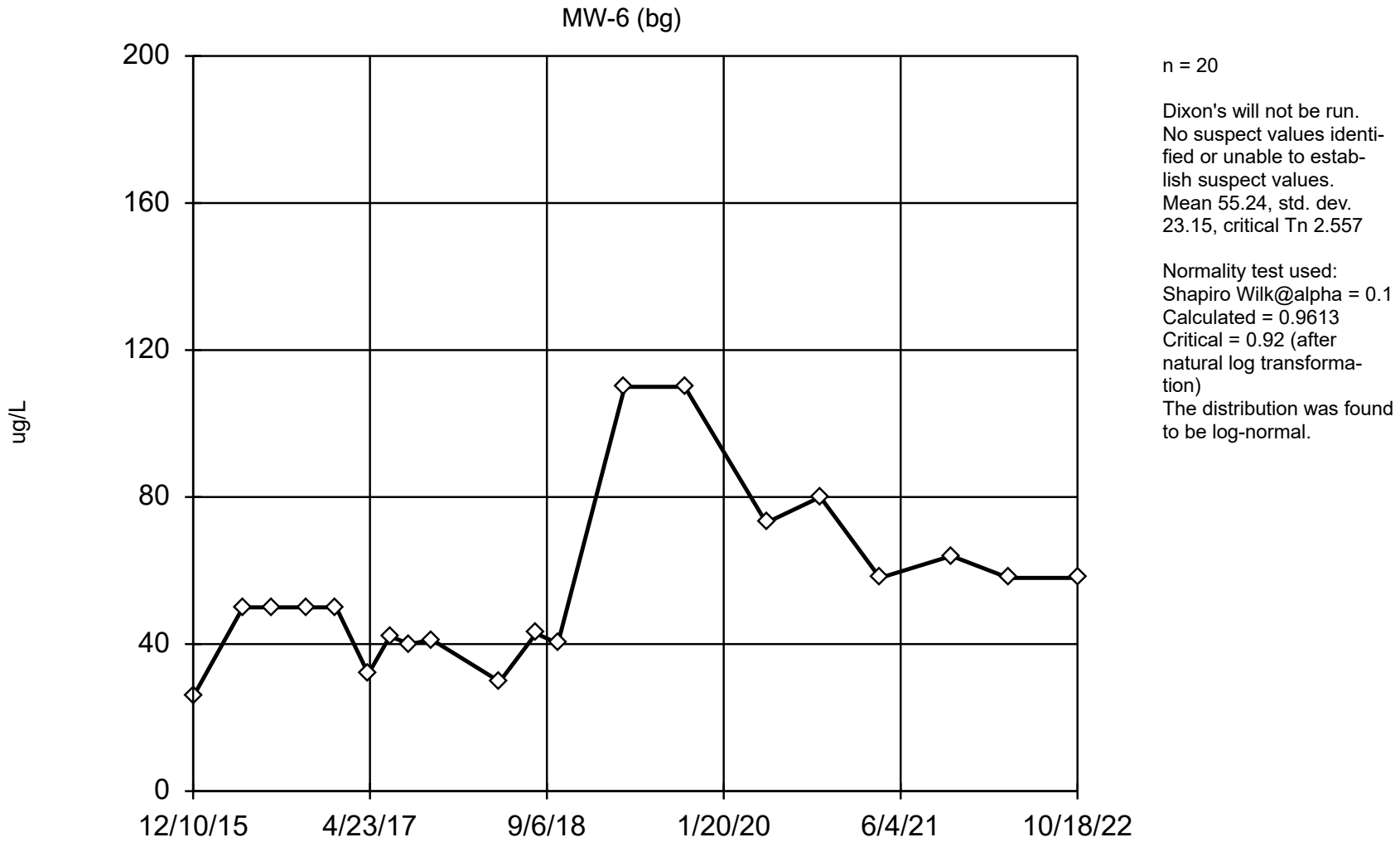
Constituent: Beryllium (ug/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	<0.17 (U)
4/29/2016	<0.08 (U)
7/20/2016	<0.08 (U)
10/27/2016	<0.08 (U)
1/18/2017	<0.08 (U)
4/19/2017	<0.012 (U)
6/19/2017	<0.012 (U)
8/15/2017	<0.012 (U)
4/26/2018	<0.012 (U)
8/7/2018	<0.12 (U)
10/8/2018	<0.089 (U)
4/15/2019	<0.27 (U)
5/20/2020	<0.27 (U)
4/7/2021	<0.27 (U)
10/26/2021	<0.27 (U)
4/6/2022	<0.27 (U)
10/18/2022	<0.27 (U)

ND substitution: RL or RL/2 if <15% NDs.

EPA Screening (suspected outliers for Dixon's Test)



n = 20

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 55.24, std. dev. 23.15, critical Tn 2.557

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9613
Critical = 0.92 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Boron Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

EPA 1989 Outlier Screening

Constituent: Boron (ug/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

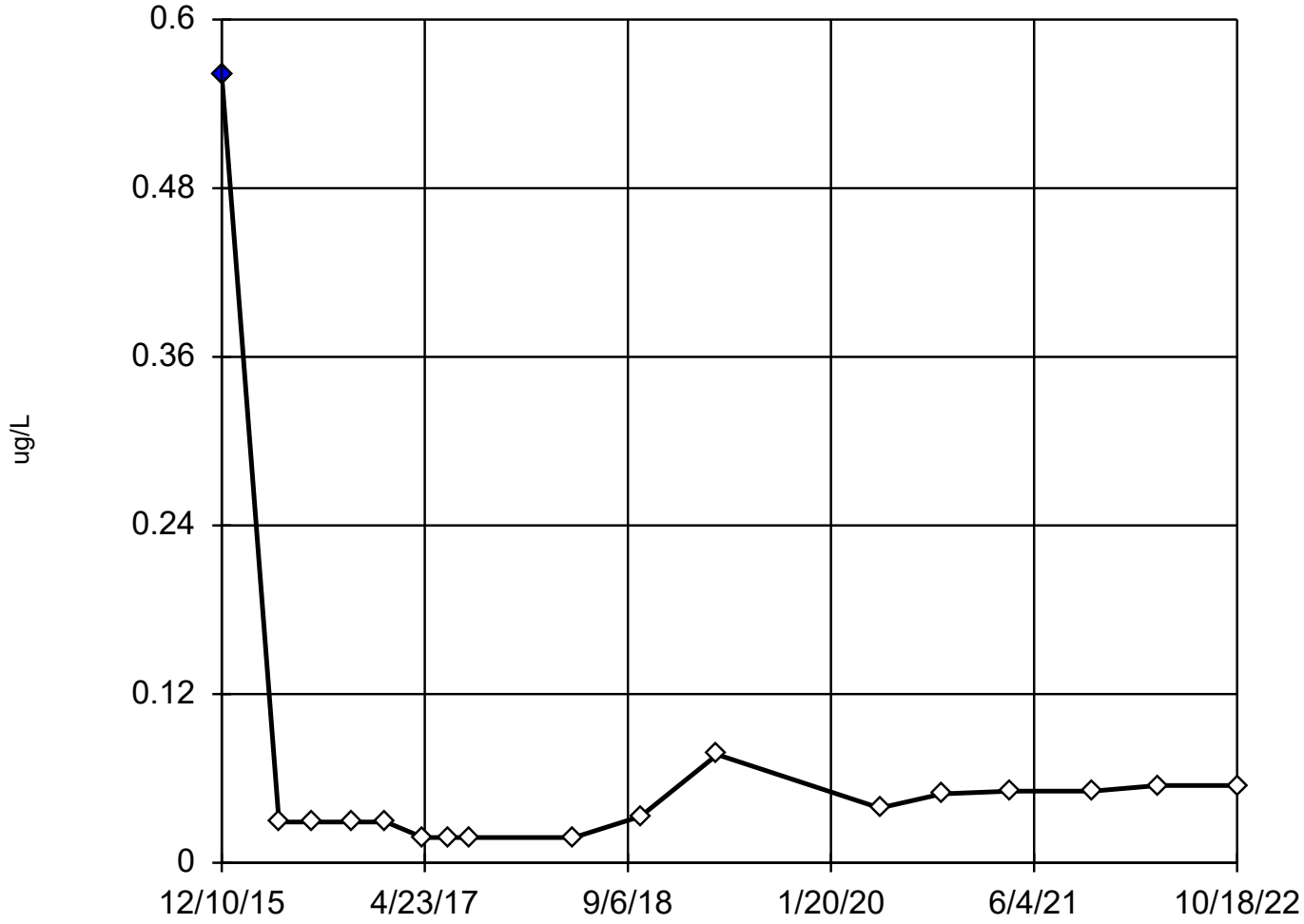
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	25.7 (J)
4/29/2016	<50 (U)
7/20/2016	<50 (U)
10/27/2016	<50 (U)
1/18/2017	<50 (U)
4/19/2017	31.9 (J)
6/19/2017	42.1 (J)
8/15/2017	40 (J)
10/16/2017	41.2 (J)
4/26/2018	29.8 (J)
8/7/2018	42.9 (J)
10/8/2018	40.2 (J)
4/15/2019	<110 (U)
10/2/2019	<110 (U)
5/20/2020	<73 (U)
10/20/2020	<80 (U)
4/7/2021	<58 (U)
10/26/2021	64 (J)
4/6/2022	<58 (U)
10/18/2022	<58 (U)

ND substitution: RL or RL/2 if <15% NDs.

Dixon's Outlier Test

MW-6 (bg)



n = 17

Statistical outlier is drawn as solid.
Testing for 1 high outlier.
Mean = 0.06812.
Std. Dev. = 0.1279.
<0.56 (U): c = 0.6751
tabl = 0.49.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9092
Critical = 0.906 (after natural log transformation)
The distribution, after removal of suspect value, was found to be log-normal.

Constituent: Cadmium Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Dixon's Outlier Test

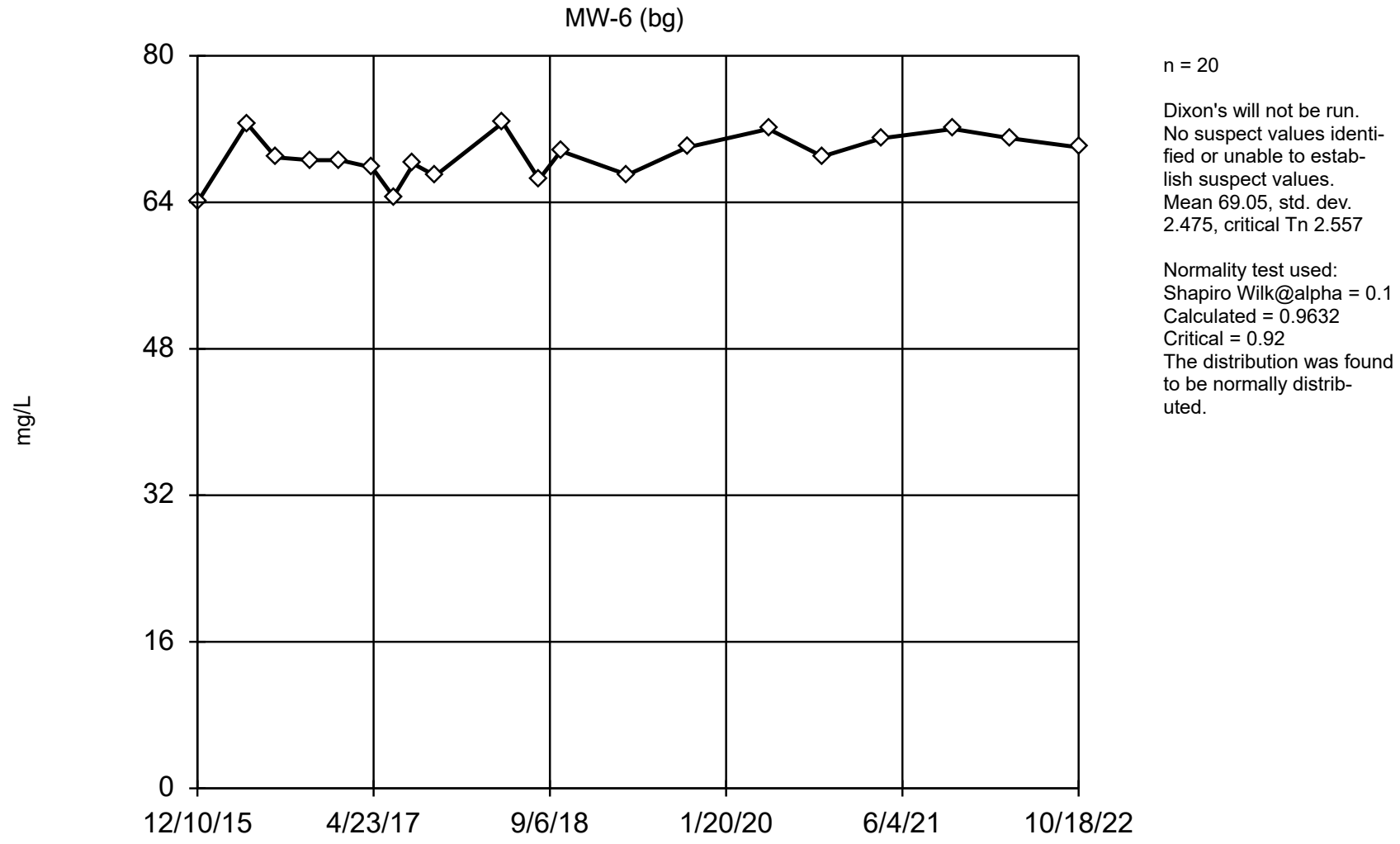
Constituent: Cadmium (ug/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	<0.56 (UO)
4/29/2016	<0.029 (U)
7/20/2016	<0.029 (U)
10/27/2016	<0.029 (U)
1/18/2017	<0.029 (U)
4/19/2017	<0.018 (U)
6/19/2017	<0.018 (U)
8/15/2017	<0.018 (U)
4/26/2018	<0.018 (U)
10/8/2018	<0.033 (U)
4/15/2019	<0.077 (U)
5/20/2020	<0.039 (U)
10/20/2020	<0.049 (U)
4/7/2021	<0.051 (U)
10/26/2021	<0.051 (U)
4/6/2022	<0.055 (U)
10/18/2022	<0.055 (U)

ND substitution: RL or RL/2 if <15% NDs.

EPA Screening (suspected outliers for Dixon's Test)



n = 20

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 69.05, std. dev. 2.475, critical Tn 2.557

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9632
Critical = 0.92
The distribution was found to be normally distributed.

Constituent: Calcium Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

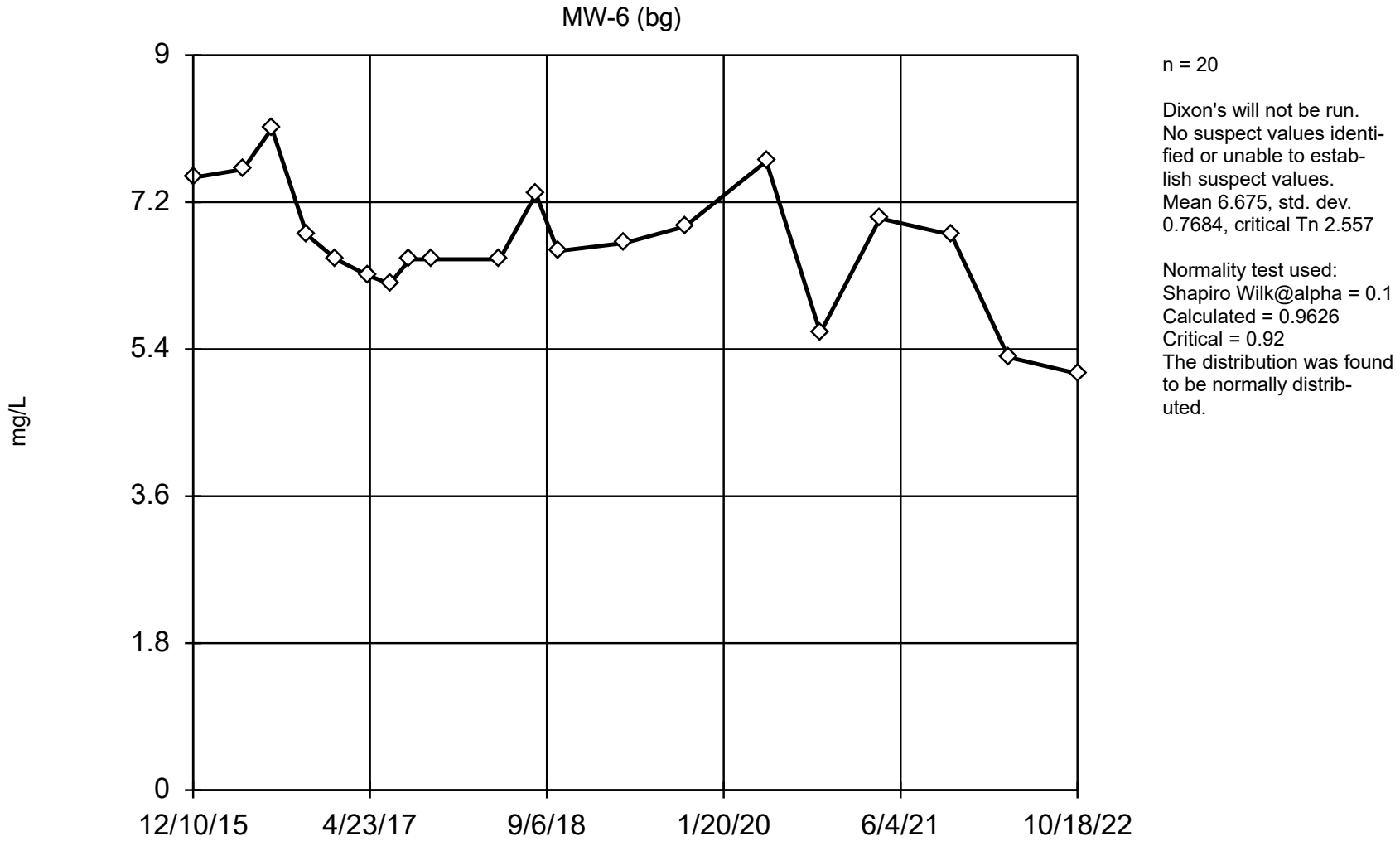
EPA 1989 Outlier Screening

Constituent: Calcium (mg/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	64
4/29/2016	72.6
7/20/2016	68.9
10/27/2016	68.6
1/18/2017	68.6
4/19/2017	67.8
6/19/2017	64.6
8/15/2017	68.2
10/16/2017	66.9
4/26/2018	72.7
8/7/2018	66.5
10/8/2018	69.6
4/15/2019	67
10/2/2019	70
5/20/2020	72
10/20/2020	69
4/7/2021	71
10/26/2021	72
4/6/2022	71
10/18/2022	70

EPA Screening (suspected outliers for Dixon's Test)



n = 20

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 6.675, std. dev. 0.7684, critical Tn 2.557

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9626
Critical = 0.92
The distribution was found to be normally distributed.

Constituent: Chloride Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

EPA 1989 Outlier Screening

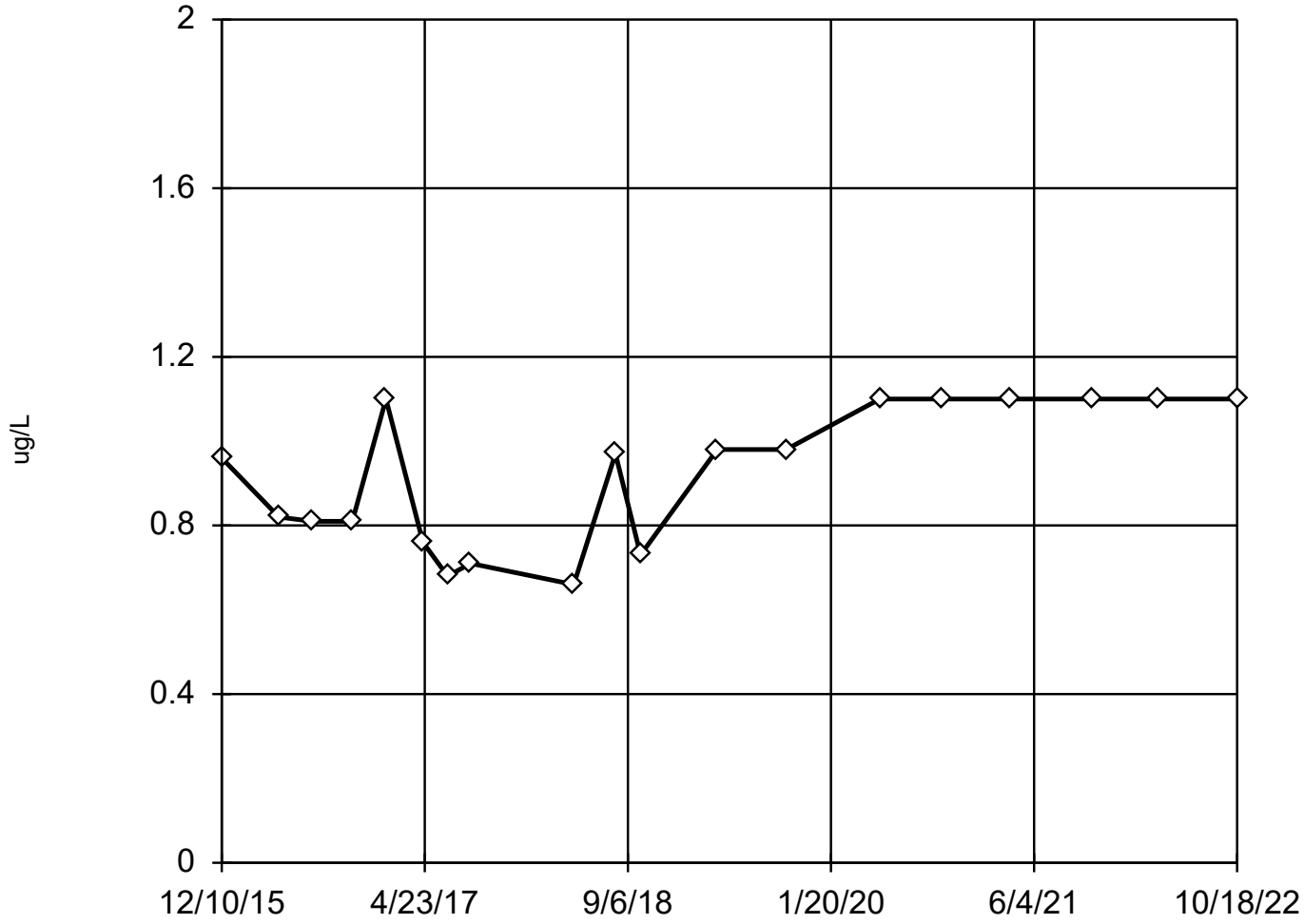
Constituent: Chloride (mg/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	7.5
4/29/2016	7.6
7/20/2016	8.1
10/27/2016	6.8
1/18/2017	6.5
4/19/2017	6.3
6/19/2017	6.2
8/15/2017	6.5
10/16/2017	6.5
4/26/2018	6.5
8/7/2018	7.3
10/8/2018	6.6
4/15/2019	6.7
10/2/2019	6.9
5/20/2020	7.7
10/20/2020	5.6
4/7/2021	7
10/26/2021	6.8
4/6/2022	5.3
10/18/2022	5.1

Tukey's Outlier Screening

MW-6 (bg)



n = 19

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 3.335, low cutoff = 0.2507, based on IQR multiplier of 3.

Constituent: Chromium Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tukey's Outlier Screening

Constituent: Chromium (ug/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

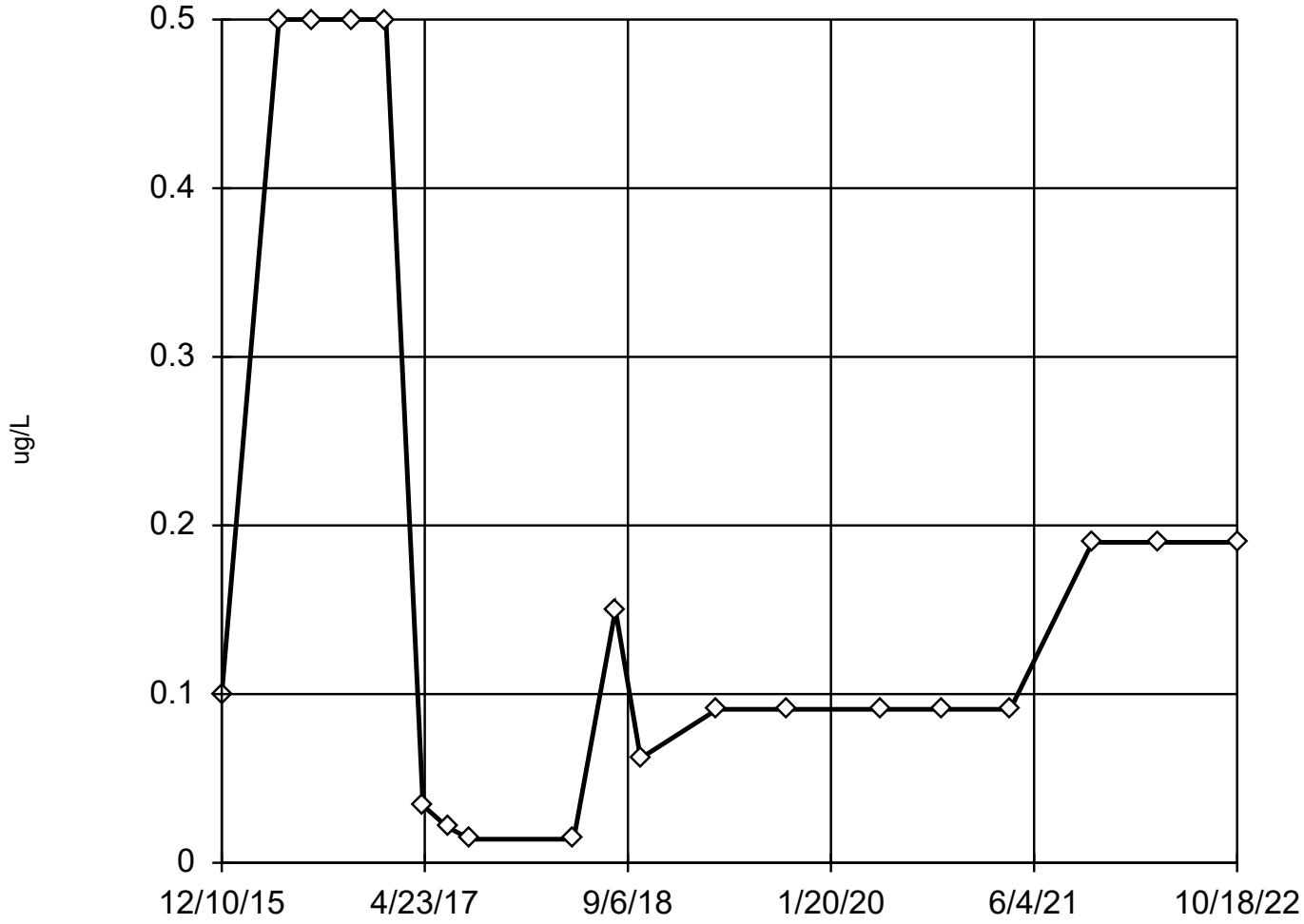
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	<0.96 (U)
4/29/2016	0.82 (J)
7/20/2016	0.81 (J)
10/27/2016	0.81 (J)
1/18/2017	1.1
4/19/2017	0.76 (J)
6/19/2017	0.68 (J)
8/15/2017	0.71 (J)
4/26/2018	0.66 (J)
8/7/2018	0.97 (J)
10/8/2018	0.73 (J)
4/15/2019	<0.98 (U)
10/2/2019	<0.98 (U)
5/20/2020	<1.1 (U)
10/20/2020	<1.1 (U)
4/7/2021	<1.1 (U)
10/26/2021	<1.1 (U)
4/6/2022	<1.1 (U)
10/18/2022	<1.1 (U)

ND substitution: RL or RL/2 if <15% NDs.

Tukey's Outlier Screening

MW-6 (bg)



n = 19

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Cobalt Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tukey's Outlier Screening

Constituent: Cobalt (ug/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

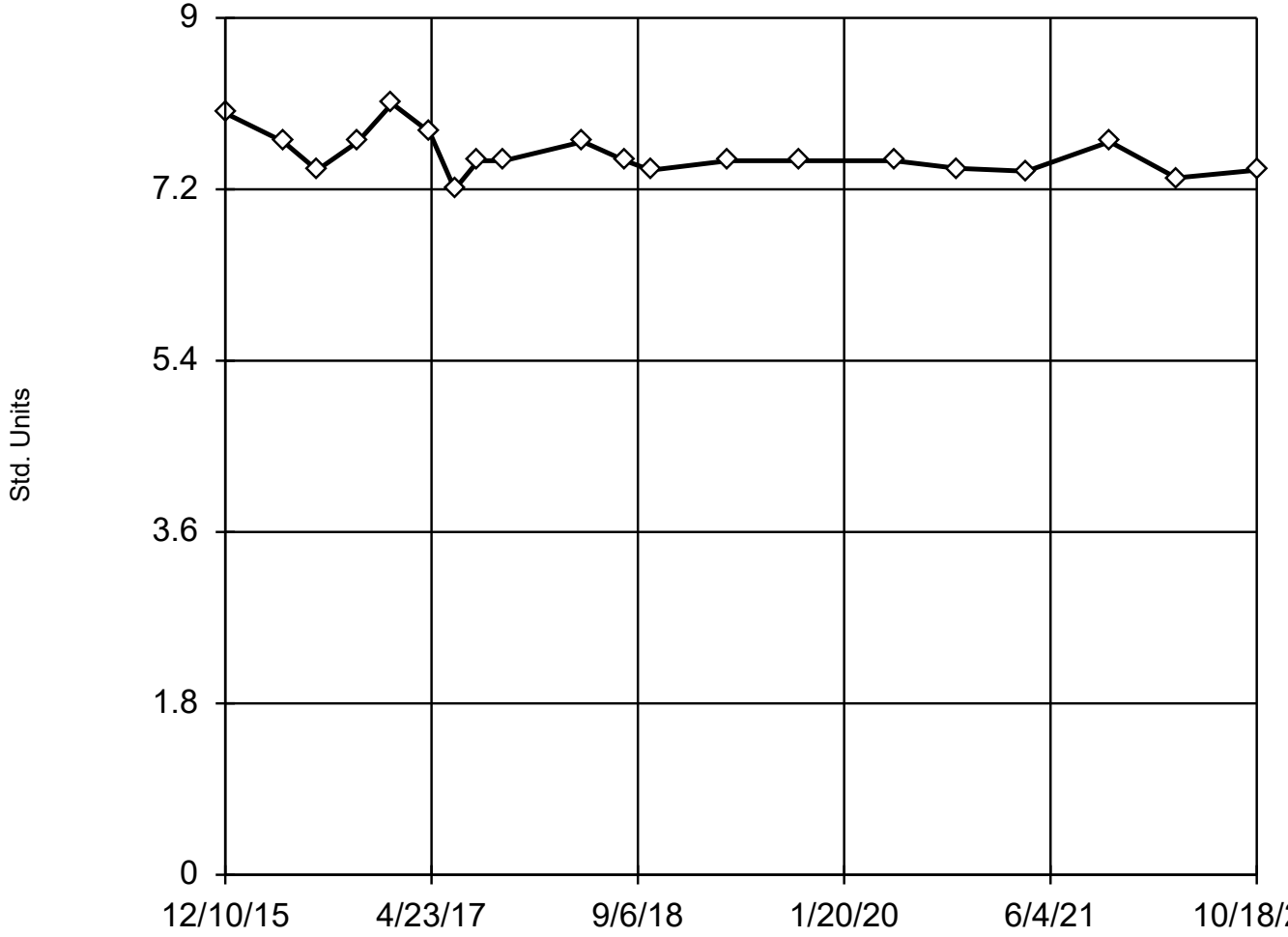
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	<0.1 (U)
4/29/2016	<0.5 (U)
7/20/2016	<0.5 (U)
10/27/2016	<0.5 (U)
1/18/2017	<0.5 (U)
4/19/2017	0.034 (J)
6/19/2017	0.021 (J)
8/15/2017	<0.014 (U)
4/26/2018	<0.014 (U)
8/7/2018	<0.15 (U)
10/8/2018	<0.062 (U)
4/15/2019	<0.091 (U)
10/2/2019	<0.091 (U)
5/20/2020	<0.091 (U)
10/20/2020	<0.091 (U)
4/7/2021	<0.091 (U)
10/26/2021	<0.19 (U)
4/6/2022	<0.19 (U)
10/18/2022	<0.19 (U)

ND substitution: RL or RL/2 if <15% NDs.

Tukey's Outlier Screening

MW-6 (bg)



n = 20

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.675, low cutoff = 6.568, based on IQR multiplier of 3.

Constituent: Field pH Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

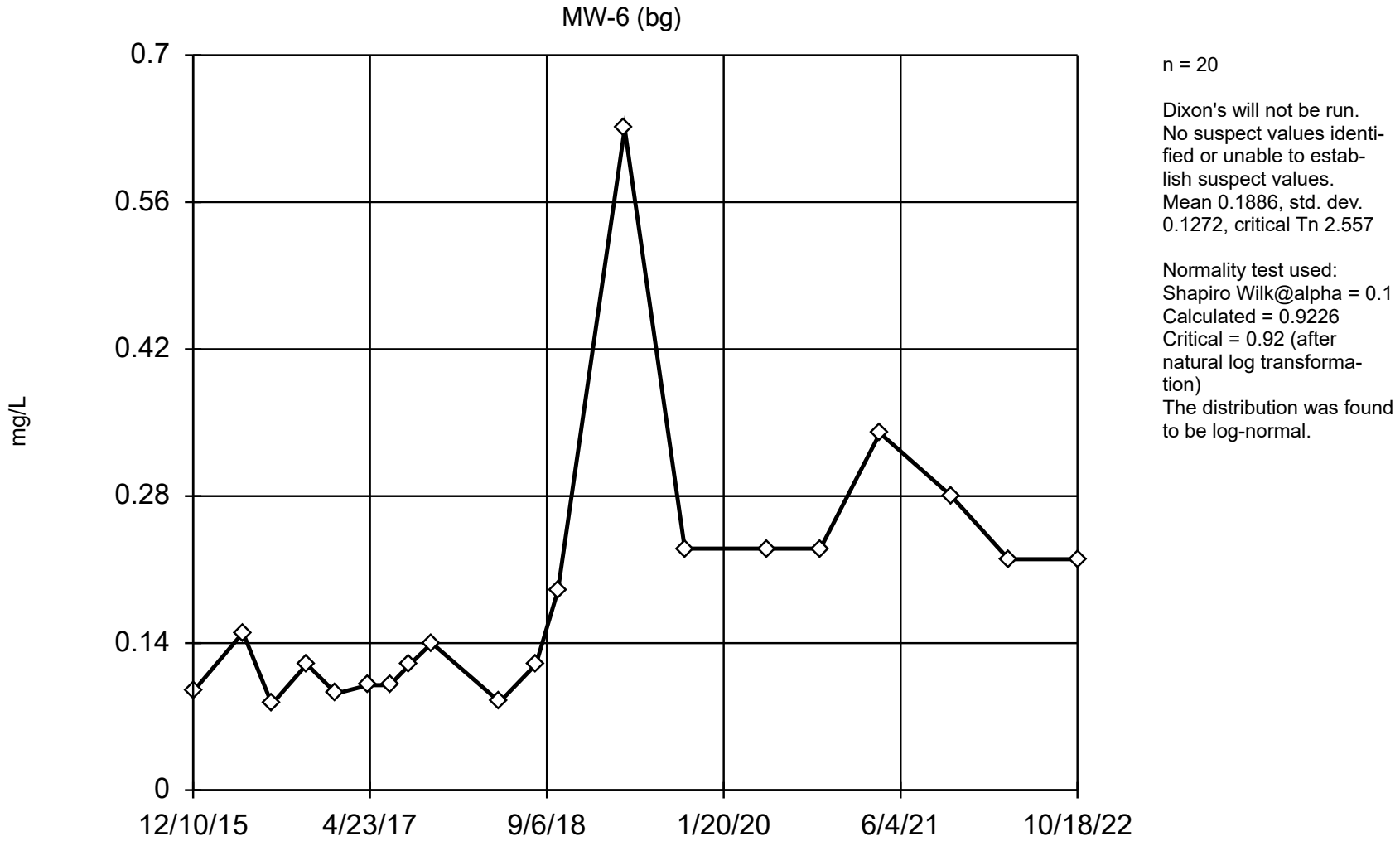
Tukey's Outlier Screening

Constituent: Field pH (Std. Units) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	8
4/29/2016	7.7
7/20/2016	7.4
10/27/2016	7.7
1/18/2017	8.1
4/19/2017	7.8
6/19/2017	7.2
8/15/2017	7.5
10/16/2017	7.5
4/26/2018	7.7
8/7/2018	7.5
10/8/2018	7.4
4/15/2019	7.5
10/2/2019	7.5
5/20/2020	7.5
10/20/2020	7.42
4/7/2021	7.39
10/26/2021	7.7
4/6/2022	7.32
10/18/2022	7.4

EPA Screening (suspected outliers for Dixon's Test)



n = 20

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 0.1886, std. dev. 0.1272, critical Tn 2.557

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9226
Critical = 0.92 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Fluoride Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

EPA 1989 Outlier Screening

Constituent: Fluoride (mg/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

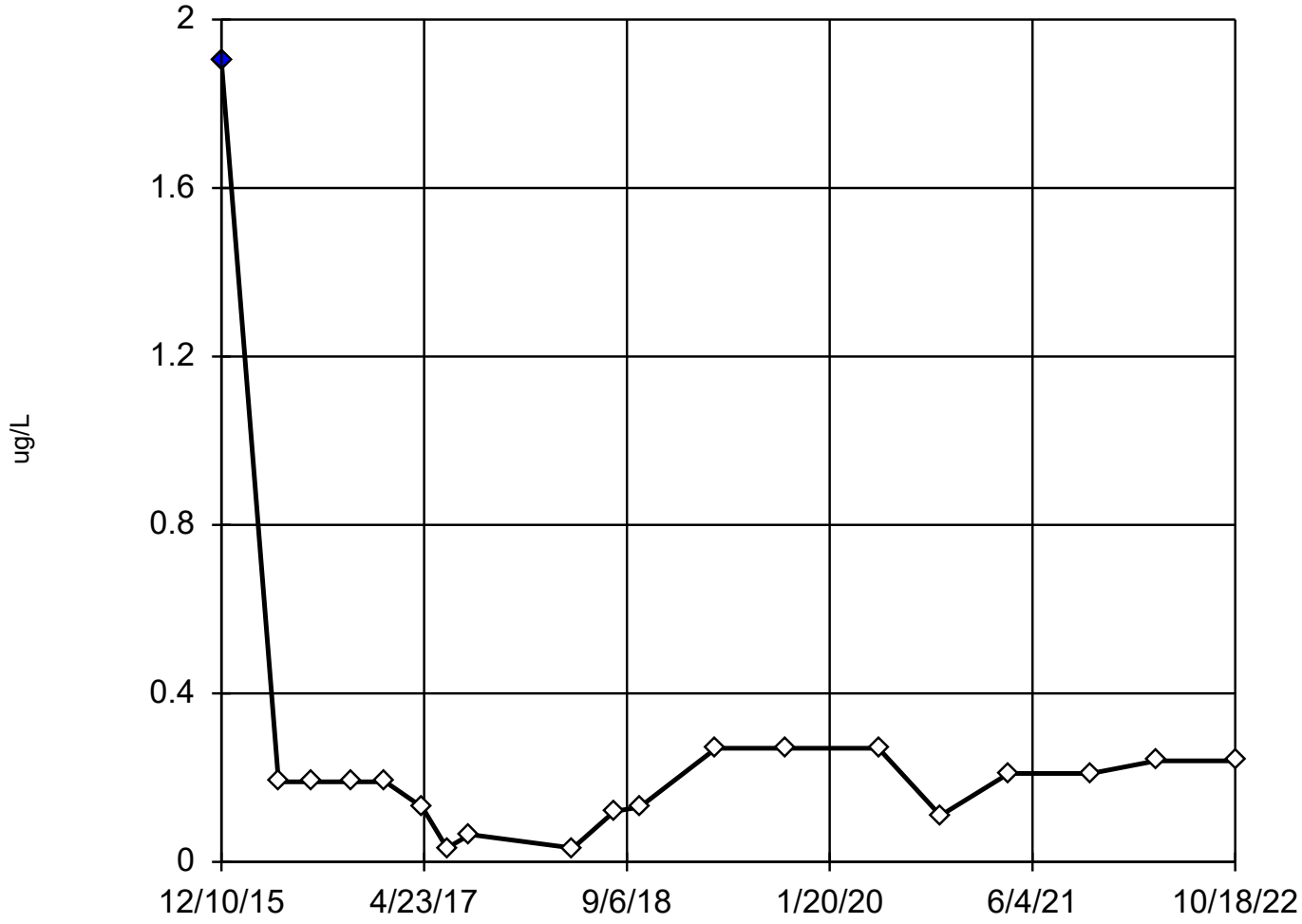
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	0.094 (J)
4/29/2016	0.15 (J)
7/20/2016	0.082 (J)
10/27/2016	0.12 (J)
1/18/2017	0.092 (J)
4/19/2017	<0.1 (U)
6/19/2017	0.1 (J)
8/15/2017	0.12 (J)
10/16/2017	0.14 (J)
4/26/2018	0.084 (J)
8/7/2018	0.12 (J)
10/8/2018	<0.19 (U)
4/15/2019	0.63
10/2/2019	<0.23 (U)
5/20/2020	<0.23 (U)
10/20/2020	<0.23 (U)
4/7/2021	0.34 (J)
10/26/2021	<0.28 (U)
4/6/2022	<0.22 (U)
10/18/2022	<0.22 (U)

ND substitution: RL or RL/2 if <15% NDs.

Dixon's Outlier Test

MW-6 (bg)



n = 19

Statistical outlier is drawn as solid.
Testing for 1 high outlier.
Mean = 0.2627.
Std. Dev. = 0.4036.
<1.9 (U): c = 0.8883
tabl = 0.462.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9197
Critical = 0.914
The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Lead Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Dixon's Outlier Test

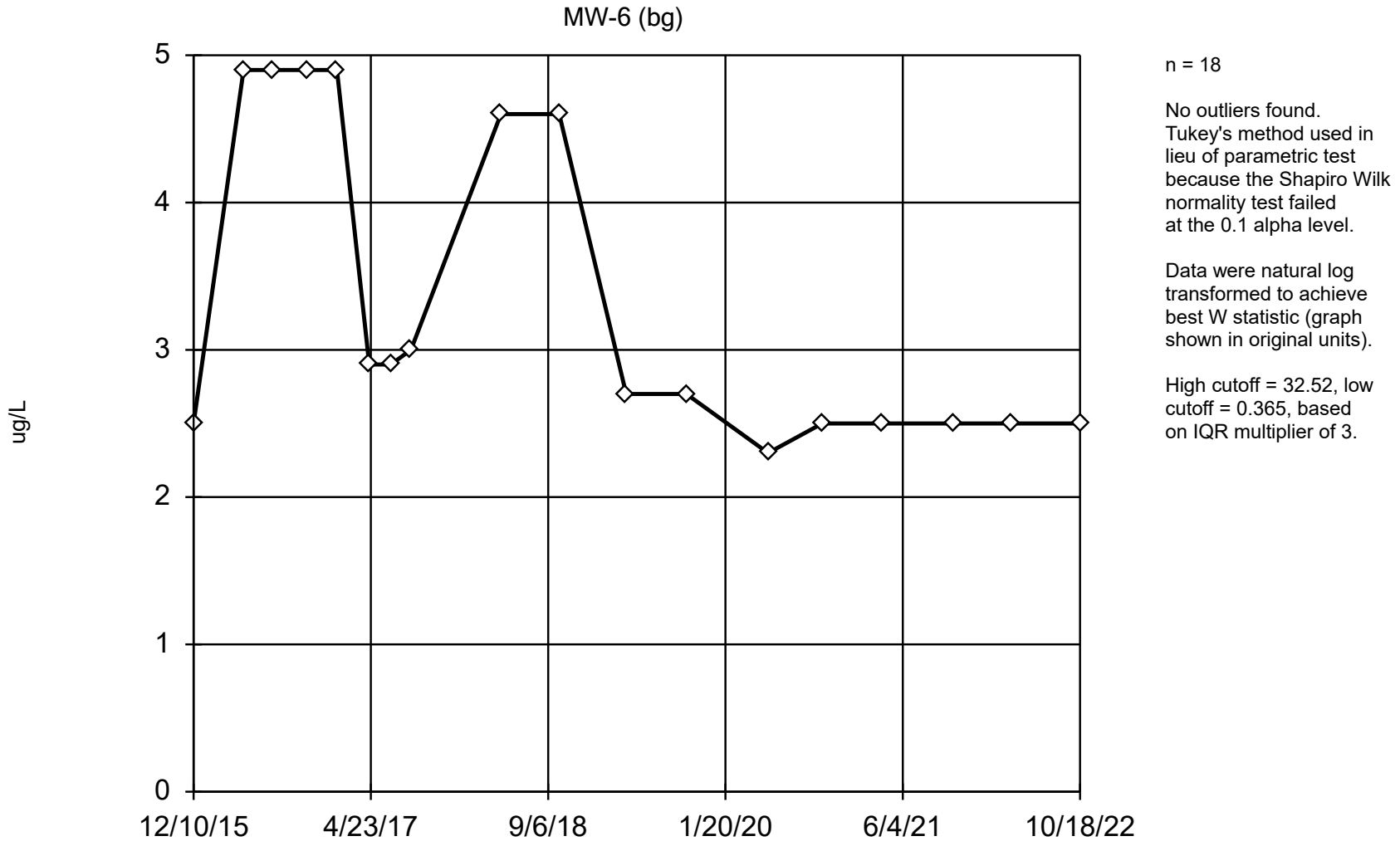
Constituent: Lead (ug/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	<1.9 (UO)
4/29/2016	<0.19 (U)
7/20/2016	<0.19 (U)
10/27/2016	<0.19 (U)
1/18/2017	<0.19 (U)
4/19/2017	0.13 (J)
6/19/2017	<0.033 (U)
8/15/2017	0.065 (J)
4/26/2018	<0.033 (U)
8/7/2018	<0.12 (U)
10/8/2018	<0.13 (U)
4/15/2019	<0.27 (U)
10/2/2019	<0.27 (U)
5/20/2020	<0.27 (U)
10/20/2020	<0.11 (U)
4/7/2021	<0.21 (U)
10/26/2021	<0.21 (U)
4/6/2022	<0.24 (U)
10/18/2022	<0.24 (U)

ND substitution: RL or RL/2 if <15% NDs.

Tukey's Outlier Screening



n = 18

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 32.52, low cutoff = 0.365, based on IQR multiplier of 3.

Constituent: Lithium Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tukey's Outlier Screening

Constituent: Lithium (ug/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

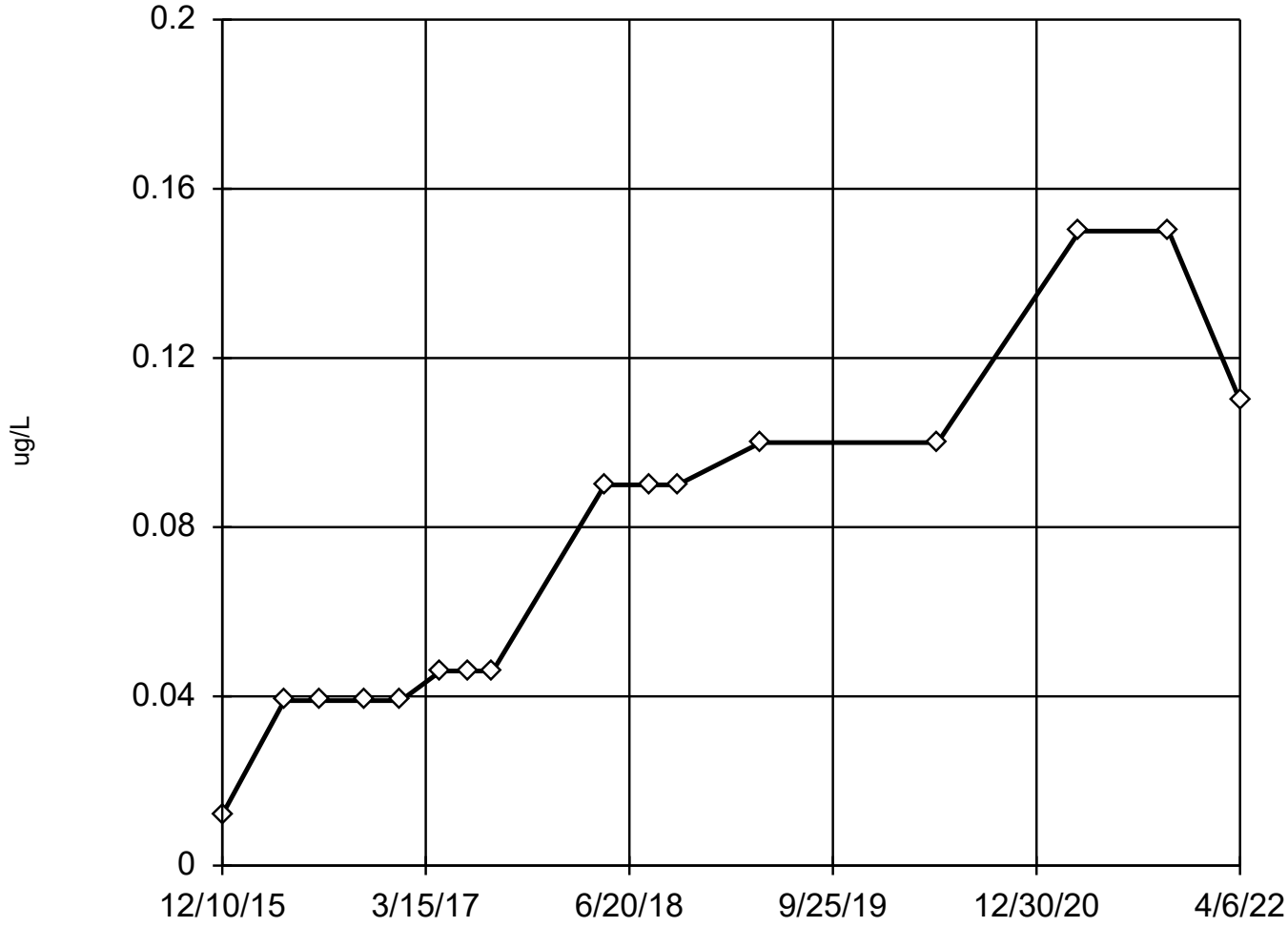
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	<2.5 (U)
4/29/2016	<4.9 (U)
7/20/2016	<4.9 (U)
10/27/2016	<4.9 (U)
1/18/2017	<4.9 (U)
4/19/2017	<2.9 (U)
6/19/2017	<2.9 (U)
8/15/2017	3 (J)
4/26/2018	<4.6 (U)
10/8/2018	<4.6 (U)
4/15/2019	<2.7 (U)
10/2/2019	<2.7 (U)
5/20/2020	<2.3 (U)
10/20/2020	<2.5 (U)
4/7/2021	<2.5 (U)
10/26/2021	<2.5 (U)
4/6/2022	<2.5 (U)
10/18/2022	<2.5 (U)

ND substitution: RL or RL/2 if <15% NDs.

Tukey's Outlier Screening

MW-6 (bg)



n = 16

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were square root transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Mercury Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tukey's Outlier Screening

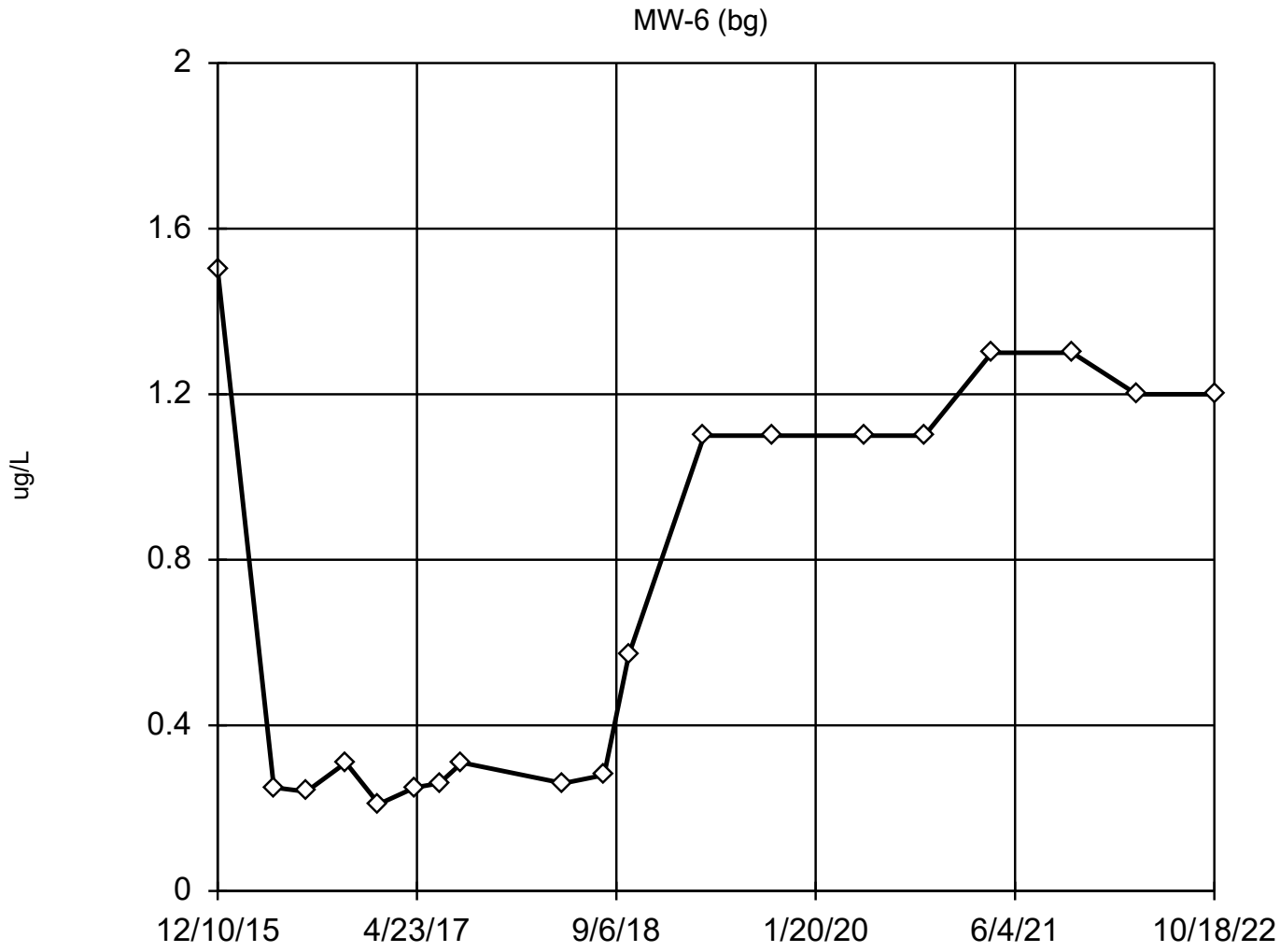
Constituent: Mercury (ug/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	<0.012 (U)
4/29/2016	<0.039 (U)
7/20/2016	<0.039 (U)
10/27/2016	<0.039 (U)
1/18/2017	<0.039 (U)
4/19/2017	<0.046 (U)
6/19/2017	<0.046 (U)
8/15/2017	<0.046 (U)
4/26/2018	<0.09 (U)
8/7/2018	<0.09 (U)
10/8/2018	<0.09 (U)
4/15/2019	<0.1 (U)
5/20/2020	<0.1 (U)
4/7/2021	<0.15 (U)
10/26/2021	<0.15 (U)
4/6/2022	<0.11 (U)

ND substitution: RL or RL/2 if <15% NDs.

Tukey's Outlier Screening



n = 19

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2.357, low cutoff = -2.012, based on IQR multiplier of 3.

Constituent: Molybdenum Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tukey's Outlier Screening

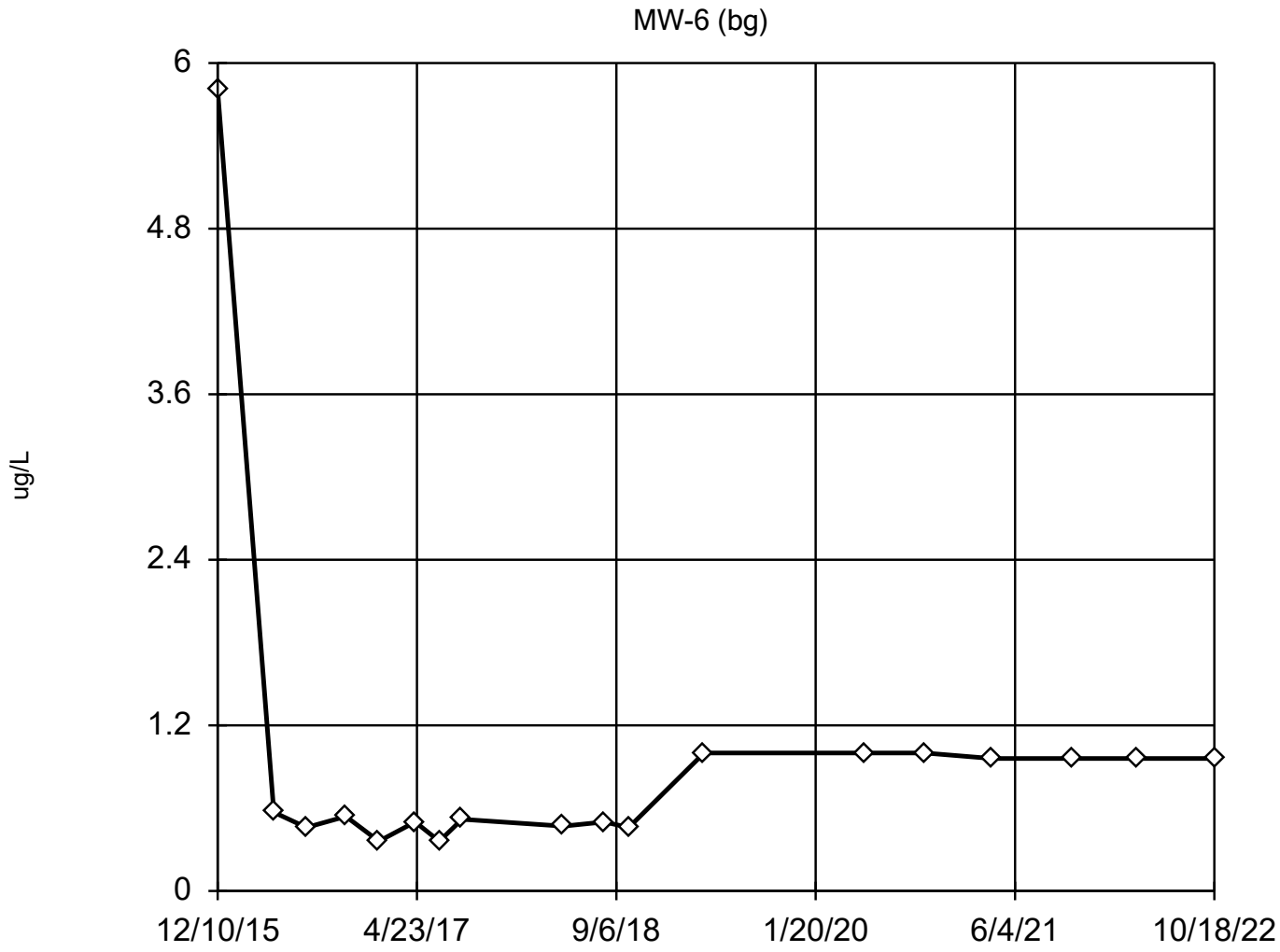
Constituent: Molybdenum (ug/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	<1.5 (U)
4/29/2016	0.25 (J)
7/20/2016	0.24 (J)
10/27/2016	0.31 (J)
1/18/2017	0.21 (J)
4/19/2017	0.25 (J)
6/19/2017	0.26 (J)
8/15/2017	0.31 (J)
4/26/2018	0.26 (J)
8/7/2018	0.28 (J)
10/8/2018	<0.57 (U)
4/15/2019	<1.1 (U)
10/2/2019	<1.1 (U)
5/20/2020	<1.1 (U)
10/20/2020	<1.1 (U)
4/7/2021	<1.3 (U)
10/26/2021	<1.3 (U)
4/6/2022	<1.2 (U)
10/18/2022	<1.2 (U)

ND substitution: RL or RL/2 if <15% NDs.

Tukey's Outlier Screening



n = 18

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 9.168, low cutoff = 0.04969, based on IQR multiplier of 3.

Constituent: Selenium Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tukey's Outlier Screening

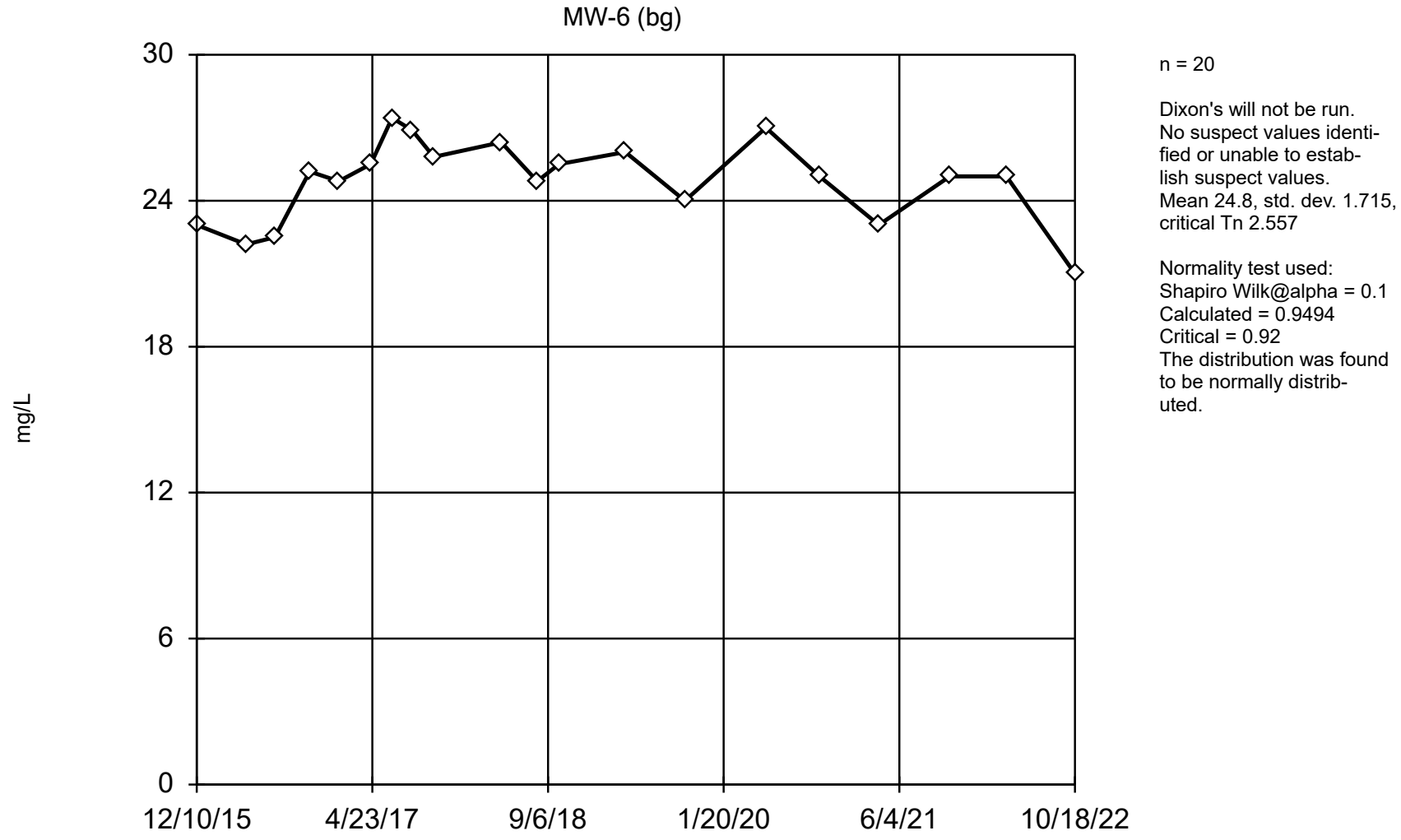
Constituent: Selenium (ug/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	<5.8 (U)
4/29/2016	0.57 (J)
7/20/2016	0.46 (J)
10/27/2016	0.54 (J)
1/18/2017	0.36 (J)
4/19/2017	0.5 (J)
6/19/2017	0.36 (J)
8/15/2017	0.52 (J)
4/26/2018	0.47 (J)
8/7/2018	0.5 (J)
10/8/2018	0.46 (J)
4/15/2019	<1 (U)
5/20/2020	<1 (U)
10/20/2020	<1 (U)
4/7/2021	<0.96 (U)
10/26/2021	<0.96 (U)
4/6/2022	<0.96 (U)
10/18/2022	<0.96 (U)

ND substitution: RL or RL/2 if <15% NDs.

EPA Screening (suspected outliers for Dixon's Test)



n = 20

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 24.8, std. dev. 1.715, critical Tn 2.557

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9494
Critical = 0.92
The distribution was found to be normally distributed.

Constituent: Sulfate Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

EPA 1989 Outlier Screening

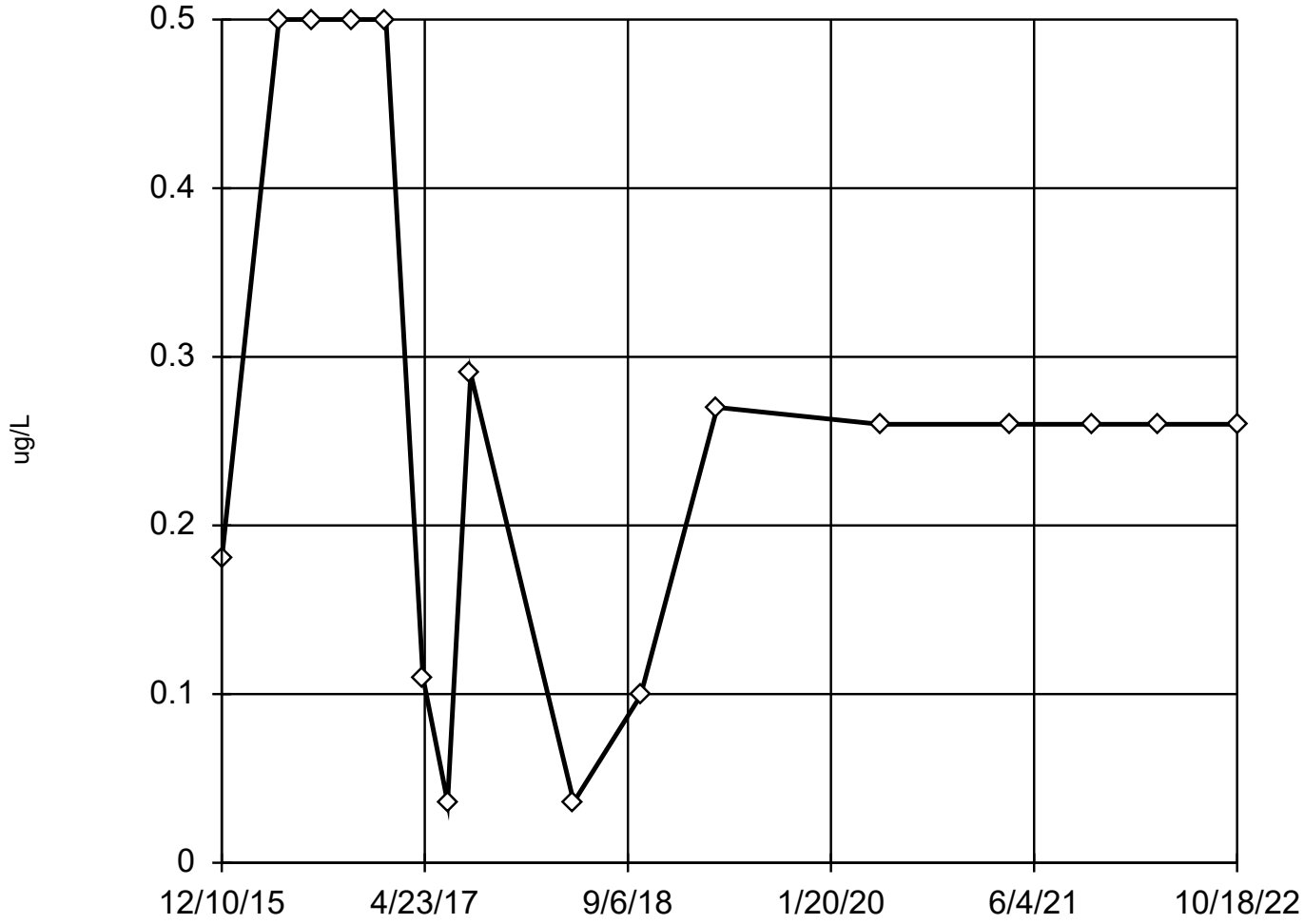
Constituent: Sulfate (mg/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	23
4/29/2016	22.2
7/20/2016	22.5
10/27/2016	25.2
1/18/2017	24.8
4/19/2017	25.5
6/19/2017	27.4
8/15/2017	26.9
10/16/2017	25.8
4/26/2018	26.4
8/7/2018	24.8
10/8/2018	25.5
4/15/2019	26
10/2/2019	24
5/20/2020	27
10/20/2020	25
4/7/2021	23
10/26/2021	25
4/6/2022	25
10/18/2022	21

Tukey's Outlier Screening

MW-6 (bg)



n = 16

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1.842, low cutoff = -0.1272, based on IQR multiplier of 3.

Constituent: Thallium Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tukey's Outlier Screening

Constituent: Thallium (ug/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

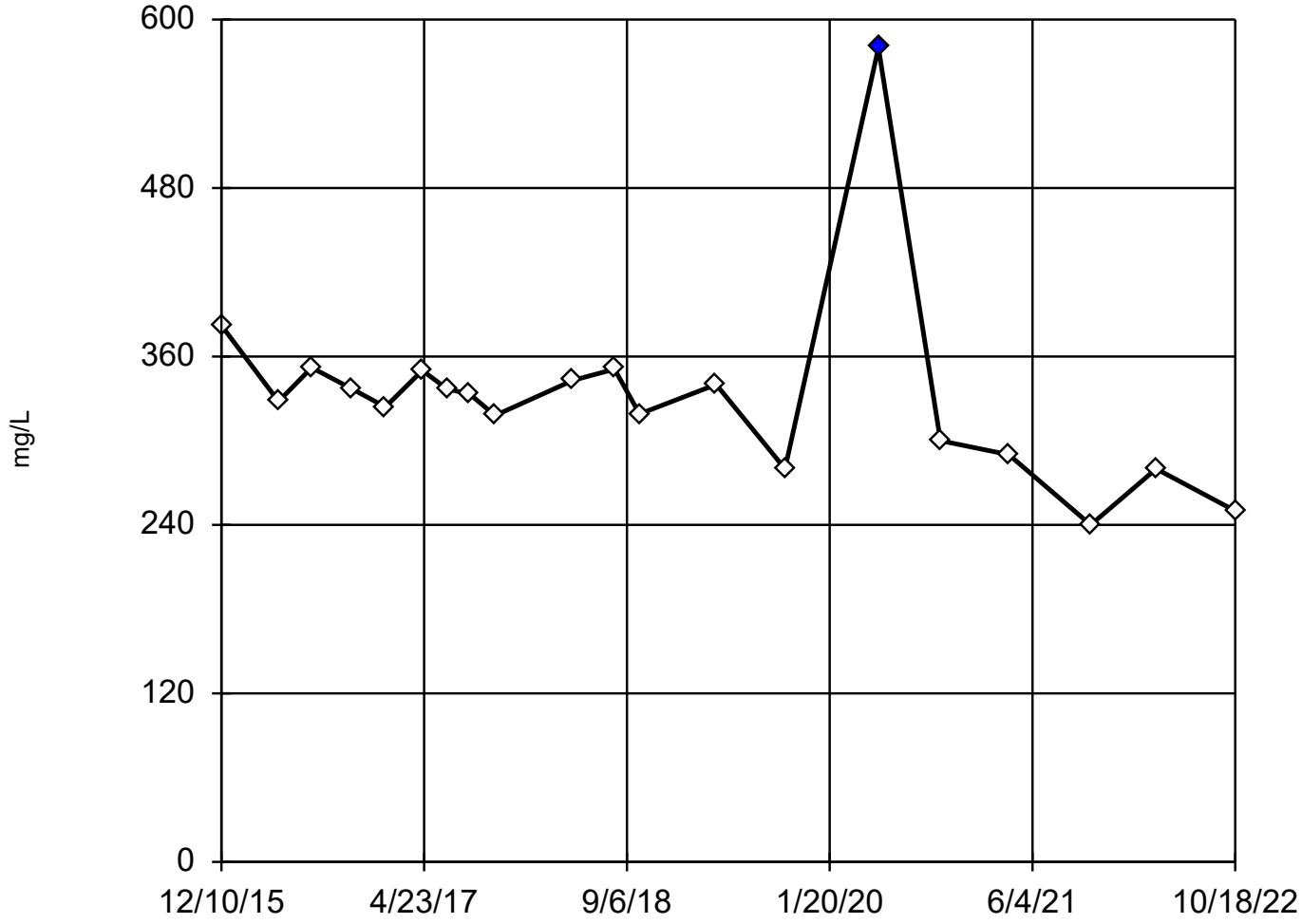
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	0.18 (J)
4/29/2016	<0.5 (U)
7/20/2016	<0.5 (U)
10/27/2016	<0.5 (U)
1/18/2017	<0.5 (U)
4/19/2017	0.11 (J)
6/19/2017	<0.036 (U)
8/15/2017	0.29 (J)
4/26/2018	<0.036 (U)
10/8/2018	<0.099 (U)
4/15/2019	<0.27 (U)
5/20/2020	<0.26 (U)
4/7/2021	<0.26 (U)
10/26/2021	<0.26 (U)
4/6/2022	<0.26 (U)
10/18/2022	<0.26 (U)

ND substitution: RL or RL/2 if <15% NDs.

Dixon's Outlier Test

MW-6 (bg)



n = 20

Statistical outlier is drawn as solid.
Testing for 1 high outlier.
Mean = 331.7.
Std. Dev. = 68.5.
580: c = 0.76
tabl = 0.45.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9371
Critical = 0.917
The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Total Dissolved Solids Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

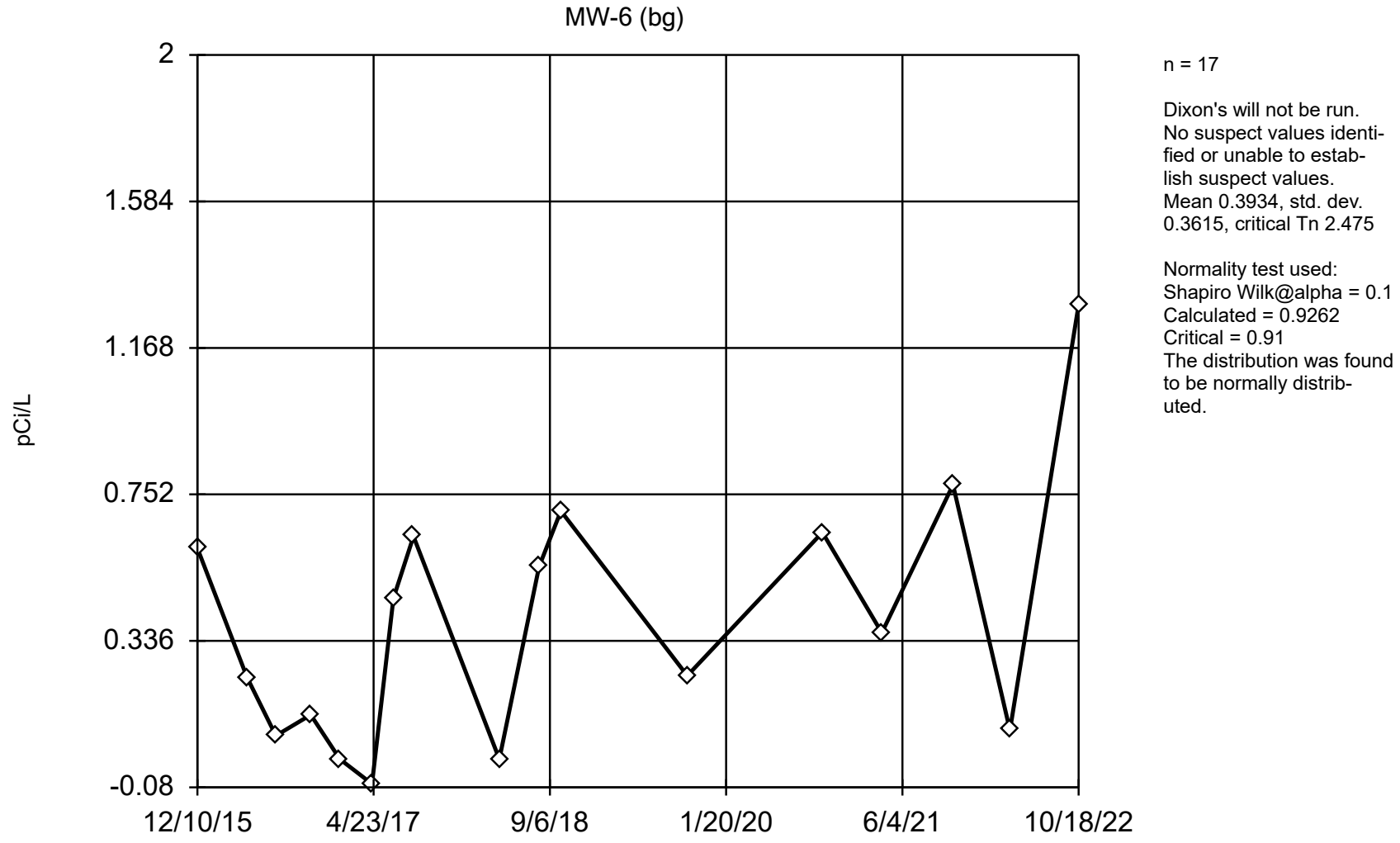
Dixon's Outlier Test

Constituent: Total Dissolved Solids (mg/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	382
4/29/2016	328
7/20/2016	352
10/27/2016	337
1/18/2017	324
4/19/2017	350
6/19/2017	337
8/15/2017	333
10/16/2017	318
4/26/2018	343
8/7/2018	351
10/8/2018	319
4/15/2019	340
10/2/2019	280
5/20/2020	580 (O)
10/20/2020	300
4/7/2021	290
10/26/2021	240
4/6/2022	280
10/18/2022	250

EPA Screening (suspected outliers for Dixon's Test)



n = 17

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 0.3934, std. dev. 0.3615, critical Tn 2.475

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9262
Critical = 0.91
The distribution was found to be normally distributed.

Constituent: Total Radium Analysis Run 1/1/2023 4:22 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

EPA 1989 Outlier Screening

Constituent: Total Radium (pCi/L) Analysis Run 1/1/2023 4:27 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
12/10/2015	0.599
4/29/2016	0.232
7/20/2016	0.0668
10/27/2016	0.126
1/18/2017	0
4/19/2017	-0.07
6/19/2017	0.457
8/15/2017	0.633
4/16/2018	0
8/7/2018	0.547
10/8/2018	0.705
10/2/2019	0.237
10/20/2020	0.644
4/7/2021	0.359
10/26/2021	0.779
4/6/2022	0.0823
10/18/2022	1.29

Attachment 3

Welch’s/Mann-Whitney Comparison

Welch's t-test/Mann-Whitney

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev Printed 12/16/2022, 12:29 AM

Constituent	Well	Calc.	0.1	0.05	0.025	0.01	Method
Antimony (ug/L)	**MW-6 (bg)**	**2.522**	**Yes**	**Yes**	**Yes**	**Yes**	**Mann-W**
Arsenic (ug/L)	MW-6 (bg)	1.725	Yes	Yes	No	No	Mann-W
Barium (ug/L)	MW-6 (bg)	0.9508	No	No	No	No	Mann-W
Beryllium (ug/L)	**MW-6 (bg)**	**2.69**	**Yes**	**Yes**	**Yes**	**Yes**	**Mann-W**
Boron (ug/L)	MW-6 (bg)	2.056	Yes	Yes	Yes	No	Mann-W
Cadmium (ug/L)	MW-6 (bg)	2.049	Yes	Yes	Yes	No	Mann-W
Calcium (mg/L)	MW-6 (bg)	1.661	Yes	Yes	No	No	Mann-W
Chloride (mg/L)	MW-6 (bg)	-0....	No	No	No	No	Mann-W
Chromium (ug/L)	MW-6 (bg)	2.225	Yes	Yes	Yes	No	Mann-W
Cobalt (ug/L)	MW-6 (bg)	-0....	No	No	No	No	Mann-W
Field pH (Std. Units)	MW-6 (bg)	-1.651	No	No	No	No	Mann-W
Fluoride (mg/L)	**MW-6 (bg)**	**2.903**	**Yes**	**Yes**	**Yes**	**Yes**	**Mann-W**
Lead (ug/L)	MW-6 (bg)	0.9151	No	No	No	No	Mann-W
Lithium (ug/L)	MW-6 (bg)	-2.552	No	No	No	No	Mann-W
Mercury (ug/L)	**MW-6 (bg)**	**3.358**	**Yes**	**Yes**	**Yes**	**Yes**	**Mann-W**
Molybdenum (ug/L)	**MW-6 (bg)**	**2.327**	**Yes**	**Yes**	**Yes**	**Yes**	**Mann-W**
Selenium (ug/L)	MW-6 (bg)	1.569	Yes	No	No	No	Mann-W
Sulfate (mg/L)	MW-6 (bg)	0.2321	No	No	No	No	Mann-W
Thallium (ug/L)	MW-6 (bg)	-1.397	No	No	No	No	Mann-W
Total Dissolved Solids (mg/L)	MW-6 (bg)	-1.892	No	No	No	No	Mann-W
Total Radium (pCi/L)	MW-6 (bg)	1.541	Yes	No	No	No	Mann-W

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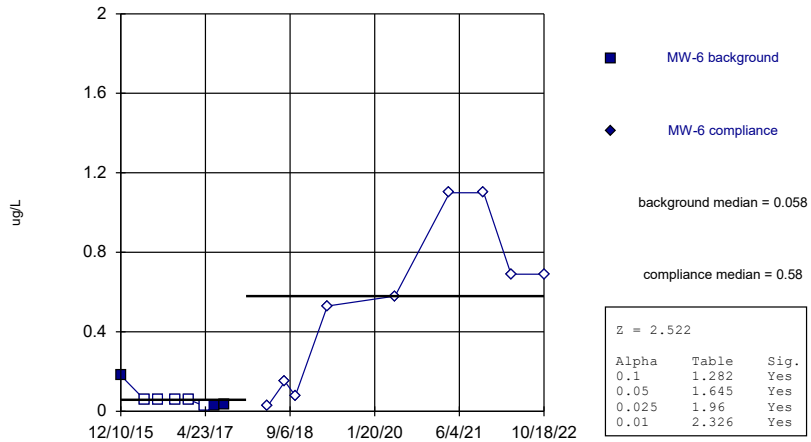
Hollow symbols indicate censored values.

Antimony



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

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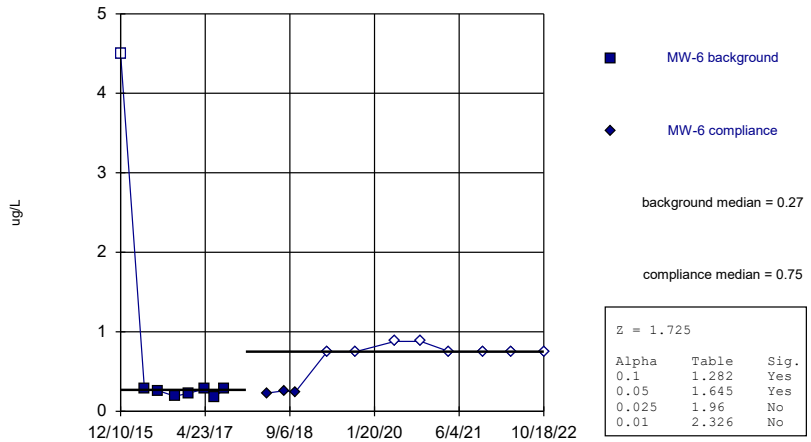
Arsenic



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

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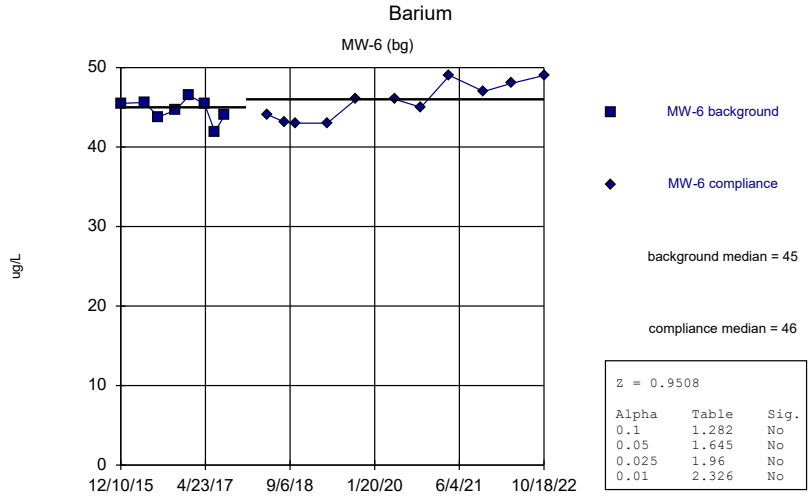
Barium



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

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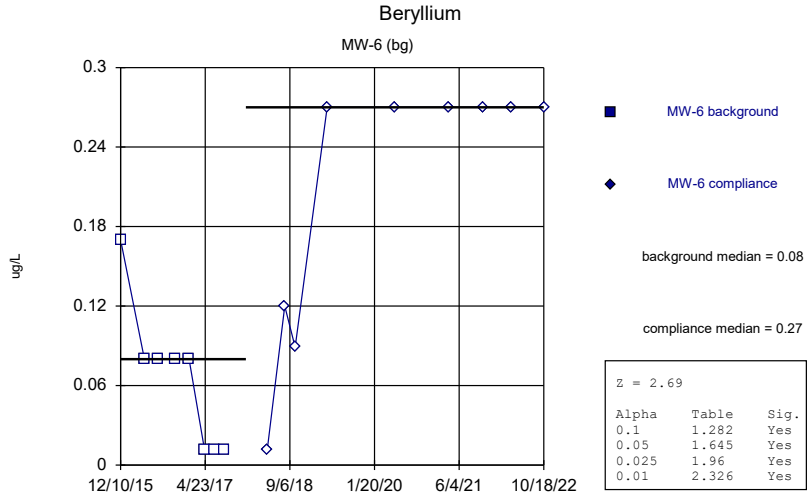
Beryllium



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Antimony (ug/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	0.18 (J)	
4/29/2016	<0.058 (U)	
7/20/2016	<0.058 (U)	
10/27/2016	<0.058 (U)	
1/18/2017	<0.058 (U)	
4/19/2017	<0.026 (U)	
6/19/2017	0.027 (J)	
8/15/2017	0.037 (J)	
4/26/2018		<0.026 (U)
8/7/2018		<0.15 (U)
10/8/2018		<0.078 (U)
4/15/2019		<0.53 (U)
5/20/2020		<0.58 (U)
4/7/2021		<1.1 (U)
10/26/2021		<1.1 (U)
4/6/2022		<0.69 (U)
10/18/2022		<0.69 (U)

ND substitution: RL or RL/2 if <15% NDs.

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Arsenic (ug/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	<4.5 (U)	
4/29/2016	0.28 (J)	
7/20/2016	0.26 (J)	
10/27/2016	0.19 (J)	
1/18/2017	0.23 (J)	
4/19/2017	0.28 (J)	
6/19/2017	0.18 (J)	
8/15/2017	0.28 (J)	
4/26/2018		0.23 (J)
8/7/2018		0.26 (J)
10/8/2018		0.24 (J)
4/15/2019		<0.75 (U)
10/2/2019		<0.75 (U)
5/20/2020		<0.88 (U)
10/20/2020		<0.88 (U)
4/7/2021		<0.75 (U)
10/26/2021		<0.75 (U)
4/6/2022		<0.75 (U)
10/18/2022		<0.75 (U)

ND substitution: RL or RL/2 if <15% NDs.

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Barium (ug/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	45.5	
4/29/2016	45.6	
7/20/2016	43.8	
10/27/2016	44.6	
1/18/2017	46.5	
4/19/2017	45.4	
6/19/2017	41.9	
8/15/2017	44	
4/26/2018		44.1
8/7/2018		43.1
10/8/2018		43
4/15/2019		43
10/2/2019		46
5/20/2020		46
10/20/2020		45
4/7/2021		49 (B)
10/26/2021		47
4/6/2022		48
10/18/2022		49

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Beryllium (ug/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	<0.17 (U)	
4/29/2016	<0.08 (U)	
7/20/2016	<0.08 (U)	
10/27/2016	<0.08 (U)	
1/18/2017	<0.08 (U)	
4/19/2017	<0.012 (U)	
6/19/2017	<0.012 (U)	
8/15/2017	<0.012 (U)	
4/26/2018		<0.012 (U)
8/7/2018		<0.12 (U)
10/8/2018		<0.089 (U)
4/15/2019		<0.27 (U)
5/20/2020		<0.27 (U)
4/7/2021		<0.27 (U)
10/26/2021		<0.27 (U)
4/6/2022		<0.27 (U)
10/18/2022		<0.27 (U)

ND substitution: RL or RL/2 if <15% NDs.

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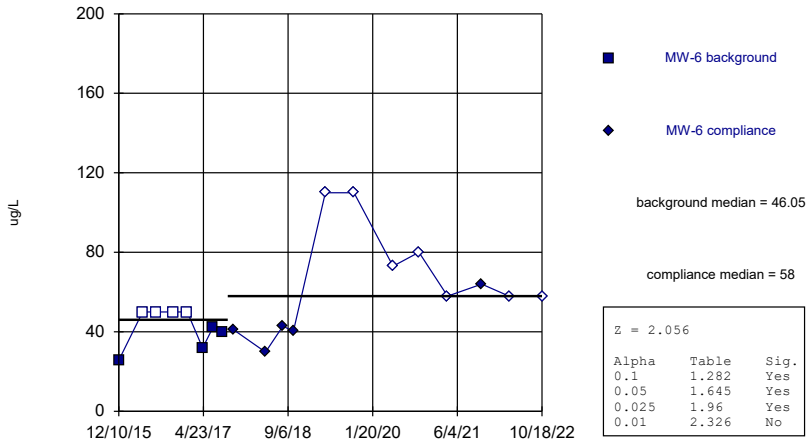
Boron



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

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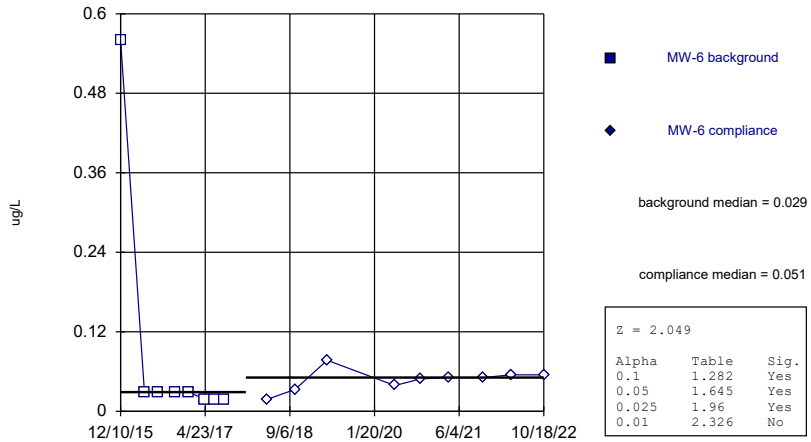
Cadmium



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Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

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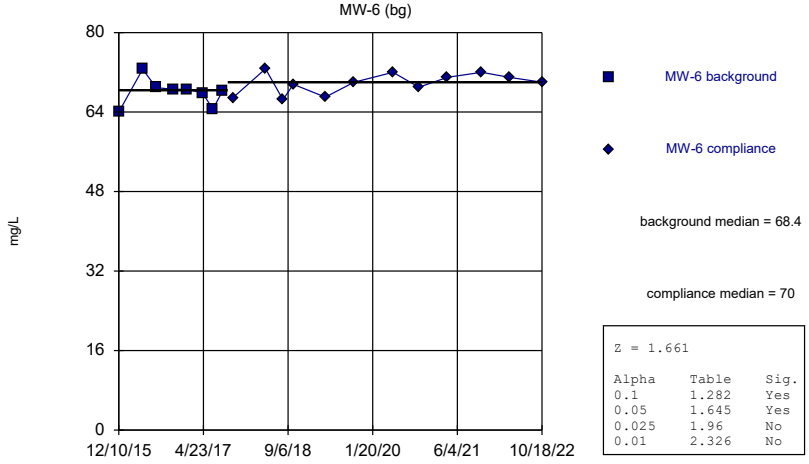
Calcium



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

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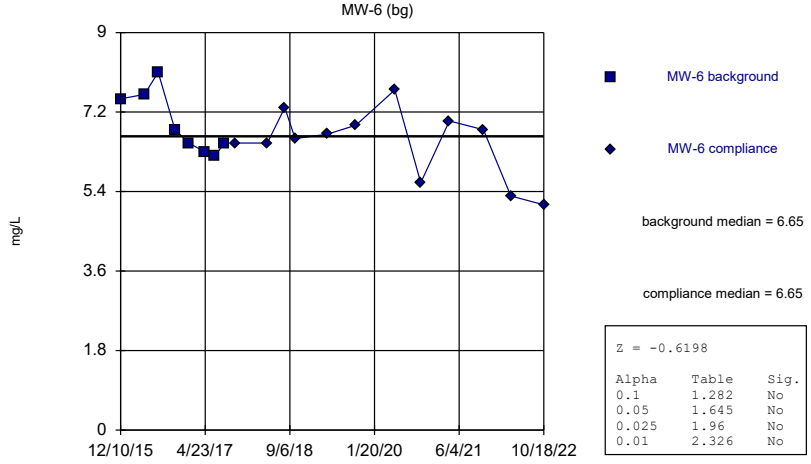
Chloride



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Boron (ug/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	25.7 (J)	
4/29/2016	<50 (U)	
7/20/2016	<50 (U)	
10/27/2016	<50 (U)	
1/18/2017	<50 (U)	
4/19/2017	31.9 (J)	
6/19/2017	42.1 (J)	
8/15/2017	40 (J)	
10/16/2017		41.2 (J)
4/26/2018		29.8 (J)
8/7/2018		42.9 (J)
10/8/2018		40.2 (J)
4/15/2019		<110 (U)
10/2/2019		<110 (U)
5/20/2020		<73 (U)
10/20/2020		<80 (U)
4/7/2021		<58 (U)
10/26/2021		64 (J)
4/6/2022		<58 (U)
10/18/2022		<58 (U)

ND substitution: RL or RL/2 if <15% NDs.

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Cadmium (ug/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	<0.56 (U)	
4/29/2016	<0.029 (U)	
7/20/2016	<0.029 (U)	
10/27/2016	<0.029 (U)	
1/18/2017	<0.029 (U)	
4/19/2017	<0.018 (U)	
6/19/2017	<0.018 (U)	
8/15/2017	<0.018 (U)	
4/26/2018		<0.018 (U)
10/8/2018		<0.033 (U)
4/15/2019		<0.077 (U)
5/20/2020		<0.039 (U)
10/20/2020		<0.049 (U)
4/7/2021		<0.051 (U)
10/26/2021		<0.051 (U)
4/6/2022		<0.055 (U)
10/18/2022		<0.055 (U)

ND substitution: RL or RL/2 if <15% NDs.

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Calcium (mg/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	64	
4/29/2016	72.6	
7/20/2016	68.9	
10/27/2016	68.6	
1/18/2017	68.6	
4/19/2017	67.8	
6/19/2017	64.6	
8/15/2017	68.2	
10/16/2017		66.9
4/26/2018		72.7
8/7/2018		66.5
10/8/2018		69.6
4/15/2019		67
10/2/2019		70
5/20/2020		72
10/20/2020		69
4/7/2021		71
10/26/2021		72
4/6/2022		71
10/18/2022		70

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Chloride (mg/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	7.5	
4/29/2016	7.6	
7/20/2016	8.1	
10/27/2016	6.8	
1/18/2017	6.5	
4/19/2017	6.3	
6/19/2017	6.2	
8/15/2017	6.5	
10/16/2017		6.5
4/26/2018		6.5
8/7/2018		7.3
10/8/2018		6.6
4/15/2019		6.7
10/2/2019		6.9
5/20/2020		7.7
10/20/2020		5.6
4/7/2021		7
10/26/2021		6.8
4/6/2022		5.3
10/18/2022		5.1

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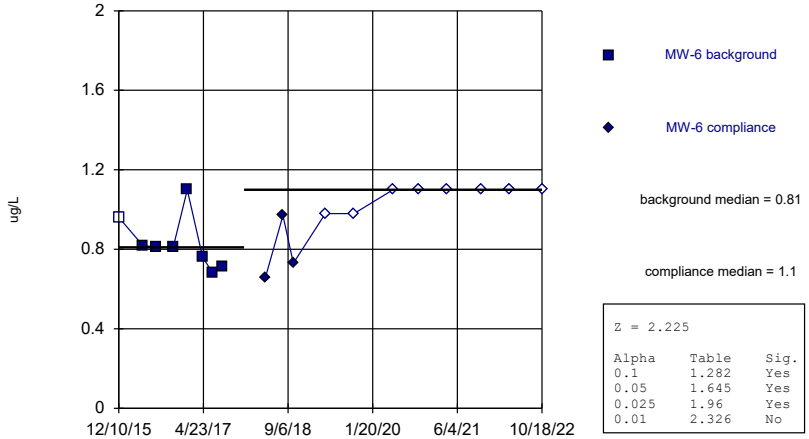
Chromium



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

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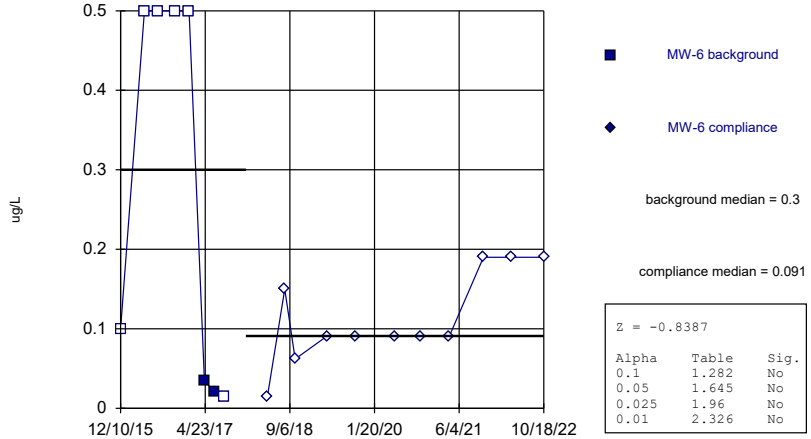
Cobalt



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

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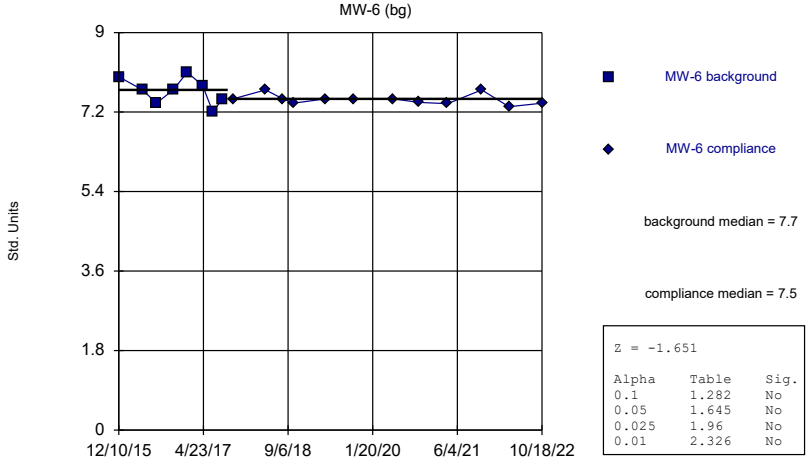
Field pH



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

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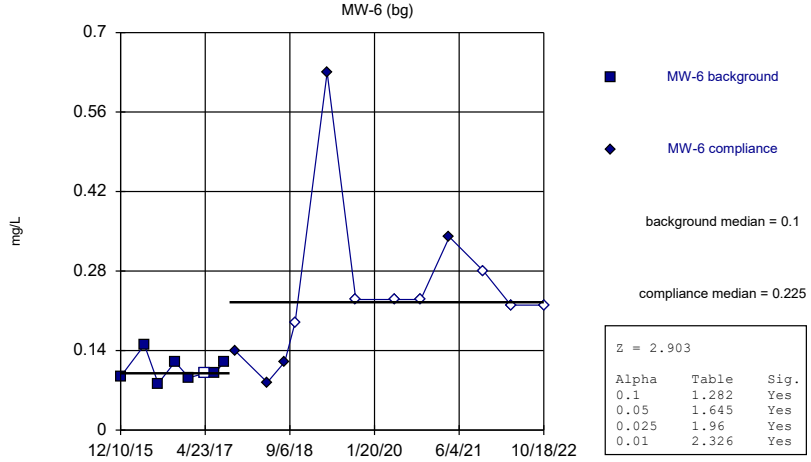
Fluoride



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Chromium (ug/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	<0.96 (U)	
4/29/2016	0.82 (J)	
7/20/2016	0.81 (J)	
10/27/2016	0.81 (J)	
1/18/2017	1.1	
4/19/2017	0.76 (J)	
6/19/2017	0.68 (J)	
8/15/2017	0.71 (J)	
4/26/2018		0.66 (J)
8/7/2018		0.97 (J)
10/8/2018		0.73 (J)
4/15/2019		<0.98 (U)
10/2/2019		<0.98 (U)
5/20/2020		<1.1 (U)
10/20/2020		<1.1 (U)
4/7/2021		<1.1 (U)
10/26/2021		<1.1 (U)
4/6/2022		<1.1 (U)
10/18/2022		<1.1 (U)

ND substitution: RL or RL/2 if <15% NDs.

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Cobalt (ug/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	<0.1 (U)	
4/29/2016	<0.5 (U)	
7/20/2016	<0.5 (U)	
10/27/2016	<0.5 (U)	
1/18/2017	<0.5 (U)	
4/19/2017	0.034 (J)	
6/19/2017	0.021 (J)	
8/15/2017	<0.014 (U)	
4/26/2018		<0.014 (U)
8/7/2018		<0.15 (U)
10/8/2018		<0.062 (U)
4/15/2019		<0.091 (U)
10/2/2019		<0.091 (U)
5/20/2020		<0.091 (U)
10/20/2020		<0.091 (U)
4/7/2021		<0.091 (U)
10/26/2021		<0.19 (U)
4/6/2022		<0.19 (U)
10/18/2022		<0.19 (U)

ND substitution: RL or RL/2 if <15% NDs.

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Field pH (Std. Units) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	8	
4/29/2016	7.7	
7/20/2016	7.4	
10/27/2016	7.7	
1/18/2017	8.1	
4/19/2017	7.8	
6/19/2017	7.2	
8/15/2017	7.5	
10/16/2017		7.5
4/26/2018		7.7
8/7/2018		7.5
10/8/2018		7.4
4/15/2019		7.5
10/2/2019		7.5
5/20/2020		7.5
10/20/2020		7.42
4/7/2021		7.39
10/26/2021		7.7
4/6/2022		7.32
10/18/2022		7.4

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Fluoride (mg/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	0.094 (J)	
4/29/2016	0.15 (J)	
7/20/2016	0.082 (J)	
10/27/2016	0.12 (J)	
1/18/2017	0.092 (J)	
4/19/2017	<0.1 (U)	
6/19/2017	0.1 (J)	
8/15/2017	0.12 (J)	
10/16/2017		0.14 (J)
4/26/2018		0.084 (J)
8/7/2018		0.12 (J)
10/8/2018		<0.19 (U)
4/15/2019		0.63
10/2/2019		<0.23 (U)
5/20/2020		<0.23 (U)
10/20/2020		<0.23 (U)
4/7/2021		0.34 (J)
10/26/2021		<0.28 (U)
4/6/2022		<0.22 (U)
10/18/2022		<0.22 (U)

ND substitution: RL or RL/2 if <15% NDs.

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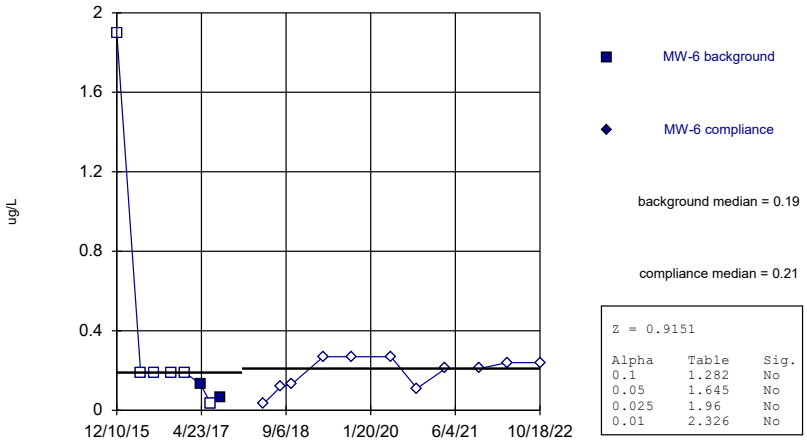
Hollow symbols indicate censored values.

Lead



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

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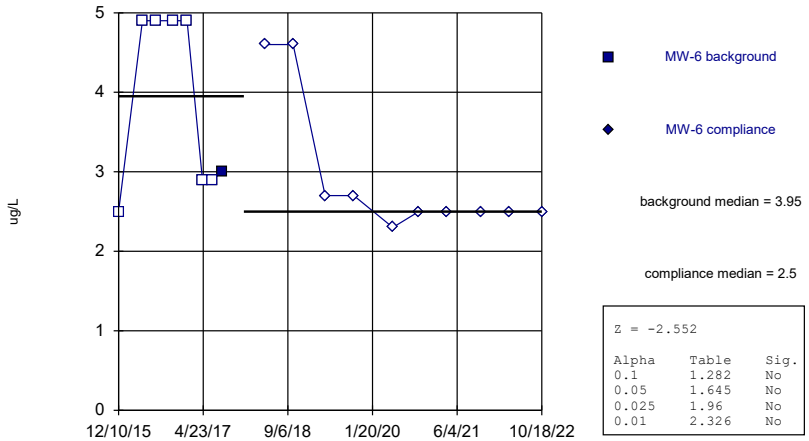
Lithium



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

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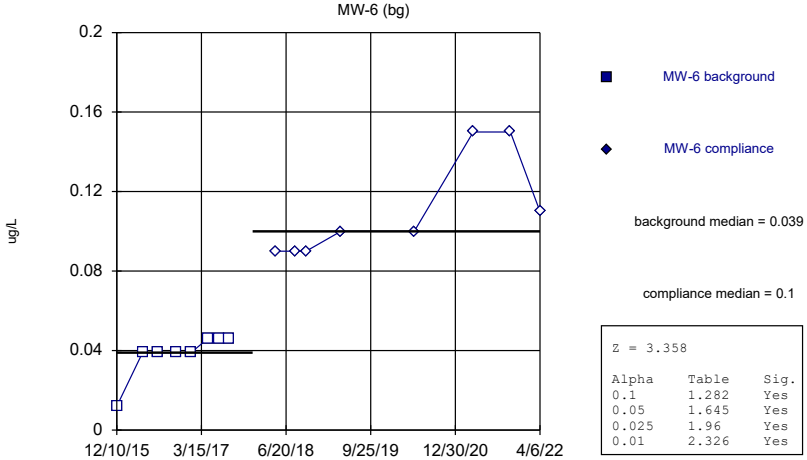
Hollow symbols indicate censored values.

Mercury



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

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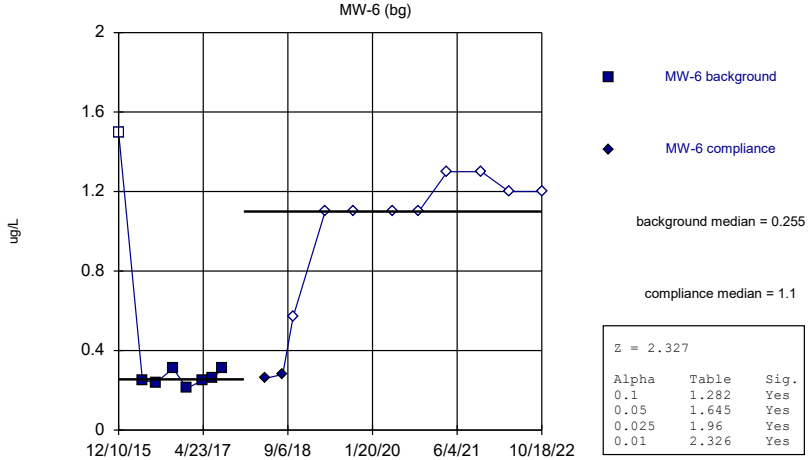
Hollow symbols indicate censored values.

Molybdenum



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Lead (ug/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	<1.9 (U)	
4/29/2016	<0.19 (U)	
7/20/2016	<0.19 (U)	
10/27/2016	<0.19 (U)	
1/18/2017	<0.19 (U)	
4/19/2017	0.13 (J)	
6/19/2017	<0.033 (U)	
8/15/2017	0.065 (J)	
4/26/2018		<0.033 (U)
8/7/2018		<0.12 (U)
10/8/2018		<0.13 (U)
4/15/2019		<0.27 (U)
10/2/2019		<0.27 (U)
5/20/2020		<0.27 (U)
10/20/2020		<0.11 (U)
4/7/2021		<0.21 (U)
10/26/2021		<0.21 (U)
4/6/2022		<0.24 (U)
10/18/2022		<0.24 (U)

ND substitution: RL or RL/2 if <15% NDs.

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Lithium (ug/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	<2.5 (U)	
4/29/2016	<4.9 (U)	
7/20/2016	<4.9 (U)	
10/27/2016	<4.9 (U)	
1/18/2017	<4.9 (U)	
4/19/2017	<2.9 (U)	
6/19/2017	<2.9 (U)	
8/15/2017	3 (J)	
4/26/2018		<4.6 (U)
10/8/2018		<4.6 (U)
4/15/2019		<2.7 (U)
10/2/2019		<2.7 (U)
5/20/2020		<2.3 (U)
10/20/2020		<2.5 (U)
4/7/2021		<2.5 (U)
10/26/2021		<2.5 (U)
4/6/2022		<2.5 (U)
10/18/2022		<2.5 (U)

ND substitution: RL or RL/2 if <15% NDs.

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Mercury (ug/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	<0.012 (U)	
4/29/2016	<0.039 (U)	
7/20/2016	<0.039 (U)	
10/27/2016	<0.039 (U)	
1/18/2017	<0.039 (U)	
4/19/2017	<0.046 (U)	
6/19/2017	<0.046 (U)	
8/15/2017	<0.046 (U)	
4/26/2018		<0.09 (U)
8/7/2018		<0.09 (U)
10/8/2018		<0.09 (U)
4/15/2019		<0.1 (U)
5/20/2020		<0.1 (U)
4/7/2021		<0.15 (U)
10/26/2021		<0.15 (U)
4/6/2022		<0.11 (U)

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Molybdenum (ug/L) Analysis Run 12/16/2022 12:29 AM View: LAN As Trend

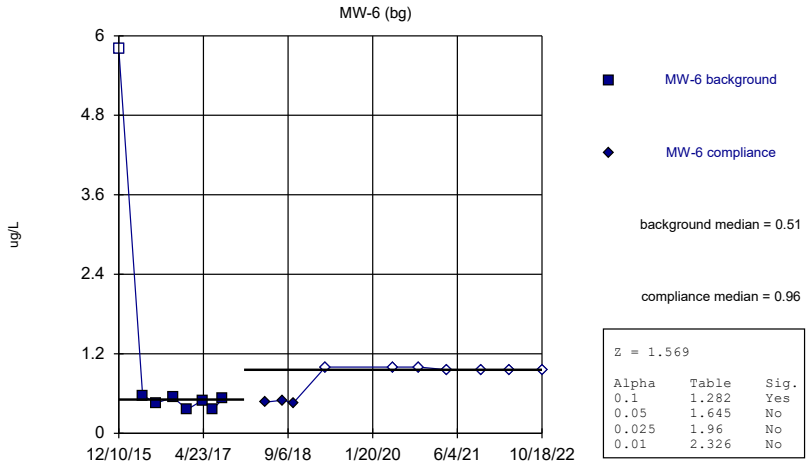
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	<1.5 (U)	
4/29/2016	0.25 (J)	
7/20/2016	0.24 (J)	
10/27/2016	0.31 (J)	
1/18/2017	0.21 (J)	
4/19/2017	0.25 (J)	
6/19/2017	0.26 (J)	
8/15/2017	0.31 (J)	
4/26/2018		0.26 (J)
8/7/2018		0.28 (J)
10/8/2018		<0.57 (U)
4/15/2019		<1.1 (U)
10/2/2019		<1.1 (U)
5/20/2020		<1.1 (U)
10/20/2020		<1.1 (U)
4/7/2021		<1.3 (U)
10/26/2021		<1.3 (U)
4/6/2022		<1.2 (U)
10/18/2022		<1.2 (U)

ND substitution: RL or RL/2 if <15% NDs.

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

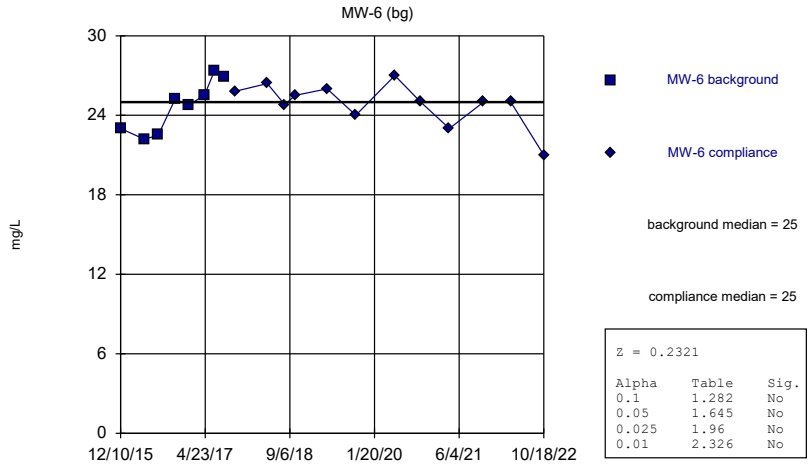
Selenium



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:27 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

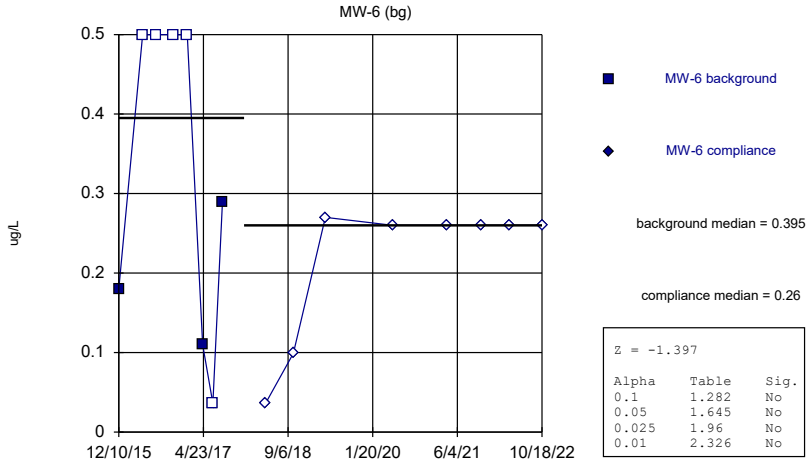
Sulfate



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:28 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

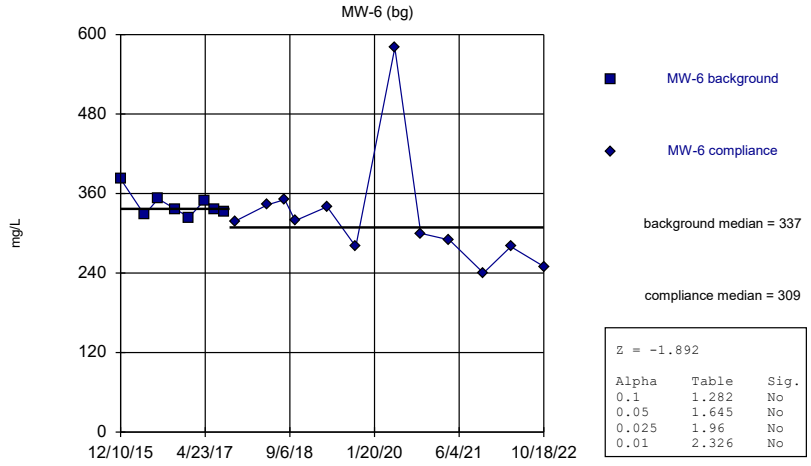
Thallium



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:28 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Total Dissolved Solids



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:28 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Selenium (ug/L) Analysis Run 12/16/2022 12:30 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	<5.8 (U)	
4/29/2016	0.57 (J)	
7/20/2016	0.46 (J)	
10/27/2016	0.54 (J)	
1/18/2017	0.36 (J)	
4/19/2017	0.5 (J)	
6/19/2017	0.36 (J)	
8/15/2017	0.52 (J)	
4/26/2018		0.47 (J)
8/7/2018		0.5 (J)
10/8/2018		0.46 (J)
4/15/2019		<1 (U)
5/20/2020		<1 (U)
10/20/2020		<1 (U)
4/7/2021		<0.96 (U)
10/26/2021		<0.96 (U)
4/6/2022		<0.96 (U)
10/18/2022		<0.96 (U)

ND substitution: RL or RL/2 if <15% NDs.

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Sulfate (mg/L) Analysis Run 12/16/2022 12:30 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	23	
4/29/2016	22.2	
7/20/2016	22.5	
10/27/2016	25.2	
1/18/2017	24.8	
4/19/2017	25.5	
6/19/2017	27.4	
8/15/2017	26.9	
10/16/2017		25.8
4/26/2018		26.4
8/7/2018		24.8
10/8/2018		25.5
4/15/2019		26
10/2/2019		24
5/20/2020		27
10/20/2020		25
4/7/2021		23
10/26/2021		25
4/6/2022		25
10/18/2022		21

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Thallium (ug/L) Analysis Run 12/16/2022 12:30 AM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	0.18 (J)	
4/29/2016	<0.5 (U)	
7/20/2016	<0.5 (U)	
10/27/2016	<0.5 (U)	
1/18/2017	<0.5 (U)	
4/19/2017	0.11 (J)	
6/19/2017	<0.036 (U)	
8/15/2017	0.29 (J)	
4/26/2018		<0.036 (U)
10/8/2018		<0.099 (U)
4/15/2019		<0.27 (U)
5/20/2020		<0.26 (U)
4/7/2021		<0.26 (U)
10/26/2021		<0.26 (U)
4/6/2022		<0.26 (U)
10/18/2022		<0.26 (U)

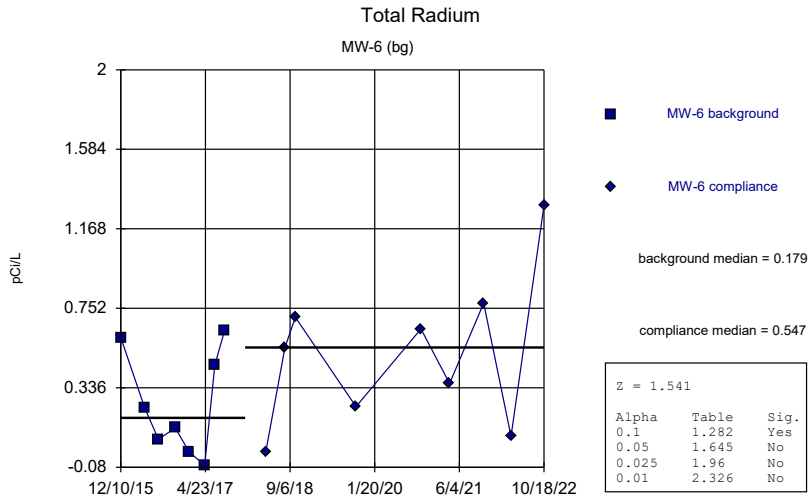
ND substitution: RL or RL/2 if <15% NDs.

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Total Dissolved Solids (mg/L) Analysis Run 12/16/2022 12:30 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	382	
4/29/2016	328	
7/20/2016	352	
10/27/2016	337	
1/18/2017	324	
4/19/2017	350	
6/19/2017	337	
8/15/2017	333	
10/16/2017		318
4/26/2018		343
8/7/2018		351
10/8/2018		319
4/15/2019		340
10/2/2019		280
5/20/2020		580
10/20/2020		300
4/7/2021		290
10/26/2021		240
4/6/2022		280
10/18/2022		250



Mann-Whitney (Wilcoxon Rank Sum) Analysis Run 12/16/2022 12:28 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Total Radium (pCi/L) Analysis Run 12/16/2022 12:30 AM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6	MW-6
12/10/2015	0.599	
4/29/2016	0.232	
7/20/2016	0.0668	
10/27/2016	0.126	
1/18/2017	0	
4/19/2017	-0.07	
6/19/2017	0.457	
8/15/2017	0.633	
4/16/2018		0
8/7/2018		0.547
10/8/2018		0.705
10/2/2019		0.237
10/20/2020		0.644
4/7/2021		0.359
10/26/2021		0.779
4/6/2022		0.0823
10/18/2022		1.29

Attachment 4

Interwell Prediction Limit Analysis – Appendix III

Prediction Limit

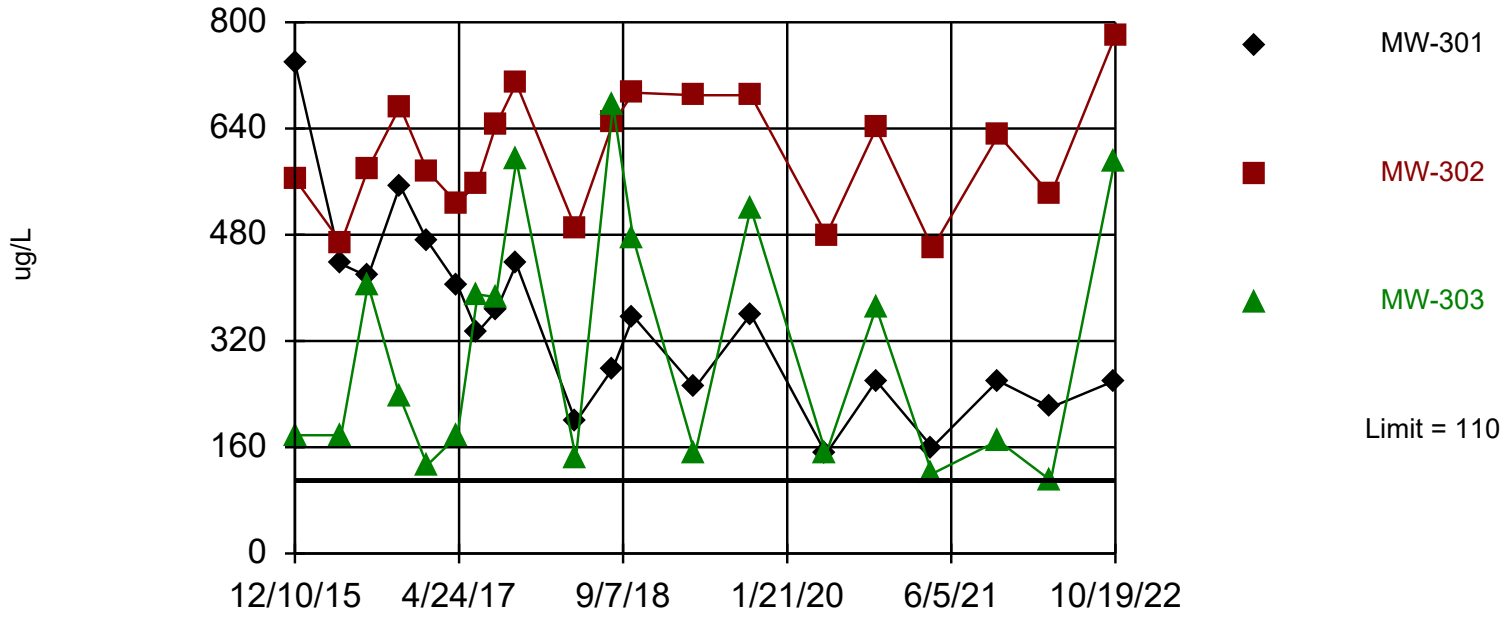
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev Printed 1/1/2023, 5:07 PM

Constituent	Well	Upper Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (ug/L)	**MW-301**	**110**	**10/17/2022**	**260**	**Yes**	**20**	**MW-6**	**n/a**	**n/a**	**55**	**n/a**	**n/a**	**0.004138**	**NP Inter (NDs) 1 of 2**
Boron (ug/L)	**MW-302**	**110**	**10/19/2022**	**780**	**Yes**	**20**	**MW-6**	**n/a**	**n/a**	**55**	**n/a**	**n/a**	**0.004138**	**NP Inter (NDs) 1 of 2**
Boron (ug/L)	**MW-303**	**110**	**10/17/2022**	**590**	**Yes**	**20**	**MW-6**	**n/a**	**n/a**	**55**	**n/a**	**n/a**	**0.004138**	**NP Inter (NDs) 1 of 2**
Calcium (mg/L)	MW-301	73.7	10/17/2022	67	No	20	MW-6	69.05	2.475	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	**MW-302**	**73.7**	**10/19/2022**	**110**	**Yes**	**20**	**MW-6**	**69.05**	**2.475**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	MW-303	73.7	10/17/2022	42	No	20	MW-6	69.05	2.475	0	None	No	0.002505	Param Inter 1 of 2
Chloride (mg/L)	**MW-301**	**8.13**	**10/17/2022**	**15**	**Yes**	**20**	**MW-6**	**6.675**	**0.7684**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Chloride (mg/L)	**MW-302**	**8.13**	**10/19/2022**	**11**	**Yes**	**20**	**MW-6**	**6.675**	**0.7684**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Chloride (mg/L)	**MW-303**	**8.13**	**10/17/2022**	**17**	**Yes**	**20**	**MW-6**	**6.675**	**0.7684**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Field pH (Std. Units)	**MW-301**	**7.98**	**10/17/2022**	**8.1**	**Yes**	**20**	**MW-6**	**7.562**	**0.2242**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Field pH (Std. Units)	MW-302	7.98	10/19/2022	6.87	No	20	MW-6	7.562	0.2242	0	None	No	0.002505	Param Inter 1 of 2
Field pH (Std. Units)	MW-303	7.98	10/17/2022	7.66	No	20	MW-6	7.562	0.2242	0	None	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	MW-301	0.304	10/17/2022	0.22ND	No	20	MW-6	-2.144	0.5056	40	Kapla...	ln(x)	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	MW-302	0.304	10/19/2022	0.22ND	No	20	MW-6	-2.144	0.5056	40	Kapla...	ln(x)	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	MW-303	0.304	10/17/2022	0.22ND	No	20	MW-6	-2.144	0.5056	40	Kapla...	ln(x)	0.002505	Param Inter 1 of 2
Sulfate (mg/L)	**MW-301**	**28**	**10/17/2022**	**63**	**Yes**	**20**	**MW-6**	**24.8**	**1.715**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Sulfate (mg/L)	MW-302	28	10/19/2022	1ND	No	20	MW-6	24.8	1.715	0	None	No	0.002505	Param Inter 1 of 2
Sulfate (mg/L)	**MW-303**	**28**	**10/17/2022**	**58**	**Yes**	**20**	**MW-6**	**24.8**	**1.715**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	MW-301	580	10/17/2022	280	No	20	MW-6	n/a	n/a	0	n/a	n/a	0.004138	NP Inter (normality) ...
Total Dissolved Solids (mg/L)	MW-302	580	10/19/2022	520	No	20	MW-6	n/a	n/a	0	n/a	n/a	0.004138	NP Inter (normality) ...
Total Dissolved Solids (mg/L)	MW-303	580	10/17/2022	200	No	20	MW-6	n/a	n/a	0	n/a	n/a	0.004138	NP Inter (normality) ...

Exceeds Limit: MW-301, MW-302, MW-303

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 20 background values. 55% NDs. Annual per-constituent alpha = 0.02457. Individual comparison alpha = 0.004138 (1 of 2). Comparing 3 points to limit.

Constituent: Boron Analysis Run 1/1/2023 5:06 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Prediction Limit

Constituent: Boron (ug/L) Analysis Run 1/1/2023 5:07 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

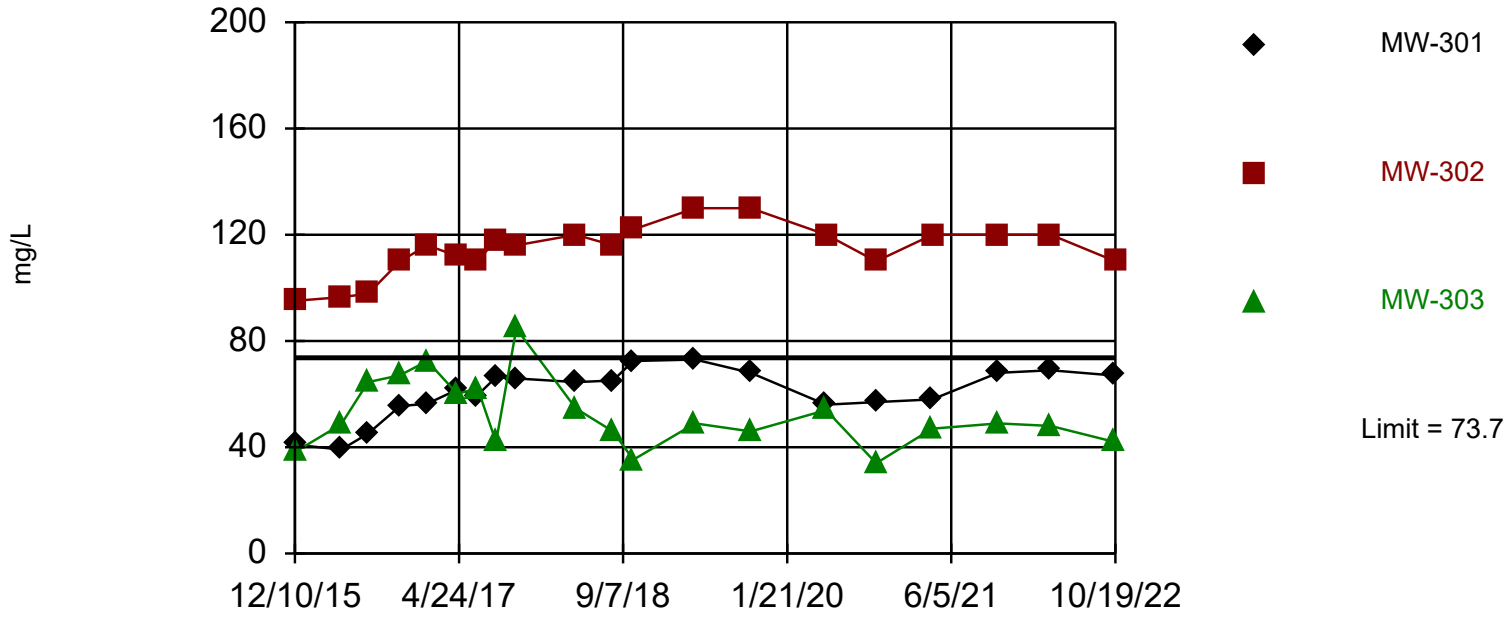
	MW-301	MW-302	MW-303	MW-6 (bg)
12/10/2015	739	564	178	25.7 (J)
4/29/2016	436	468	178	<50 (U)
7/20/2016	417	579	405	<50 (U)
10/26/2016	554	673	235	
10/27/2016				<50 (U)
1/17/2017	471	576	133	
1/18/2017				<50 (U)
4/19/2017	405	527	177	31.9 (J)
6/19/2017	333	558		42.1 (J)
6/20/2017			390	
8/15/2017	365	645	386	40 (J)
10/16/2017	436	708	592	41.2 (J)
4/16/2018	198	489	144	
4/26/2018				29.8 (J)
8/7/2018	279	648	675	42.9 (J)
10/8/2018	357	694	474	40.2 (J)
4/15/2019	250	690	150 (J)	<110 (U)
10/2/2019	360	690	520	<110 (U)
5/19/2020	150		150	
5/20/2020		480		<73 (U)
10/19/2020	260	640	370	
10/20/2020				<80 (U)
4/7/2021				<58 (U)
4/8/2021	160		120	
4/9/2021		460		
10/26/2021	260		170	64 (J)
10/27/2021		630		
4/5/2022	220	540	110	
4/6/2022				<58 (U)
10/17/2022	260		590	
10/18/2022				<58 (U)
10/19/2022		780		

ND substitution: RL or RL/2 if <15% NDs.

Exceeds Limit: MW-302

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=69.05, Std. Dev.=2.475, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9632, critical = 0.868. Kappa = 1.888 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Calcium Analysis Run 1/1/2023 5:06 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 1/1/2023 5:07 PM View: LAN As Trend

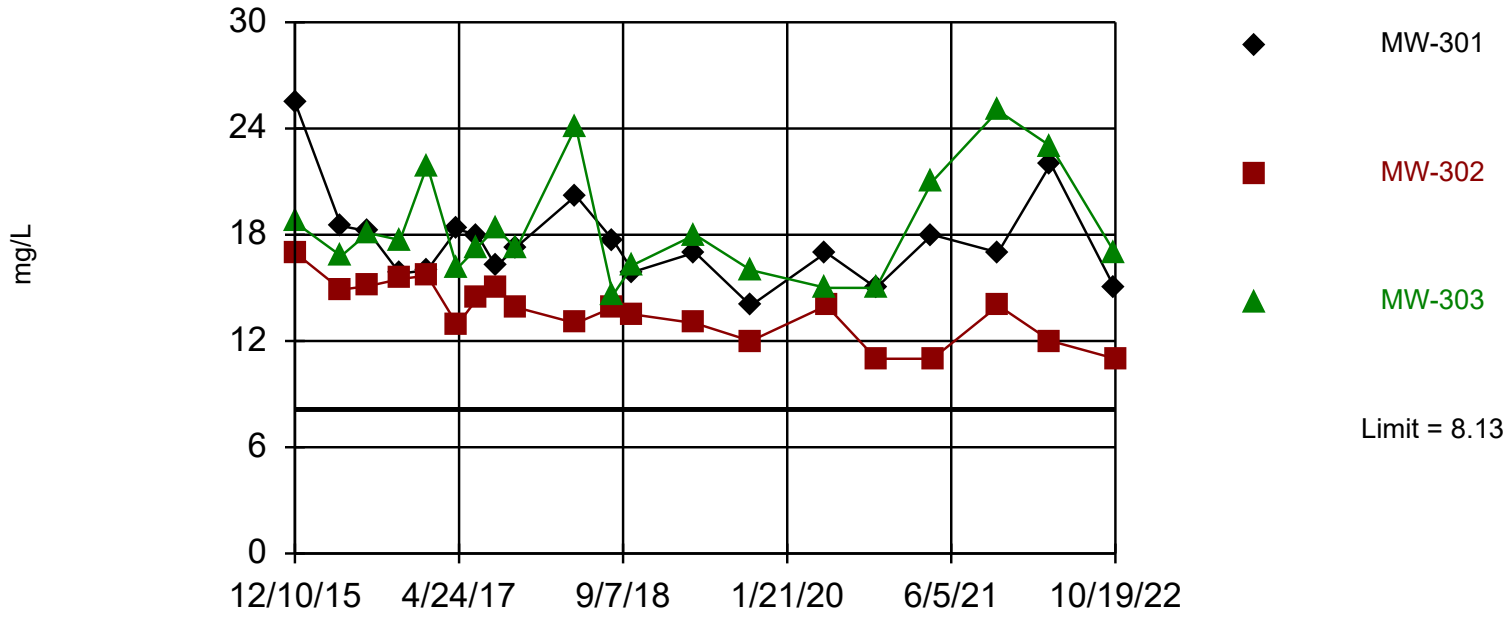
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-303	MW-6 (bg)
12/10/2015	41	95.1	38.2	64
4/29/2016	39.1	96.5	48.6	72.6
7/20/2016	45.1	97.8	64.5	68.9
10/26/2016	55.5	110	67.1	
10/27/2016				68.6
1/17/2017	56.4	116	72.5	
1/18/2017				68.6
4/19/2017	61.7	112	60.1	67.8
6/19/2017	59.5	110		64.6
6/20/2017			62.2	
8/15/2017	66.4	118	42	68.2
10/16/2017	65.9	116	84.7	66.9
4/16/2018	64.5	120	54.6	
4/26/2018				72.7
8/7/2018	65.1	116	46	66.5
10/8/2018	72.5	122	35.3	69.6
4/15/2019	73	130	49	67
10/2/2019	68	130	46	70
5/19/2020	56		54	
5/20/2020		120		72
10/19/2020	57	110	34	
10/20/2020				69
4/7/2021				71
4/8/2021	58		47	
4/9/2021		120		
10/26/2021	68		49	72
10/27/2021		120		
4/5/2022	69	120	48	
4/6/2022				71
10/17/2022	67		42	
10/18/2022				70
10/19/2022		110		

Exceeds Limit: MW-301, MW-302, MW-303

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=6.675, Std. Dev.=0.7684, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9626, critical = 0.868. Kappa = 1.888 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Chloride Analysis Run 1/1/2023 5:06 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Prediction Limit

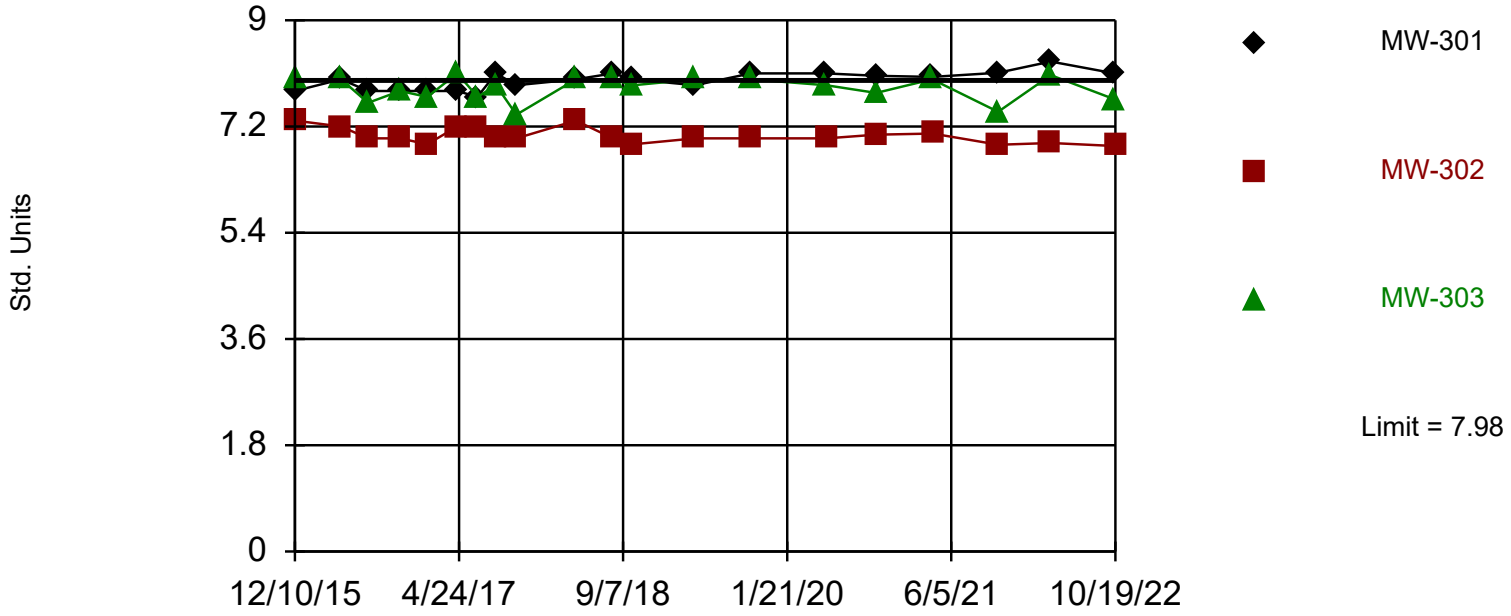
Constituent: Chloride (mg/L) Analysis Run 1/1/2023 5:07 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-303	MW-6 (bg)
12/10/2015	25.5	17	18.7	7.5
4/29/2016	18.5	14.9	16.8	7.6
7/20/2016	18.2	15.1	18.1	8.1
10/26/2016	15.8	15.5	17.7	
10/27/2016				6.8
1/17/2017	16	15.7	21.9	
1/18/2017				6.5
4/19/2017	18.3	12.9	16.1	6.3
6/19/2017	18	14.4		6.2
6/20/2017			17.3	
8/15/2017	16.2	15	18.4	6.5
10/16/2017	17.3	13.9	17.2	6.5
4/16/2018	20.2	13	24.1	
4/26/2018				6.5
8/7/2018	17.7	13.9	14.6	7.3
10/8/2018	15.9	13.5	16.3	6.6
4/15/2019	17	13	18	6.7
10/2/2019	14	12	16	6.9
5/19/2020	17		15	
5/20/2020		14		7.7
10/19/2020	15	11	15	
10/20/2020				5.6
4/7/2021				7
4/8/2021	18		21	
4/9/2021		11		
10/26/2021	17		25	6.8
10/27/2021		14		
4/5/2022	22	12	23	
4/6/2022				5.3
10/17/2022	15		17	
10/18/2022				5.1
10/19/2022		11		

Exceeds Limit: MW-301

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=7.562, Std. Dev.=0.2242, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9075, critical = 0.868. Kappa = 1.888 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Field pH Analysis Run 1/1/2023 5:06 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Prediction Limit

Constituent: Field pH (Std. Units) Analysis Run 1/1/2023 5:07 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

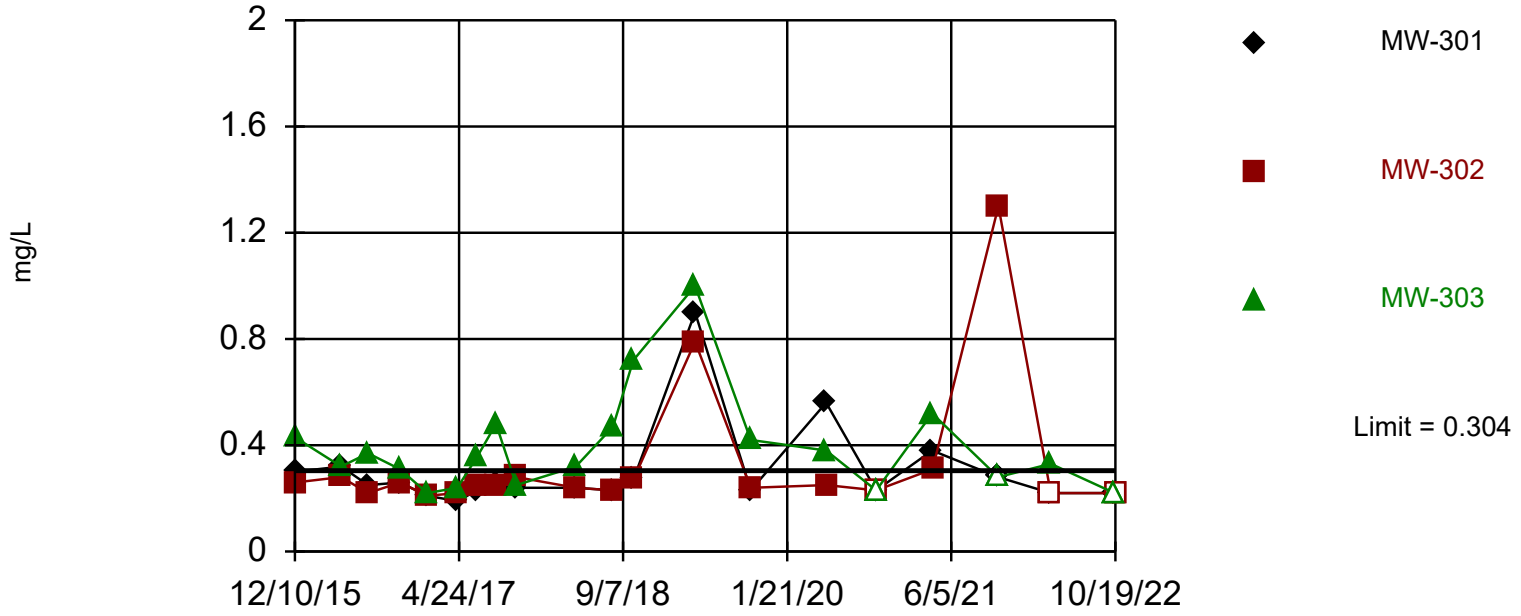
	MW-301	MW-302	MW-303	MW-6 (bg)
12/10/2015	7.8	7.3	8	8
4/29/2016	8	7.2	8	7.7
7/20/2016	7.8	7	7.6	7.4
10/26/2016	7.8	7	7.8	
10/27/2016				7.7
1/17/2017	7.8	6.9	7.7	
1/18/2017				8.1
4/19/2017	7.8	7.2	8.1	7.8
6/19/2017	7.7	7.2		7.2
6/20/2017			7.7	
8/15/2017	8.1	7	7.9	7.5
10/16/2017	7.9	7	7.4	7.5
4/16/2018	8	7.3	8	
4/26/2018				7.7
8/7/2018	8.1	7	8	7.5
10/8/2018	8	6.9	7.9	7.4
4/15/2019	7.9	7	8	7.5
10/2/2019	8.1	7	8	7.5
5/19/2020	8.1		7.9	
5/20/2020		7		7.5
10/19/2020	8.06	7.06	7.77	
10/20/2020				7.42
4/7/2021				7.39
4/8/2021	8.04		8	
4/9/2021		7.08		
10/26/2021	8.11		7.45	7.7
10/27/2021		6.89		
4/5/2022	8.3	6.92	8.07	
4/6/2022				7.32
10/17/2022	8.1		7.66	
10/18/2022				7.4
10/19/2022		6.87		

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on natural log transformation) (after Kaplan-Meier Adjustment): Mean=-2.144, Std. Dev.=0.5056, n=20, 40% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9226, critical = 0.868. Kappa = 1.888 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Fluoride Analysis Run 1/1/2023 5:06 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 1/1/2023 5:07 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-303	MW-6 (bg)
12/10/2015	0.3	0.26	0.43	0.094 (J)
4/29/2016	0.32	0.28	0.32	0.15 (J)
7/20/2016	0.25	0.22	0.37	0.082 (J)
10/26/2016	0.26	0.26	0.31	
10/27/2016				0.12 (J)
1/17/2017	0.21	0.21	0.22	
1/18/2017				0.092 (J)
4/19/2017	0.19 (J)	0.22	0.24	<0.1 (U)
6/19/2017	0.23	0.25		0.1 (J)
6/20/2017			0.36	
8/15/2017	0.26	0.25	0.48	0.12 (J)
10/16/2017	0.24	0.28	0.25	0.14 (J)
4/16/2018	0.24	0.24	0.32	
4/26/2018				0.084 (J)
8/7/2018	0.23	0.23	0.47	0.12 (J)
10/8/2018	0.27	0.27	0.72	<0.19 (U)
4/15/2019	0.9	0.79	1	0.63
10/2/2019	0.23 (J)	0.24 (J)	0.42 (J)	<0.23 (U)
5/19/2020	0.56		0.38 (J)	
5/20/2020		0.25 (J)		<0.23 (U)
10/19/2020	<0.23 (U)	<0.23 (U)	<0.23 (U)	
10/20/2020				<0.23 (U)
4/7/2021				0.34 (J)
4/8/2021	0.38 (J)		0.52	
4/9/2021		0.31 (J)		
10/26/2021	<0.28 (U)		<0.28 (U)	<0.28 (U)
10/27/2021		1.3		
4/5/2022	<0.22 (U)	<0.22 (U)	0.33 (J)	
4/6/2022				<0.22 (U)
10/17/2022	<0.22 (U)		<0.22 (U)	
10/18/2022				<0.22 (U)
10/19/2022		<0.22 (U)		

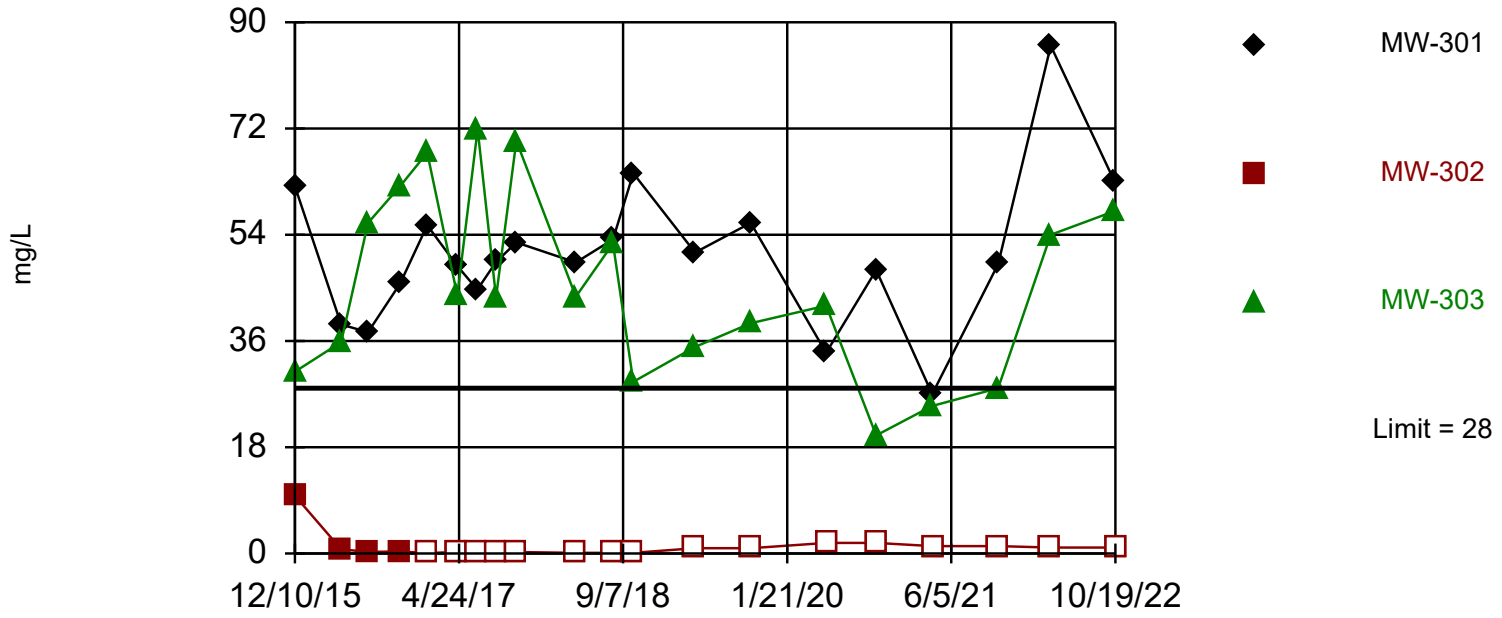
ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Exceeds Limit: MW-301, MW-303

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=24.8, Std. Dev.=1.715, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9494, critical = 0.868. Kappa = 1.888 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Sulfate Analysis Run 1/1/2023 5:06 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 1/1/2023 5:07 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

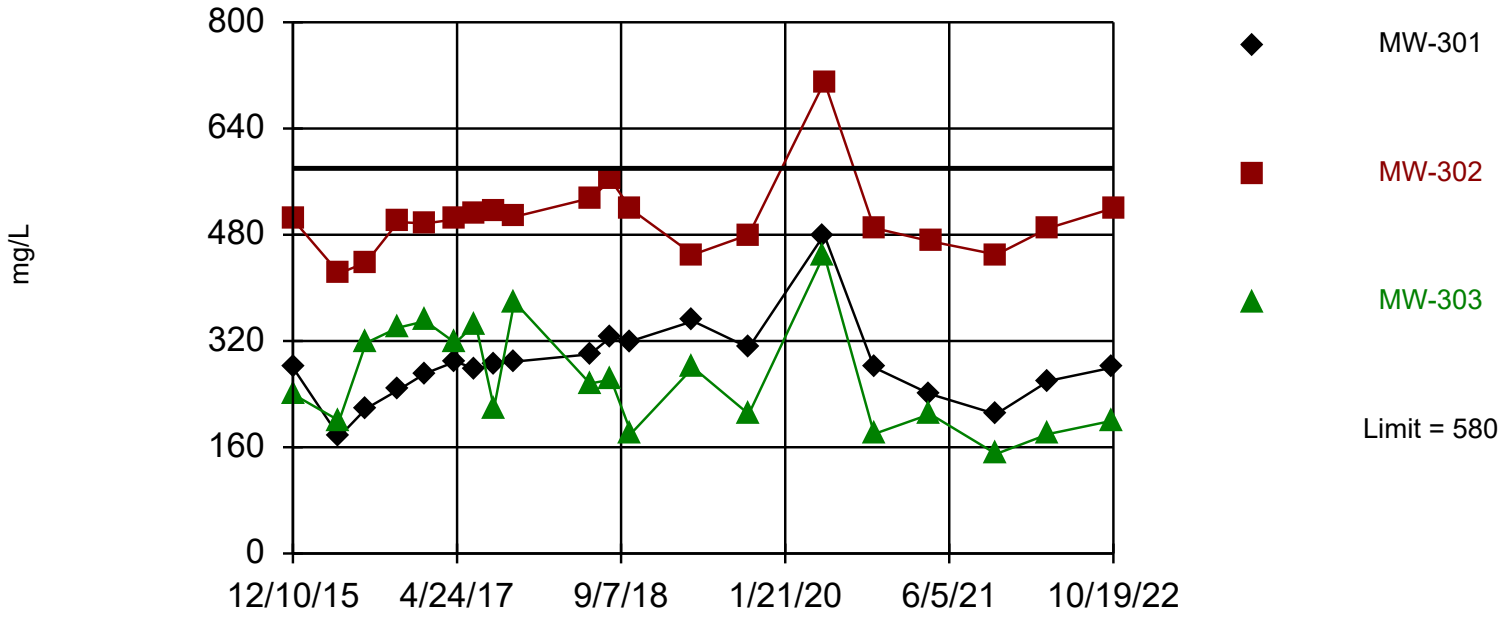
	MW-301	MW-302	MW-303	MW-6 (bg)
12/10/2015	62.2	9.8	30.8	23
4/29/2016	38.8	0.72 (J)	35.8	22.2
7/20/2016	37.5	0.29 (J)	56	22.5
10/26/2016	45.7	0.32 (J)	62.2	
10/27/2016				25.2
1/17/2017	55.6	<0.15 (U)	67.9	
1/18/2017				24.8
4/19/2017	48.7	<0.5 (U)	43.7	25.5
6/19/2017	44.7	<0.5 (U)		27.4
6/20/2017			71.9	
8/15/2017	49.4	<0.5 (U)	43.4	26.9
10/16/2017	52.7	<0.5 (U)	69.9	25.8
4/16/2018	49.3	<0.24 (U)	43.5	
4/26/2018				26.4
8/7/2018	53.2	<0.24 (U)	52.5	24.8
10/8/2018	64.4	<0.24 (U)	29.1	25.5
4/15/2019	51	<1.8 (U)	35	26
10/2/2019	56	<1.8 (U)	39	24
5/19/2020	34		42	
5/20/2020		<3.6 (U)		27
10/19/2020	48	<3.6 (U)	20	
10/20/2020				25
4/7/2021				23
4/8/2021	27		25	
4/9/2021		<2.5 (U)		
10/26/2021	49		28	25
10/27/2021		<2.5 (U)		
4/5/2022	86	<2 (U)	54	
4/6/2022				25
10/17/2022	63		58	
10/18/2022				21
10/19/2022		<2 (U)		

ND substitution: RL or RL/2 if <15% NDs.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 20 background values. Annual per-constituent alpha = 0.02457. Individual comparison alpha = 0.004138 (1 of 2). Comparing 3 points to limit.

Constituent: Total Dissolved Solids Analysis Run 1/1/2023 5:06 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 1/1/2023 5:07 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-303	MW-6 (bg)
12/10/2015	280	503	240	382
4/29/2016	176	422	200	328
7/20/2016	218	438	317	352
10/26/2016	246	499	340	
10/27/2016				337
1/17/2017	271	497	350	
1/18/2017				324
4/19/2017	289	503	317	350
6/19/2017	278	512		337
6/20/2017			346	
8/15/2017	285	517	219	333
10/16/2017	289	507	379	318
4/26/2018				343
6/4/2018	300	535	256	
8/7/2018	326	562	262	351
10/8/2018	320	518	181	319
4/15/2019	350	450	280	340
10/2/2019	310	480	210	280
5/19/2020	480		450	
5/20/2020		710		580
10/19/2020	280	490	180	
10/20/2020				300
4/7/2021				290
4/8/2021	240		210	
4/9/2021		470		
10/26/2021	210		150	240
10/27/2021		450		
4/5/2022	260	490	180	
4/6/2022				280
10/17/2022	280		200	
10/18/2022				250
10/19/2022		520		

Attachment 5

Interwell Tolerance Limit Analysis – Appendix IV

Tolerance Limit

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev Printed 1/1/2023, 5:05 PM

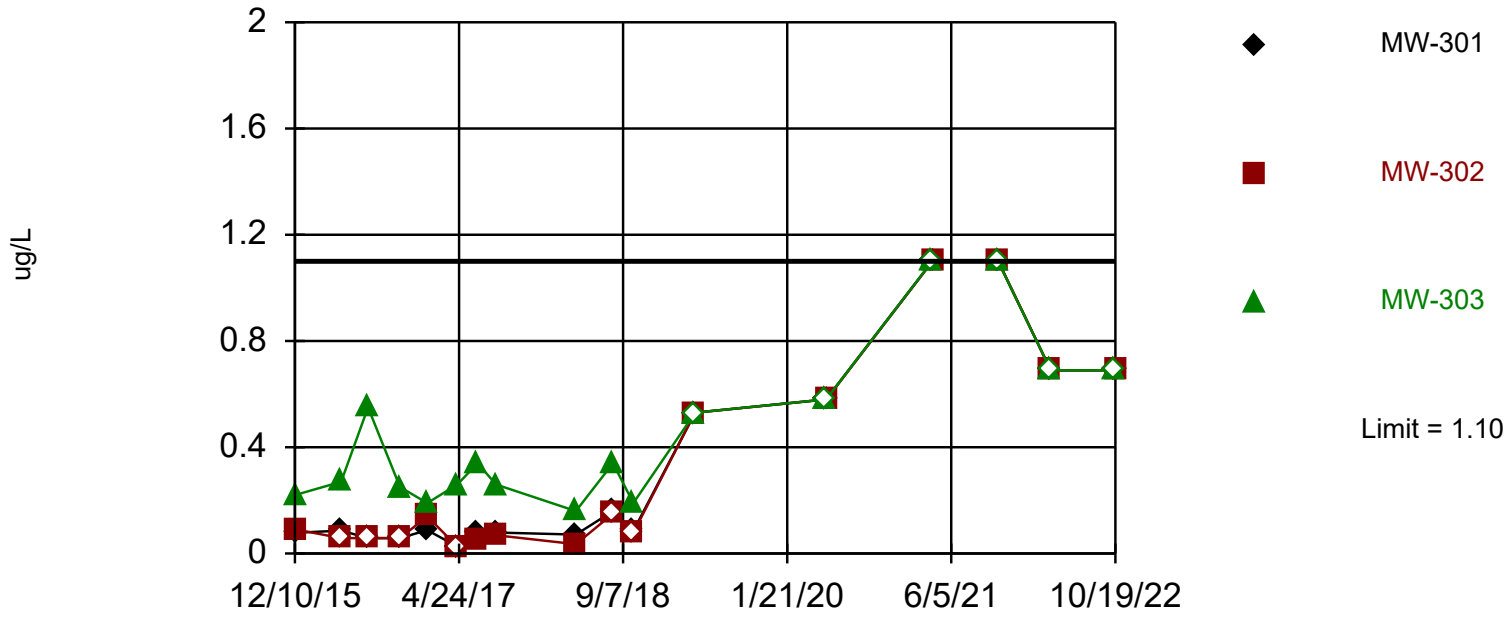
Constituent	Well	Upper Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (ug/L)	MW-301	1.10	10/17/2022	<0.69 (U)	No	17	MW-6	82.35	n/a	n/a	0.1651	NP Inter(NDs)
Antimony (ug/L)	MW-302	1.10	10/19/2022	<0.69 (U)	No	17	MW-6	82.35	n/a	n/a	0.1651	NP Inter(NDs)
Antimony (ug/L)	MW-303	1.10	10/17/2022	<0.69 (U)	No	17	MW-6	82.35	n/a	n/a	0.1651	NP Inter(NDs)
Arsenic (ug/L)	**MW-301**	**4.50**	**10/17/2022**	**5**	**Yes**	**19**	**MW-6**	**47.37**	**n/a**	**n/a**	**0.1461**	**NP Inter(normal...**
Arsenic (ug/L)	**MW-302**	**4.50**	**10/19/2022**	**51**	**Yes**	**19**	**MW-6**	**47.37**	**n/a**	**n/a**	**0.1461**	**NP Inter(normal...**
Arsenic (ug/L)	MW-303	4.50	10/17/2022	1.9	No	19	MW-6	47.37	n/a	n/a	0.1461	NP Inter(normal...
Barium (ug/L)	**MW-301**	**50.2**	**10/17/2022**	**160**	**Yes**	**19**	**MW-6**	**0**	**None**	**No**	**0.01695**	**Inter**
Barium (ug/L)	**MW-302**	**50.2**	**10/19/2022**	**790**	**Yes**	**19**	**MW-6**	**0**	**None**	**No**	**0.01695**	**Inter**
Barium (ug/L)	**MW-303**	**50.2**	**10/17/2022**	**230**	**Yes**	**19**	**MW-6**	**0**	**None**	**No**	**0.01695**	**Inter**
Beryllium (ug/L)	MW-301	0.270	10/17/2022	<0.27 (U)	No	17	MW-6	100	n/a	n/a	0.1651	NP Inter(NDs)
Beryllium (ug/L)	MW-302	0.270	10/19/2022	<0.27 (U)	No	17	MW-6	100	n/a	n/a	0.1651	NP Inter(NDs)
Beryllium (ug/L)	MW-303	0.270	10/17/2022	<0.27 (U)	No	17	MW-6	100	n/a	n/a	0.1651	NP Inter(NDs)
Cadmium (ug/L)	MW-301	0.0550	10/17/2022	<0.055 (U)	No	17	MW-6	100	n/a	n/a	0.1651	NP Inter(NDs)
Cadmium (ug/L)	MW-302	0.0550	10/19/2022	<0.055 (U)	No	17	MW-6	100	n/a	n/a	0.1651	NP Inter(NDs)
Cadmium (ug/L)	MW-303	0.0550	10/17/2022	<0.055 (U)	No	17	MW-6	100	n/a	n/a	0.1651	NP Inter(NDs)
Chromium (ug/L)	MW-301	1.10	10/17/2022	<1.1 (U)	No	19	MW-6	47.37	n/a	n/a	0.1461	NP Inter(normal...
Chromium (ug/L)	MW-302	1.10	10/19/2022	<1.1 (U)	No	19	MW-6	47.37	n/a	n/a	0.1461	NP Inter(normal...
Chromium (ug/L)	MW-303	1.10	10/17/2022	<1.1 (U)	No	19	MW-6	47.37	n/a	n/a	0.1461	NP Inter(normal...
Cobalt (ug/L)	MW-301	0.500	10/17/2022	<0.19 (U)	No	19	MW-6	89.47	n/a	n/a	0.1461	NP Inter(NDs)
Cobalt (ug/L)	**MW-302**	**0.500**	**10/19/2022**	**1.2**	**Yes**	**19**	**MW-6**	**89.47**	**n/a**	**n/a**	**0.1461**	**NP Inter(NDs)**
Cobalt (ug/L)	MW-303	0.500	10/17/2022	<0.19 (U)	No	19	MW-6	89.47	n/a	n/a	0.1461	NP Inter(NDs)
Fluoride (mg/L)	MW-301	0.630	10/17/2022	<0.22 (U)	No	20	MW-6	40	n/a	n/a	0.1375	NP Inter(Cohens...
Fluoride (mg/L)	MW-302	0.630	10/19/2022	<0.22 (U)	No	20	MW-6	40	n/a	n/a	0.1375	NP Inter(Cohens...
Fluoride (mg/L)	MW-303	0.630	10/17/2022	<0.22 (U)	No	20	MW-6	40	n/a	n/a	0.1375	NP Inter(Cohens...
Lead (ug/L)	MW-301	1.90	10/17/2022	<0.24 (U)	No	19	MW-6	89.47	n/a	n/a	0.1461	NP Inter(NDs)
Lead (ug/L)	MW-302	1.90	10/19/2022	0.39	No	19	MW-6	89.47	n/a	n/a	0.1461	NP Inter(NDs)
Lead (ug/L)	MW-303	1.90	10/17/2022	<0.24 (U)	No	19	MW-6	89.47	n/a	n/a	0.1461	NP Inter(NDs)
Lithium (ug/L)	MW-301	4.90	10/17/2022	8.7	No	18	MW-6	94.44	n/a	n/a	0.1553	NP Inter(NDs)
Lithium (ug/L)	MW-302	4.90	10/19/2022	<2.5 (U)	No	18	MW-6	94.44	n/a	n/a	0.1553	NP Inter(NDs)
Lithium (ug/L)	**MW-303**	**4.90**	**10/17/2022**	**10**	**Yes**	**18**	**MW-6**	**94.44**	**n/a**	**n/a**	**0.1553**	**NP Inter(NDs)**
Mercury (ug/L)	MW-301	0.110	4/5/2022	<0.11 (U)	No	16	MW-6	100	n/a	n/a	0.1758	NP Inter(NDs)
Mercury (ug/L)	MW-302	0.110	4/5/2022	<0.11 (U)	No	16	MW-6	100	n/a	n/a	0.1758	NP Inter(NDs)
Mercury (ug/L)	MW-303	0.110	4/5/2022	<0.11 (U)	No	16	MW-6	100	n/a	n/a	0.1758	NP Inter(NDs)
Molybdenum (ug/L)	**MW-301**	**1.50**	**10/17/2022**	**12**	**Yes**	**19**	**MW-6**	**52.63**	**n/a**	**n/a**	**0.1461**	**NP Inter(NDs)**
Molybdenum (ug/L)	MW-302	1.50	10/19/2022	1.2	No	19	MW-6	52.63	n/a	n/a	0.1461	NP Inter(NDs)
Molybdenum (ug/L)	**MW-303**	**1.50**	**10/17/2022**	**22**	**Yes**	**19**	**MW-6**	**52.63**	**n/a**	**n/a**	**0.1461**	**NP Inter(NDs)**
Selenium (ug/L)	MW-301	5.80	10/17/2022	<0.96 (U)	No	18	MW-6	44.44	n/a	n/a	0.1553	NP Inter(normal...
Selenium (ug/L)	MW-302	5.80	10/19/2022	<0.96 (U)	No	18	MW-6	44.44	n/a	n/a	0.1553	NP Inter(normal...
Selenium (ug/L)	MW-303	5.80	10/17/2022	<0.96 (U)	No	18	MW-6	44.44	n/a	n/a	0.1553	NP Inter(normal...
Thallium (ug/L)	MW-301	0.500	10/17/2022	<0.26 (U)	No	16	MW-6	81.25	n/a	n/a	0.1758	NP Inter(NDs)
Thallium (ug/L)	MW-302	0.500	10/19/2022	<0.26 (U)	No	16	MW-6	81.25	n/a	n/a	0.1758	NP Inter(NDs)
Thallium (ug/L)	MW-303	0.500	10/17/2022	<0.26 (U)	No	16	MW-6	81.25	n/a	n/a	0.1758	NP Inter(NDs)
Total Radium (pCi/L)	MW-301	1.29	10/17/2022	0.83	No	17	MW-6	0	None	No	0.01695	Inter
Total Radium (pCi/L)	**MW-302**	**1.29**	**10/19/2022**	**4.33**	**Yes**	**17**	**MW-6**	**0**	**None**	**No**	**0.01695**	**Inter**
Total Radium (pCi/L)	MW-303	1.29	10/17/2022	0.512	No	17	MW-6	0	None	No	0.01695	Inter

Hollow symbols indicate censored values.

Within Limit

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Most recent observation is compared with limit. Limit is highest of 17 background values. 82.35% NDs. 76.37% coverage at alpha=0.01; 83.79% coverage at alpha=0.05; 95.9% coverage at alpha=0.5. Report alpha = 0.4181.

Constituent: Antimony Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Antimony (ug/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-303	MW-302	MW-6 (bg)
12/10/2015	0.078 (J)	0.22 (J)	0.091 (J)	0.18 (J)
4/29/2016	0.086 (J)	0.27 (J)	<0.058 (U)	<0.058 (U)
7/20/2016	<0.058 (U)	0.55 (J)	<0.058 (U)	<0.058 (U)
10/26/2016	<0.058 (U)	0.25 (J)	<0.058 (U)	
10/27/2016				<0.058 (U)
1/17/2017	0.088 (J)	0.19 (J)	0.14 (J)	
1/18/2017				<0.058 (U)
4/19/2017	<0.026 (U)	0.26 (J)	<0.026 (U)	<0.026 (U)
6/19/2017	0.08 (J)		0.048 (J)	0.027 (J)
6/20/2017		0.34 (J)		
8/15/2017	0.079 (J)	0.26 (J)	0.069 (J)	0.037 (J)
4/16/2018	0.071 (J)	0.16 (J)	0.035 (J)	
4/26/2018				<0.026 (U)
8/7/2018	0.16 (J)	0.34 (J)	<0.15 (U)	<0.15 (U)
10/8/2018	0.085 (J)	0.19 (J)	<0.078 (U)	<0.078 (U)
4/15/2019	<0.53 (U)	<0.53 (U)	<0.53 (U)	<0.53 (U)
5/19/2020	<0.58 (U)	<0.58 (U)		
5/20/2020			<0.58 (U)	<0.58 (U)
4/7/2021				<1.1 (U)
4/8/2021	<1.1 (U)	<1.1 (U)		
4/9/2021			<1.1 (U)	
10/26/2021	<1.1 (U)	<1.1 (U)		<1.1 (U)
10/27/2021			<1.1 (U)	
4/5/2022	<0.69 (U)	<0.69 (U)	<0.69 (U)	
4/6/2022				<0.69 (U)
10/17/2022	<0.69 (U)	<0.69 (U)		
10/18/2022				<0.69 (U)
10/19/2022			<0.69 (U)	

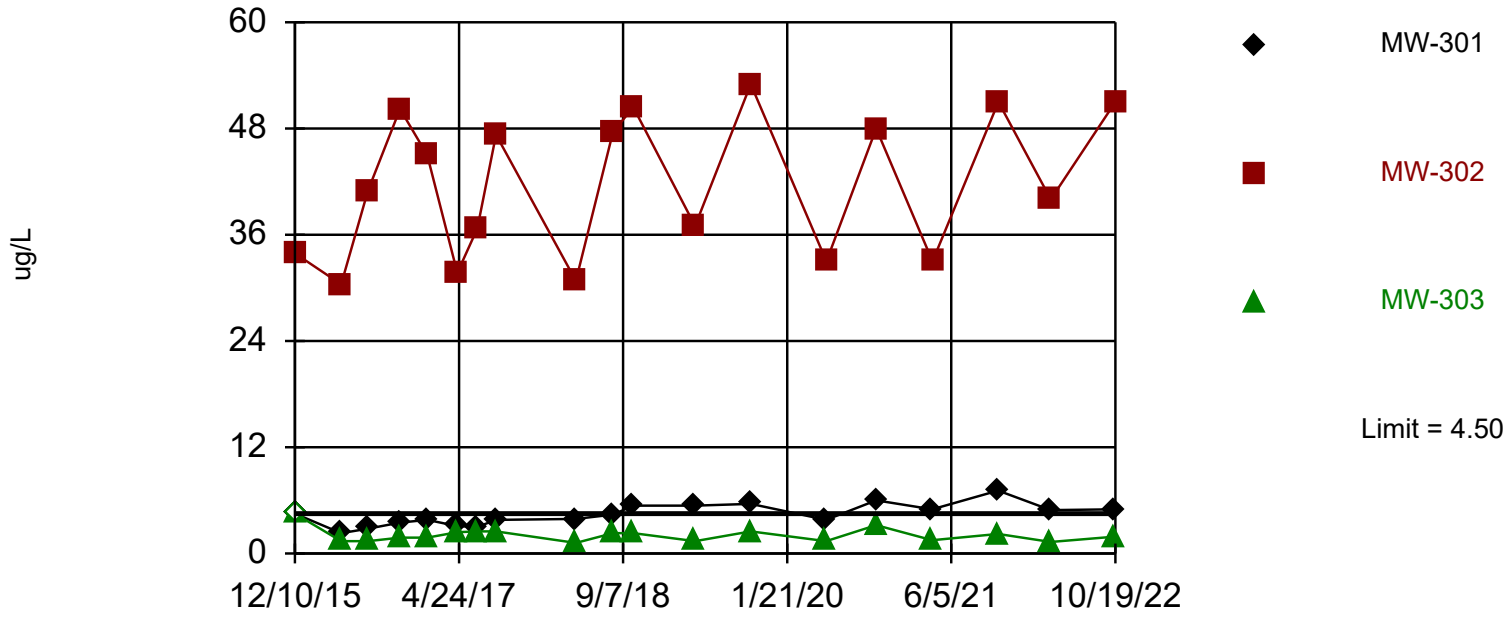
ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Exceeds Limit: MW-301, MW-302

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Most recent observation is compared with limit. Limit is highest of 19 background values. 47.37% NDs. 78.32% coverage at alpha=0.01; 85.35% coverage at alpha=0.05; 96.29% coverage at alpha=0.5. Report alpha = 0.3774.

Constituent: Arsenic Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Arsenic (ug/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

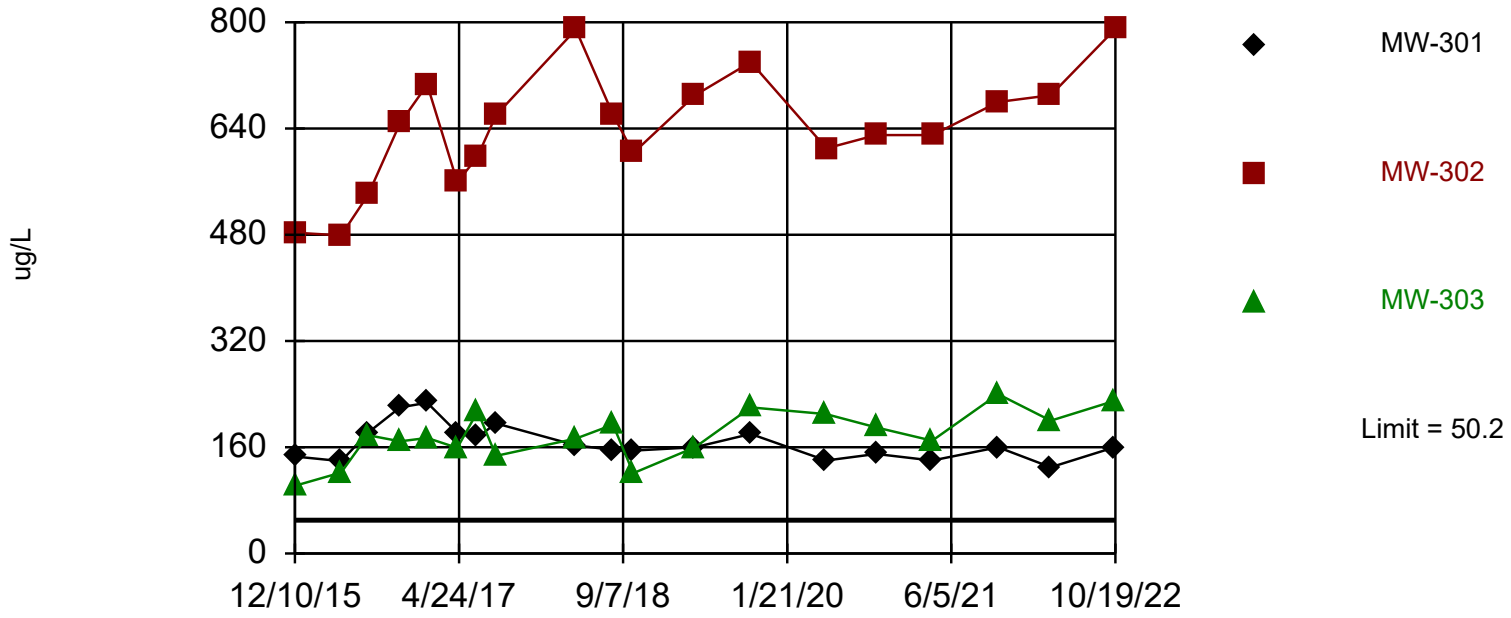
	MW-301	MW-6 (bg)	MW-302	MW-303
12/10/2015	<4.5 (U)	<4.5 (U)	33.9	<4.5 (U)
4/29/2016	2.3	0.28 (J)	30.4	1.4
7/20/2016	2.8	0.26 (J)	41	1.4
10/26/2016	3.5		50.2	1.8
10/27/2016		0.19 (J)		
1/17/2017	3.8		45	1.8
1/18/2017		0.23 (J)		
4/19/2017	3.1	0.28 (J)	31.7	2.4
6/19/2017	3	0.18 (J)	36.7	
6/20/2017				2.5
8/15/2017	3.8	0.28 (J)	47.3	2.5
4/16/2018	3.9		30.8	1.2
4/26/2018		0.23 (J)		
8/7/2018	4.4	0.26 (J)	47.6	2.3
10/8/2018	5.4	0.24 (J)	50.4	2.3
4/15/2019	5.4	<0.75 (U)	37	1.4 (J)
10/2/2019	5.6	<0.75 (U)	53	2.5
5/19/2020	3.8			1.4 (J)
5/20/2020		<0.88 (U)	33	
10/19/2020	6		48	3.2
10/20/2020		<0.88 (U)		
4/7/2021		<0.75 (U)		
4/8/2021	5			1.5 (J)
4/9/2021			33	
10/26/2021	7.1	<0.75 (U)		2.2
10/27/2021			51	
4/5/2022	4.9		40	1.3 (J)
4/6/2022		<0.75 (U)		
10/17/2022	5			1.9 (J)
10/18/2022		<0.75 (U)		
10/19/2022			51	

ND substitution: RL or RL/2 if <15% NDs.

Exceeds Limit: MW-301, MW-302, MW-303

Tolerance Limit

Interwell Parametric



95% coverage. Most recent observation is compared with limit. Background Data Summary: Mean=45.29, Std. Dev.=2.015, n=19. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9628, critical = 0.863. Report alpha = 0.05.

Constituent: Barium Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Barium (ug/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

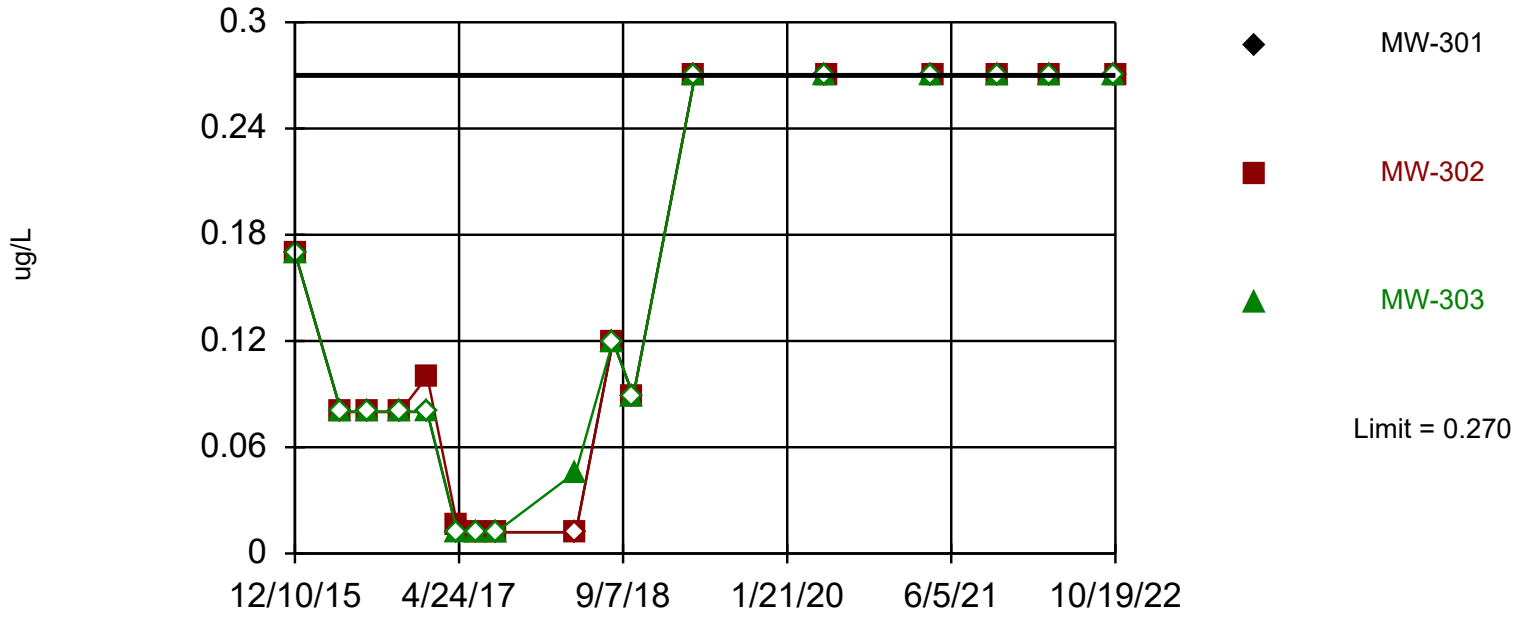
	MW-301	MW-6 (bg)	MW-302	MW-303
12/10/2015	146	45.5	483	102
4/29/2016	139	45.6	479	122
7/20/2016	182	43.8	540	178
10/26/2016	220		648	169
10/27/2016		44.6		
1/17/2017	227		706	174
1/18/2017		46.5		
4/19/2017	182	45.4	559	159
6/19/2017	175	41.9	597	
6/20/2017				214
8/15/2017	196	44	660	147
4/16/2018	163		789	173
4/26/2018		44.1		
8/7/2018	156	43.1	661	194
10/8/2018	155	43	603	121
4/15/2019	160	43	690	160
10/2/2019	180	46	740	220
5/19/2020	140			210
5/20/2020		46	610	
10/19/2020	150		630	190
10/20/2020		45		
4/7/2021		49 (B)		
4/8/2021	140 (B)			170 (B)
4/9/2021			630 (B)	
10/26/2021	160	47		240
10/27/2021			680	
4/5/2022	130		690	200
4/6/2022		48		
10/17/2022	160			230
10/18/2022		49		
10/19/2022			790	

Hollow symbols indicate censored values.

Within Limit

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Most recent observation is compared with limit. All background values were censored; limit is most recent reporting limit. 76.37% coverage at alpha=0.01; 83.79% coverage at alpha=0.05; 95.9% coverage at alpha=0.5. Report alpha = 0.4181.

Constituent: Beryllium Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Beryllium (ug/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-303	MW-302	MW-6 (bg)
12/10/2015	<0.17 (U)	<0.17 (U)	<0.17 (U)	<0.17 (U)
4/29/2016	<0.08 (U)	<0.08 (U)	<0.08 (U)	<0.08 (U)
7/20/2016	<0.08 (U)	<0.08 (U)	<0.08 (U)	<0.08 (U)
10/26/2016	<0.08 (U)	<0.08 (U)	<0.08 (U)	
10/27/2016				<0.08 (U)
1/17/2017	<0.08 (U)	<0.08 (U)	0.1 (J)	
1/18/2017				<0.08 (U)
4/19/2017	<0.012 (U)	<0.012 (U)	0.016 (J)	<0.012 (U)
6/19/2017	<0.012 (U)		<0.012 (U)	<0.012 (U)
6/20/2017		<0.012 (U)		
8/15/2017	<0.012 (U)	<0.012 (U)	0.012 (J)	<0.012 (U)
4/16/2018	<0.012 (U)	0.046 (J)	<0.012 (U)	
4/26/2018				<0.012 (U)
8/7/2018	<0.12 (U)	<0.12 (U)	<0.12 (U)	<0.12 (U)
10/8/2018	<0.089 (U)	<0.089 (U)	<0.089 (U)	<0.089 (U)
4/15/2019	<0.27 (U)	<0.27 (U)	<0.27 (U)	<0.27 (U)
5/19/2020	<0.27 (U)	<0.27 (U)		
5/20/2020			<0.27 (U)	<0.27 (U)
4/7/2021				<0.27 (U)
4/8/2021	<0.27 (U)	<0.27 (U)		
4/9/2021			<0.27 (U)	
10/26/2021	<0.27 (U)	<0.27 (U)		<0.27 (U)
10/27/2021			<0.27 (U)	
4/5/2022	<0.27 (U)	<0.27 (U)	<0.27 (U)	
4/6/2022				<0.27 (U)
10/17/2022	<0.27 (U)	<0.27 (U)		
10/18/2022				<0.27 (U)
10/19/2022			<0.27 (U)	

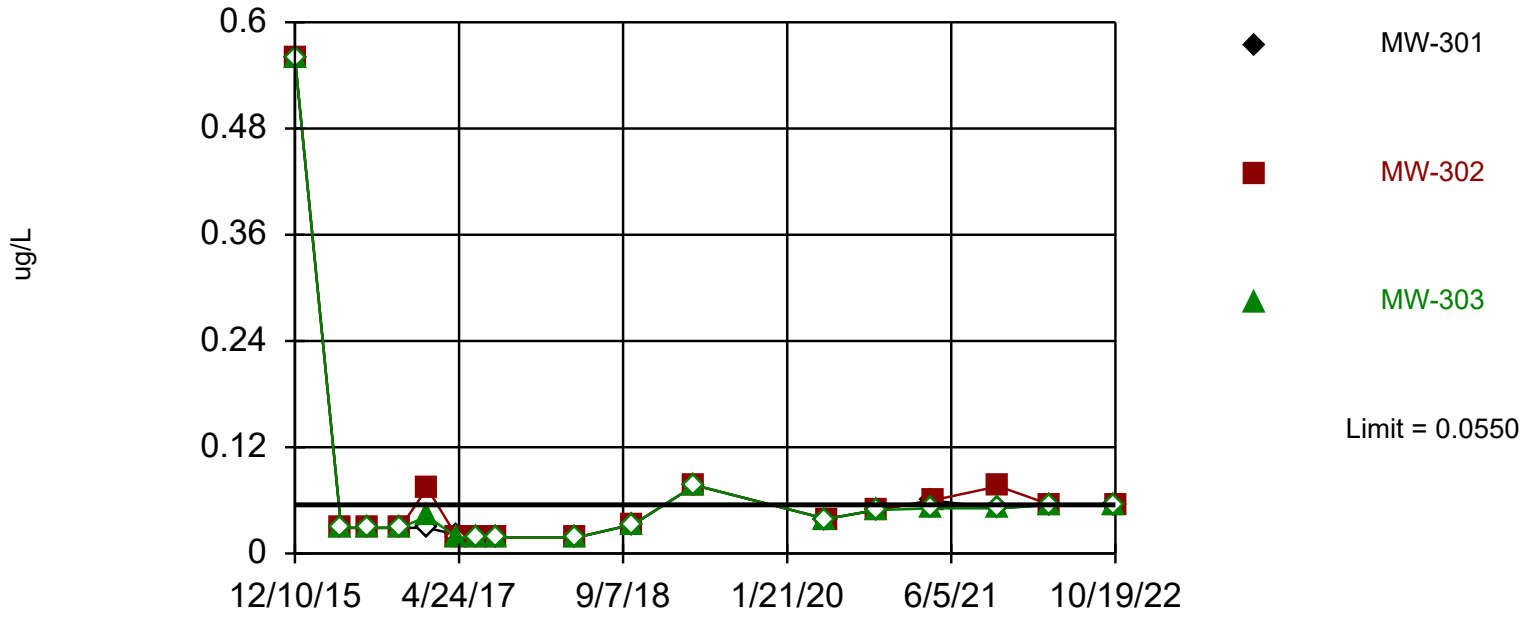
ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Within Limit

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Most recent observation is compared with limit. All background values were censored; limit is most recent reporting limit. 76.37% coverage at alpha=0.01; 83.79% coverage at alpha=0.05; 95.9% coverage at alpha=0.5. Report alpha = 0.4181.

Constituent: Cadmium Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Cadmium (ug/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-303	MW-302	MW-6 (bg)
12/10/2015	<0.56 (U)	<0.56 (U)	<0.56 (U)	<0.56 (U)
4/29/2016	<0.029 (U)	<0.029 (U)	<0.029 (U)	<0.029 (U)
7/20/2016	<0.029 (U)	<0.029 (U)	<0.029 (U)	<0.029 (U)
10/26/2016	<0.029 (U)	<0.029 (U)	<0.029 (U)	
10/27/2016				<0.029 (U)
1/17/2017	<0.029 (U)	0.042 (J)	0.074 (J)	
1/18/2017				<0.029 (U)
4/19/2017	0.021 (J)	0.018 (J)	<0.018 (U)	<0.018 (U)
6/19/2017	<0.018 (U)		<0.018 (U)	<0.018 (U)
6/20/2017		<0.018 (U)		
8/15/2017	<0.018 (U)	<0.018 (U)	<0.018 (U)	<0.018 (U)
4/16/2018	<0.018 (U)	<0.018 (U)	<0.018 (U)	
4/26/2018				<0.018 (U)
10/8/2018	<0.033 (U)	<0.033 (U)	<0.033 (U)	<0.033 (U)
4/15/2019	<0.077 (U)	<0.077 (U)	<0.077 (U)	<0.077 (U)
5/19/2020	<0.039 (U)	<0.039 (U)		
5/20/2020			<0.039 (U)	<0.039 (U)
10/19/2020	<0.049 (U)	<0.049 (U)	<0.049 (U)	
10/20/2020				<0.049 (U)
4/7/2021				<0.051 (U)
4/8/2021	0.06 (J)	<0.051 (U)		
4/9/2021			0.06 (J)	
10/26/2021	<0.051 (U)	<0.051 (U)		<0.051 (U)
10/27/2021			0.076 (J)	
4/5/2022	<0.055 (U)	<0.055 (U)	<0.055 (U)	
4/6/2022				<0.055 (U)
10/17/2022	<0.055 (U)	<0.055 (U)		
10/18/2022				<0.055 (U)
10/19/2022			<0.055 (U)	

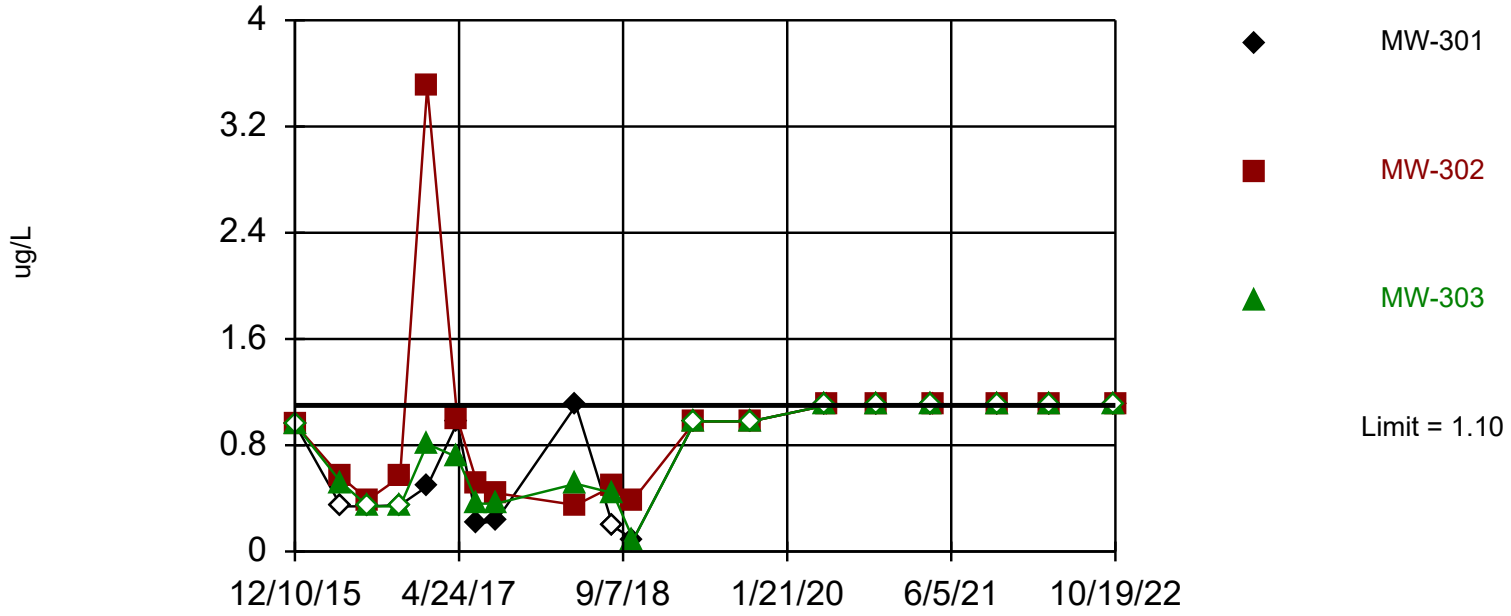
ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Within Limit

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Most recent observation is compared with limit. Limit is highest of 19 background values. 47.37% NDs. 78.32% coverage at alpha=0.01; 85.35% coverage at alpha=0.05; 96.29% coverage at alpha=0.5. Report alpha = 0.3774.

Constituent: Chromium Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Chromium (ug/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-6 (bg)	MW-302	MW-303
12/10/2015	<0.96 (U)	<0.96 (U)	<0.96 (U)	<0.96 (U)
4/29/2016	<0.34 (U)	0.82 (J)	0.56 (J)	0.52 (J)
7/20/2016	<0.34 (U)	0.81 (J)	0.39 (J)	<0.34 (U)
10/26/2016	0.35 (J)		0.56 (J)	<0.34 (U)
10/27/2016		0.81 (J)		
1/17/2017	0.49 (J)		3.5	0.81 (J)
1/18/2017		1.1		
4/19/2017	0.97 (J)	0.76 (J)	1 (J)	0.71 (J)
6/19/2017	0.21 (J)	0.68 (J)	0.51 (J)	
6/20/2017				0.36 (J)
8/15/2017	0.23 (J)	0.71 (J)	0.44 (J)	0.36 (J)
4/16/2018	1.1		0.35 (J)	0.51 (J)
4/26/2018		0.66 (J)		
8/7/2018	<0.19 (U)	0.97 (J)	0.49 (J)	0.44 (J)
10/8/2018	0.09 (J)	0.73 (J)	0.39 (J)	0.089 (J)
4/15/2019	<0.98 (U)	<0.98 (U)	<0.98 (U)	<0.98 (U)
10/2/2019	<0.98 (U)	<0.98 (U)	<0.98 (U)	<0.98 (U)
5/19/2020	<1.1 (U)			<1.1 (U)
5/20/2020		<1.1 (U)	<1.1 (U)	
10/19/2020	<1.1 (U)		<1.1 (U)	<1.1 (U)
10/20/2020		<1.1 (U)		
4/7/2021		<1.1 (U)		
4/8/2021	<1.1 (U)			<1.1 (U)
4/9/2021			<1.1 (U)	
10/26/2021	<1.1 (U)	<1.1 (U)		<1.1 (U)
10/27/2021			<1.1 (U)	
4/5/2022	<1.1 (U)		<1.1 (U)	<1.1 (U)
4/6/2022		<1.1 (U)		
10/17/2022	<1.1 (U)			<1.1 (U)
10/18/2022		<1.1 (U)		
10/19/2022			<1.1 (U)	

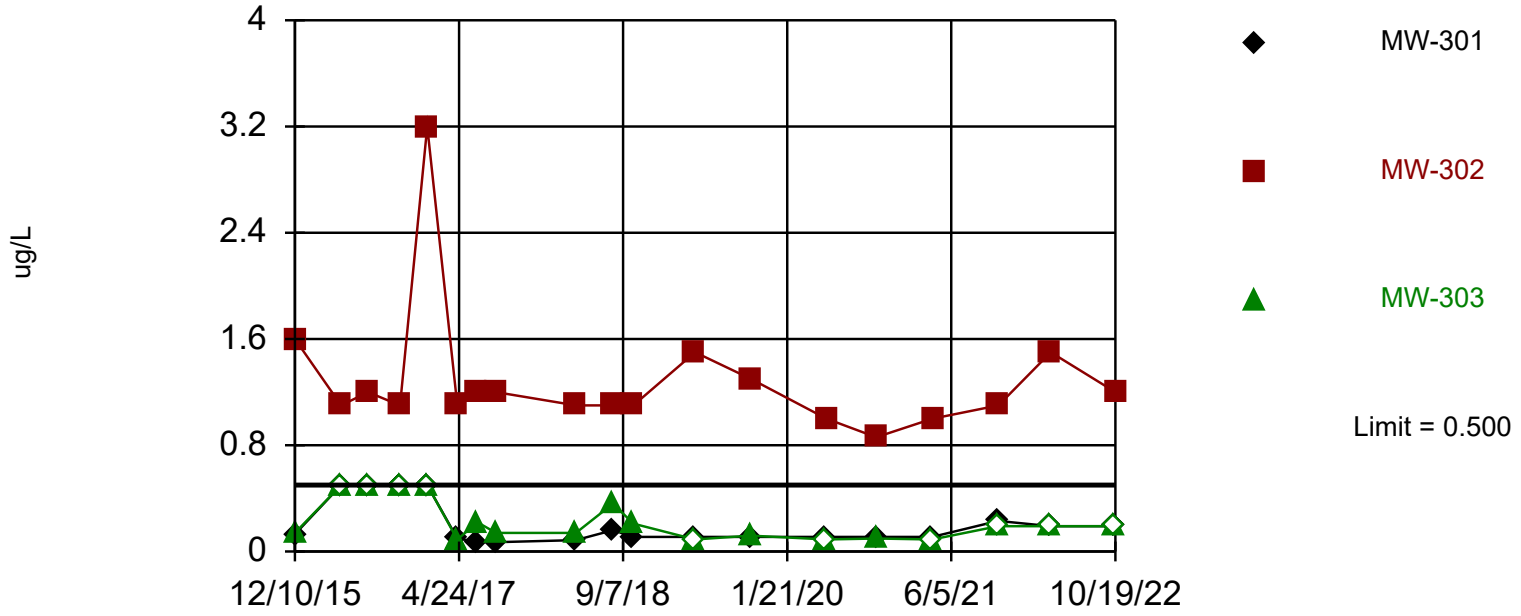
ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Exceeds Limit: MW-302

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Most recent observation is compared with limit. Limit is highest of 19 background values. 89.47% NDs. 78.32% coverage at alpha=0.01; 85.35% coverage at alpha=0.05; 96.29% coverage at alpha=0.5. Report alpha = 0.3774.

Constituent: Cobalt Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Cobalt (ug/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-6 (bg)	MW-302	MW-303
12/10/2015	0.13 (J)	<0.1 (U)	1.6	0.14 (J)
4/29/2016	<0.5 (U)	<0.5 (U)	1.1	<0.5 (U)
7/20/2016	<0.5 (U)	<0.5 (U)	1.2	<0.5 (U)
10/26/2016	<0.5 (U)		1.1	<0.5 (U)
10/27/2016		<0.5 (U)		
1/17/2017	<0.5 (U)		3.2	<0.5 (U)
1/18/2017		<0.5 (U)		
4/19/2017	0.098 (J)	0.034 (J)	1.1	0.09 (J)
6/19/2017	0.074 (J)	0.021 (J)	1.2	
6/20/2017				0.22 (J)
8/15/2017	0.07 (J)	<0.014 (U)	1.2	0.14 (J)
4/16/2018	0.086 (J)		1.1	0.14 (J)
4/26/2018		<0.014 (U)		
8/7/2018	0.16 (J)	<0.15 (U)	1.1	0.36 (J)
10/8/2018	0.11 (J)	<0.062 (U)	1.1	0.21 (J)
4/15/2019	0.11 (J)	<0.091 (U)	1.5	<0.091 (U)
10/2/2019	0.11 (J)	<0.091 (U)	1.3	0.12 (J)
5/19/2020	0.11 (J)			<0.091 (U)
5/20/2020		<0.091 (U)	1	
10/19/2020	0.11 (J)		0.86	0.098 (J)
10/20/2020		<0.091 (U)		
4/7/2021		<0.091 (U)		
4/8/2021	0.11 (J)			<0.091 (U)
4/9/2021			1	
10/26/2021	0.23 (J)	<0.19 (U)		<0.19 (U)
10/27/2021			1.1	
4/5/2022	<0.19 (U)		1.5	<0.19 (U)
4/6/2022		<0.19 (U)		
10/17/2022	<0.19 (U)			<0.19 (U)
10/18/2022		<0.19 (U)		
10/19/2022			1.2	

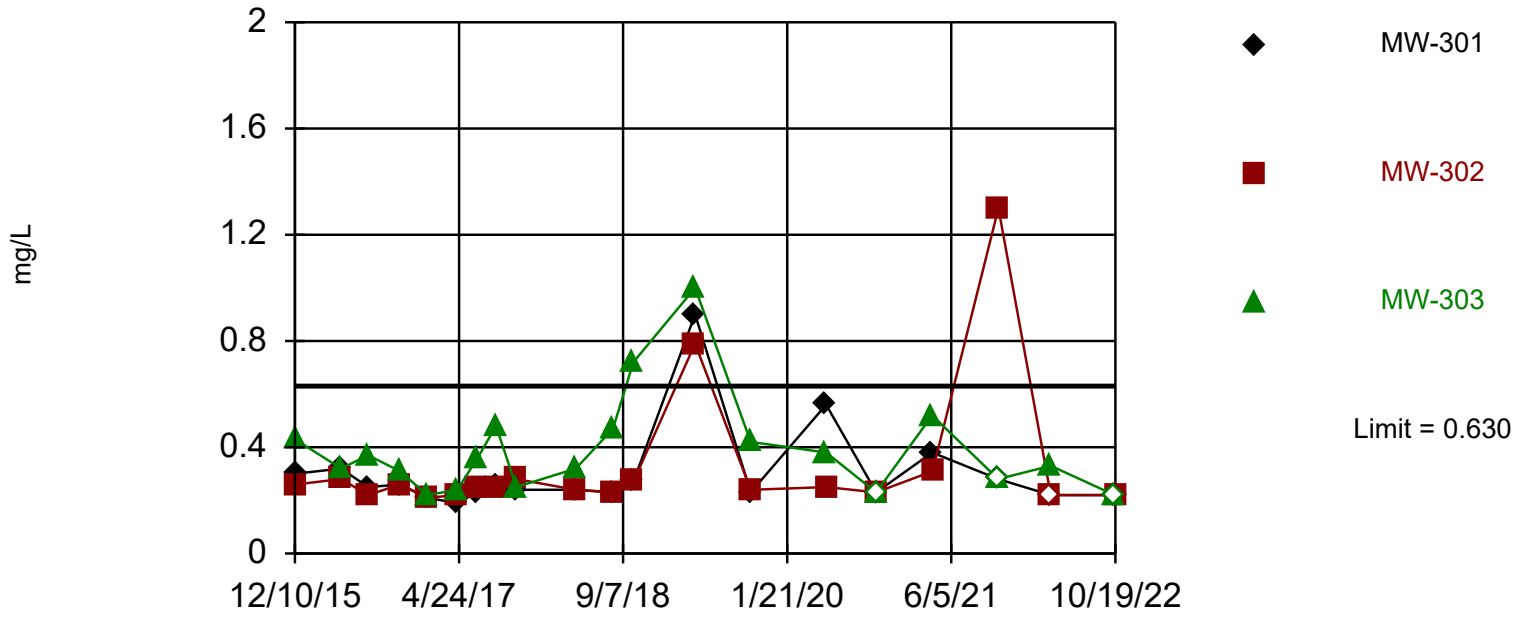
ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Within Limit

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the data required both a power transformation and Cohen's adjustment. Most recent observation is compared with limit. Limit is highest of 20 background values. 40% NDs. 79.49% coverage at alpha=0.01; 86.13% coverage at alpha=0.05; 96.68% coverage at alpha=0.5. Report alpha = 0.3585.

Constituent: Fluoride Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Fluoride (mg/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-303	MW-6 (bg)
12/10/2015	0.3	0.26	0.43	0.094 (J)
4/29/2016	0.32	0.28	0.32	0.15 (J)
7/20/2016	0.25	0.22	0.37	0.082 (J)
10/26/2016	0.26	0.26	0.31	
10/27/2016				0.12 (J)
1/17/2017	0.21	0.21	0.22	
1/18/2017				0.092 (J)
4/19/2017	0.19 (J)	0.22	0.24	<0.1 (U)
6/19/2017	0.23	0.25		0.1 (J)
6/20/2017			0.36	
8/15/2017	0.26	0.25	0.48	0.12 (J)
10/16/2017	0.24	0.28	0.25	0.14 (J)
4/16/2018	0.24	0.24	0.32	
4/26/2018				0.084 (J)
8/7/2018	0.23	0.23	0.47	0.12 (J)
10/8/2018	0.27	0.27	0.72	<0.19 (U)
4/15/2019	0.9	0.79	1	0.63
10/2/2019	0.23 (J)	0.24 (J)	0.42 (J)	<0.23 (U)
5/19/2020	0.56		0.38 (J)	
5/20/2020		0.25 (J)		<0.23 (U)
10/19/2020	<0.23 (U)	<0.23 (U)	<0.23 (U)	
10/20/2020				<0.23 (U)
4/7/2021				0.34 (J)
4/8/2021	0.38 (J)		0.52	
4/9/2021		0.31 (J)		
10/26/2021	<0.28 (U)		<0.28 (U)	<0.28 (U)
10/27/2021		1.3		
4/5/2022	<0.22 (U)	<0.22 (U)	0.33 (J)	
4/6/2022				<0.22 (U)
10/17/2022	<0.22 (U)		<0.22 (U)	
10/18/2022				<0.22 (U)
10/19/2022		<0.22 (U)		

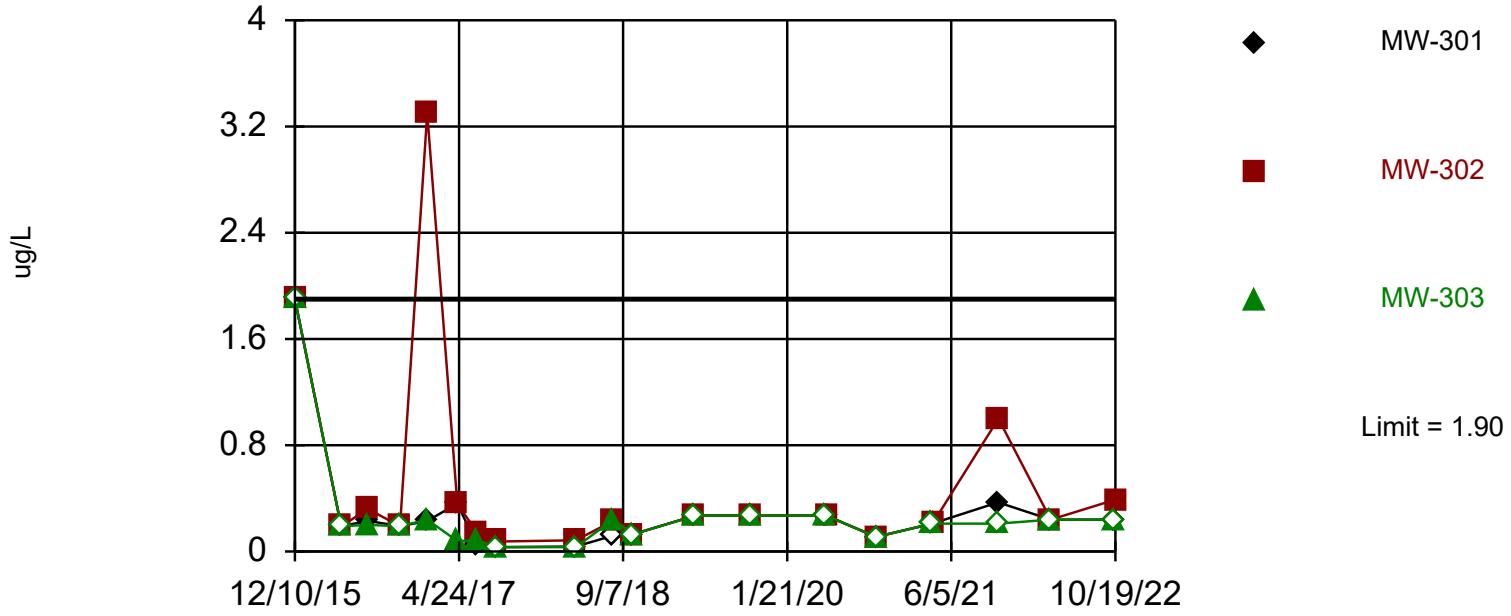
ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Within Limit

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Most recent observation is compared with limit. Limit is highest of 19 background values. 89.47% NDs. 78.32% coverage at alpha=0.01; 85.35% coverage at alpha=0.05; 96.29% coverage at alpha=0.5. Report alpha = 0.3774.

Constituent: Lead Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Lead (ug/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-6 (bg)	MW-302	MW-303
12/10/2015	<1.9 (U)	<1.9 (U)	<1.9 (U)	<1.9 (U)
4/29/2016	<0.19 (U)	<0.19 (U)	<0.19 (U)	<0.19 (U)
7/20/2016	0.23 (J)	<0.19 (U)	0.32 (J)	0.2 (J)
10/26/2016	<0.19 (U)		<0.19 (U)	<0.19 (U)
10/27/2016		<0.19 (U)		
1/17/2017	0.23 (J)		3.3	0.24 (J)
1/18/2017		<0.19 (U)		
4/19/2017	0.36 (J)	0.13 (J)	0.36 (J)	0.078 (J)
6/19/2017	0.041 (J)	<0.033 (U)	0.14 (J)	
6/20/2017				0.085 (J)
8/15/2017	<0.033 (U)	0.065 (J)	0.075 (J)	<0.033 (U)
4/16/2018	0.037 (J)		0.084 (J)	<0.033 (U)
4/26/2018		<0.033 (U)		
8/7/2018	<0.12 (U)	<0.12 (U)	0.23 (J)	0.24 (J)
10/8/2018	<0.13 (U)	<0.13 (U)	<0.13 (U)	<0.13 (U)
4/15/2019	<0.27 (U)	<0.27 (U)	<0.27 (U)	<0.27 (U)
10/2/2019	<0.27 (U)	<0.27 (U)	<0.27 (U)	<0.27 (U)
5/19/2020	<0.27 (U)			<0.27 (U)
5/20/2020		<0.27 (U)	<0.27 (U)	
10/19/2020	<0.11 (U)		<0.11 (U)	<0.11 (U)
10/20/2020		<0.11 (U)		
4/7/2021		<0.21 (U)		
4/8/2021	<0.21 (U)			<0.21 (U)
4/9/2021			<0.21 (U)	
10/26/2021	0.37 (J)	<0.21 (U)		<0.21 (U)
10/27/2021			1	
4/5/2022	<0.24 (U)		<0.24 (U)	<0.24 (U)
4/6/2022		<0.24 (U)		
10/17/2022	<0.24 (U)			<0.24 (U)
10/18/2022		<0.24 (U)		
10/19/2022			0.39 (J)	

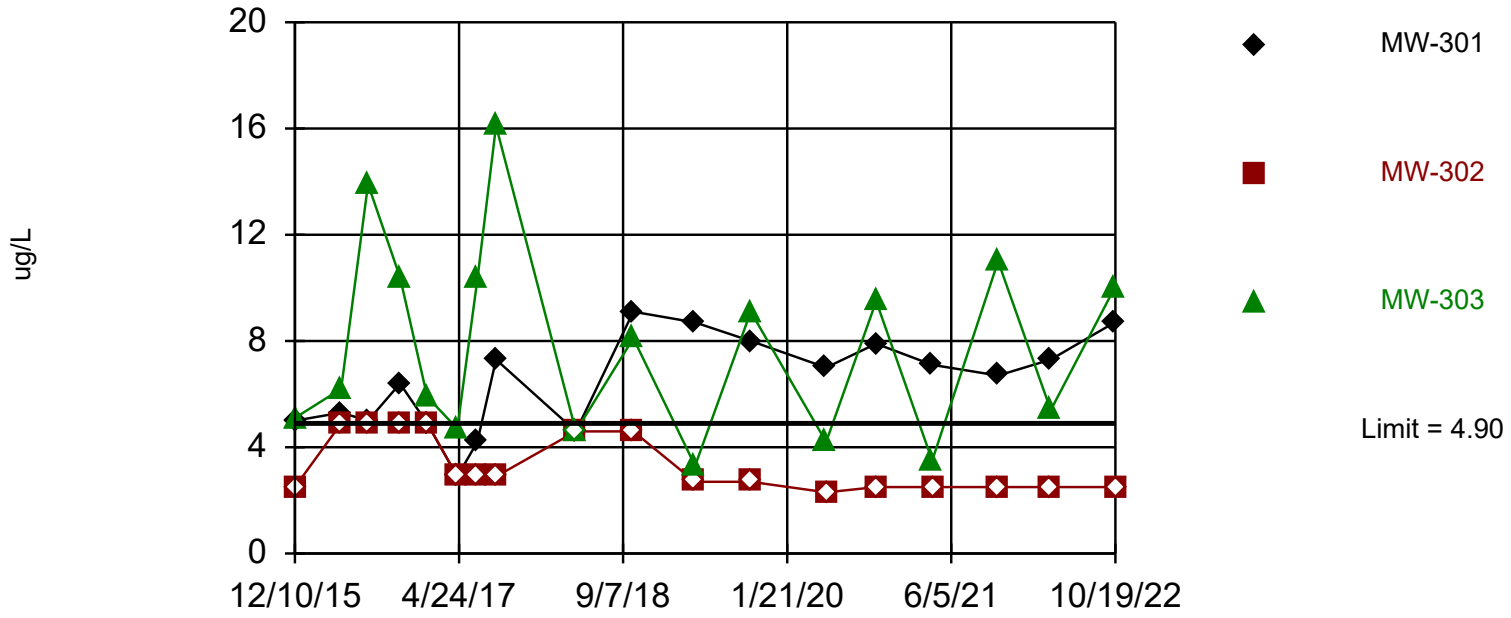
ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Exceeds Limit: MW-303

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Most recent observation is compared with limit. Limit is highest of 18 background values. 94.44% NDs. 77.54% coverage at alpha=0.01; 84.57% coverage at alpha=0.05; 96.29% coverage at alpha=0.5. Report alpha = 0.3972.

Constituent: Lithium Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Lithium (ug/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-303	MW-6 (bg)
12/10/2015	5 (J)	<2.5 (U)	5.1 (J)	<2.5 (U)
4/29/2016	5.3 (J)	<4.9 (U)	6.2 (J)	<4.9 (U)
7/20/2016	5 (J)	<4.9 (U)	13.9	<4.9 (U)
10/26/2016	6.4 (J)	<4.9 (U)	10.4	
10/27/2016				<4.9 (U)
1/17/2017	<4.9 (U)	<4.9 (U)	5.9 (J)	
1/18/2017				<4.9 (U)
4/19/2017	<2.9 (U)	<2.9 (U)	4.7 (J)	<2.9 (U)
6/19/2017	4.2 (J)	<2.9 (U)		<2.9 (U)
6/20/2017			10.4	
8/15/2017	7.3 (J)	<2.9 (U)	16.1	3 (J)
4/16/2018	<4.6 (U)	<4.6 (U)	<4.6 (U)	
4/26/2018				<4.6 (U)
10/8/2018	9.1 (J)	<4.6 (U)	8.1 (J)	<4.6 (U)
4/15/2019	8.7 (J)	<2.7 (U)	3.3 (J)	<2.7 (U)
10/2/2019	8 (J)	<2.7 (U)	9.1 (J)	<2.7 (U)
5/19/2020	7 (J)		4.2 (J)	
5/20/2020		<2.3 (U)		<2.3 (U)
10/19/2020	7.9 (J)	<2.5 (U)	9.5 (J)	
10/20/2020				<2.5 (U)
4/7/2021				<2.5 (U)
4/8/2021	7.1 (J)		3.5 (J)	
4/9/2021		<2.5 (U)		
10/26/2021	6.7 (J)		11	<2.5 (U)
10/27/2021		<2.5 (U)		
4/5/2022	7.3 (J)	<2.5 (U)	5.4 (J)	
4/6/2022				<2.5 (U)
10/17/2022	8.7 (J)		10	
10/18/2022				<2.5 (U)
10/19/2022		<2.5 (U)		

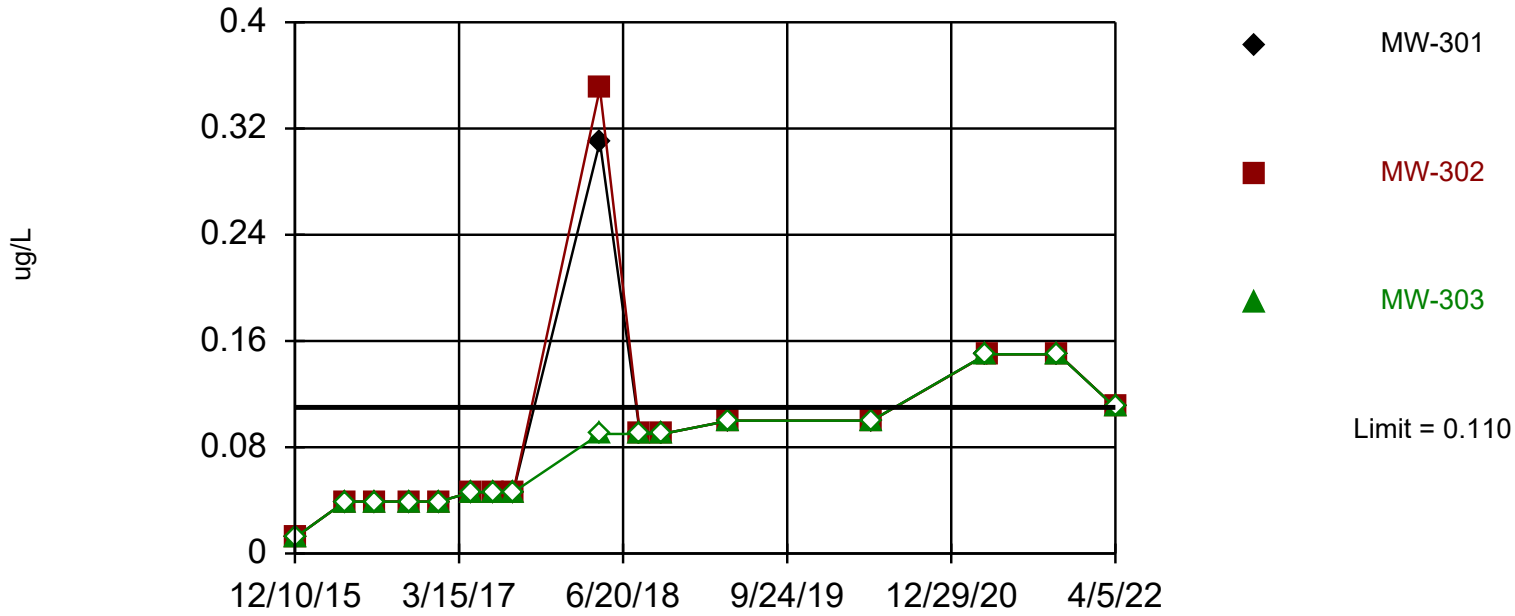
ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Within Limit

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Most recent observation is compared with limit. All background values were censored; limit is most recent reporting limit. 74.8% coverage at alpha=0.01; 83.01% coverage at alpha=0.05; 95.9% coverage at alpha=0.5. Report alpha = 0.4401.

Constituent: Mercury Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Mercury (ug/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-303	MW-302	MW-6 (bg)
12/10/2015	<0.012 (U)	<0.012 (U)	<0.012 (U)	<0.012 (U)
4/29/2016	<0.039 (U)	<0.039 (U)	<0.039 (U)	<0.039 (U)
7/20/2016	<0.039 (U)	<0.039 (U)	<0.039 (U)	<0.039 (U)
10/26/2016	<0.039 (U)	<0.039 (U)	<0.039 (U)	
10/27/2016				<0.039 (U)
1/17/2017	<0.039 (U)	<0.039 (U)	<0.039 (U)	
1/18/2017				<0.039 (U)
4/19/2017	<0.046 (U)	<0.046 (U)	<0.046 (U)	<0.046 (U)
6/19/2017	<0.046 (U)		<0.046 (U)	<0.046 (U)
6/20/2017		<0.046 (U)		
8/15/2017	<0.046 (U)	<0.046 (U)	<0.046 (U)	<0.046 (U)
4/16/2018	0.31	<0.09 (U)	0.35	
4/26/2018				<0.09 (U)
8/7/2018	<0.09 (U)	<0.09 (U)	<0.09 (U)	<0.09 (U)
10/8/2018	<0.09 (U)	<0.09 (U)	<0.09 (U)	<0.09 (U)
4/15/2019	<0.1 (U)	<0.1 (U)	<0.1 (U)	<0.1 (U)
5/19/2020	<0.1 (U)	<0.1 (U)		
5/20/2020			<0.1 (U)	<0.1 (U)
4/7/2021				<0.15 (U)
4/8/2021	<0.15 (U)	<0.15 (U)		
4/9/2021			<0.15 (U)	
10/26/2021	<0.15 (U)	<0.15 (U)		<0.15 (U)
10/27/2021			<0.15 (U)	
4/5/2022	<0.11 (U)	<0.11 (U)	<0.11 (U)	
4/6/2022				<0.11 (U)

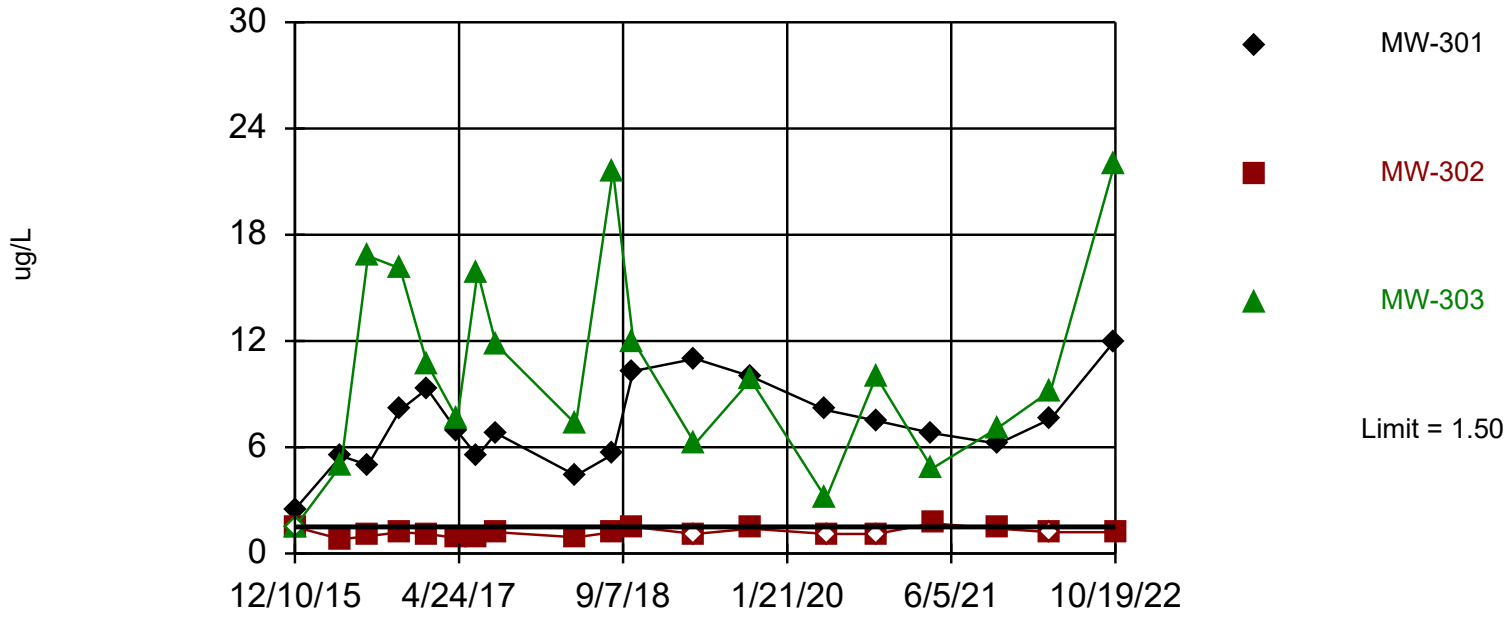
ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Exceeds Limit: MW-301, MW-303

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Most recent observation is compared with limit. Limit is highest of 19 background values. 52.63% NDs. 78.32% coverage at alpha=0.01; 85.35% coverage at alpha=0.05; 96.29% coverage at alpha=0.5. Report alpha = 0.3774.

Constituent: Molybdenum Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Molybdenum (ug/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-6 (bg)	MW-302	MW-303
12/10/2015	2.5 (J)	<1.5 (U)	<1.5 (U)	<1.5 (U)
4/29/2016	5.5	0.25 (J)	0.81 (J)	5
7/20/2016	5	0.24 (J)	0.98 (J)	16.8
10/26/2016	8.1		1.2	16.1
10/27/2016		0.31 (J)		
1/17/2017	9.3		1.1	10.7
1/18/2017		0.21 (J)		
4/19/2017	6.9	0.25 (J)	0.87 (J)	7.6
6/19/2017	5.5	0.26 (J)	0.91 (J)	
6/20/2017				15.9
8/15/2017	6.8	0.31 (J)	1.2	11.8
4/16/2018	4.4		0.91 (J)	7.3
4/26/2018		0.26 (J)		
8/7/2018	5.6	0.28 (J)	1.2	21.6
10/8/2018	10.3	<0.57 (U)	1.5	12
4/15/2019	11	<1.1 (U)	<1.1 (U)	6.2
10/2/2019	10	<1.1 (U)	1.4 (J)	9.8
5/19/2020	8.1			3.1
5/20/2020		<1.1 (U)	<1.1 (U)	
10/19/2020	7.5		<1.1 (U)	10
10/20/2020		<1.1 (U)		
4/7/2021		<1.3 (U)		
4/8/2021	6.8			4.8
4/9/2021			1.7 (J)	
10/26/2021	6.2	<1.3 (U)		7.1
10/27/2021			1.4 (J)	
4/5/2022	7.6		<1.2 (U)	9.2
4/6/2022		<1.2 (U)		
10/17/2022	12			22
10/18/2022		<1.2 (U)		
10/19/2022			1.2 (J)	

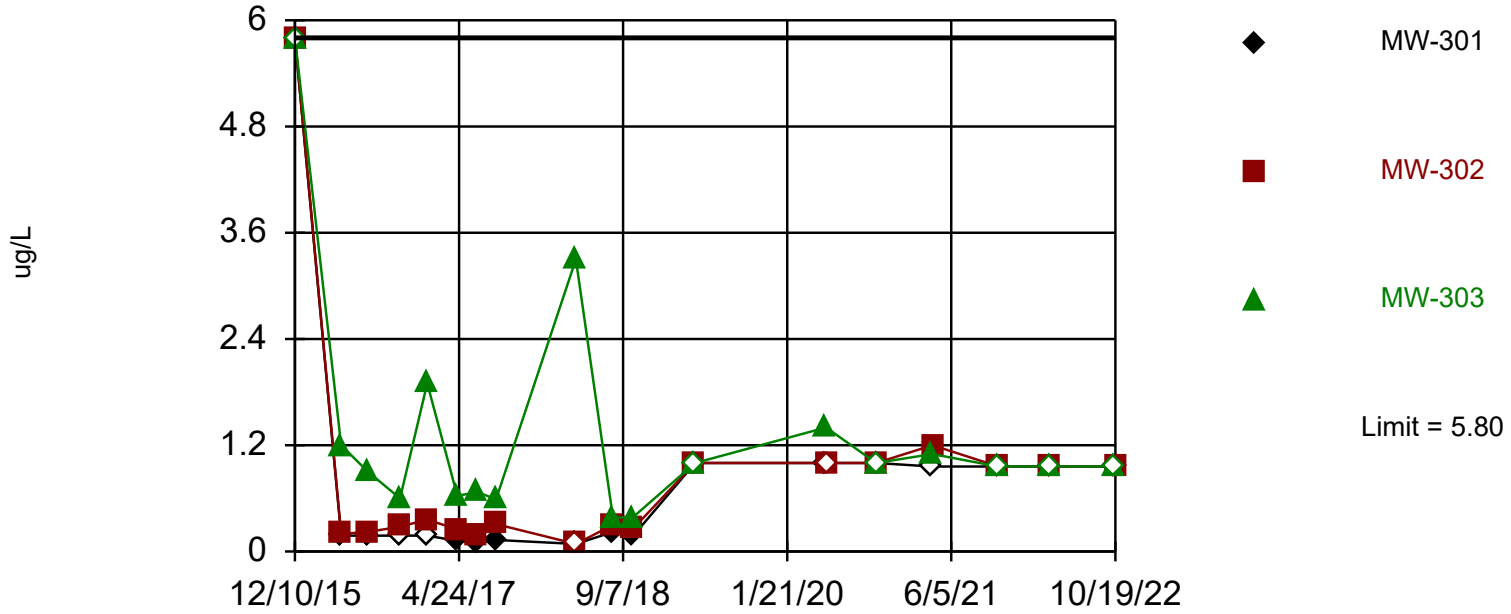
ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Within Limit

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Most recent observation is compared with limit. Limit is highest of 18 background values. 44.44% NDs. 77.54% coverage at alpha=0.01; 84.57% coverage at alpha=0.05; 96.29% coverage at alpha=0.5. Report alpha = 0.3972.

Constituent: Selenium Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Selenium (ug/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-303	MW-6 (bg)
12/10/2015	<5.8 (U)	<5.8 (U)	<5.8 (U)	<5.8 (U)
4/29/2016	<0.18 (U)	0.2 (J)	1.2	0.57 (J)
7/20/2016	<0.18 (U)	0.22 (J)	0.9 (J)	0.46 (J)
10/26/2016	<0.18 (U)	0.28 (J)	0.6 (J)	
10/27/2016				0.54 (J)
1/17/2017	<0.18 (U)	0.36 (J)	1.9	
1/18/2017				0.36 (J)
4/19/2017	0.12 (J)	0.25 (J)	0.63 (J)	0.5 (J)
6/19/2017	0.1 (J)	0.19 (J)		0.36 (J)
6/20/2017			0.67 (J)	
8/15/2017	0.13 (J)	0.31 (J)	0.59 (J)	0.52 (J)
4/16/2018	<0.086 (U)	<0.086 (U)	3.3	
4/26/2018				0.47 (J)
8/7/2018	0.22 (J)	0.3 (J)	0.38 (J)	0.5 (J)
10/8/2018	0.18 (J)	0.26 (J)	0.39 (J)	0.46 (J)
4/15/2019	<1 (U)	<1 (U)	<1 (U)	<1 (U)
5/19/2020	<1 (U)		1.4 (J)	
5/20/2020		<1 (U)		<1 (U)
10/19/2020	<1 (U)	<1 (U)	<1 (U)	
10/20/2020				<1 (U)
4/7/2021				<0.96 (U)
4/8/2021	<0.96 (U)		1.1 (J)	
4/9/2021		1.2 (J)		
10/26/2021	<0.96 (U)		<0.96 (U)	<0.96 (U)
10/27/2021		<0.96 (U)		
4/5/2022	<0.96 (U)	<0.96 (U)	<0.96 (U)	
4/6/2022				<0.96 (U)
10/17/2022	<0.96 (U)		<0.96 (U)	
10/18/2022				<0.96 (U)
10/19/2022		<0.96 (U)		

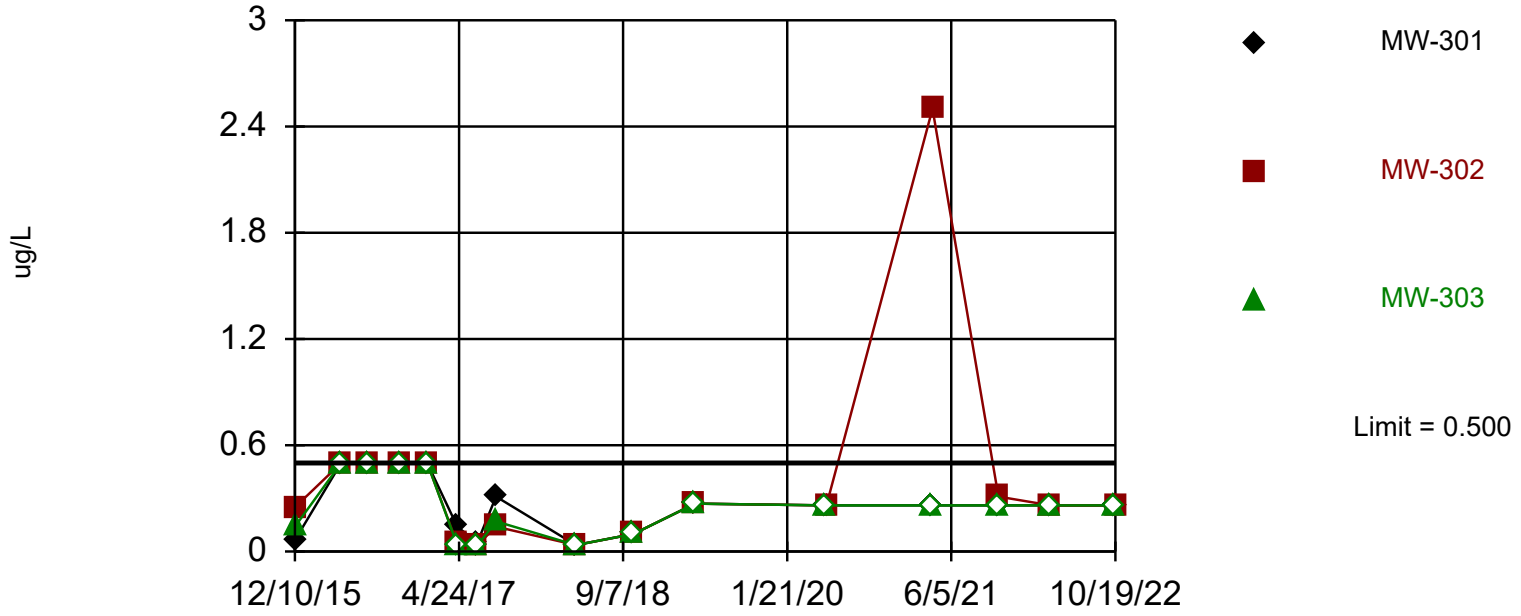
ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Within Limit

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Most recent observation is compared with limit. Limit is highest of 16 background values. 81.25% NDs. 74.8% coverage at alpha=0.01; 83.01% coverage at alpha=0.05; 95.9% coverage at alpha=0.5. Report alpha = 0.4401.

Constituent: Thallium Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Thallium (ug/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

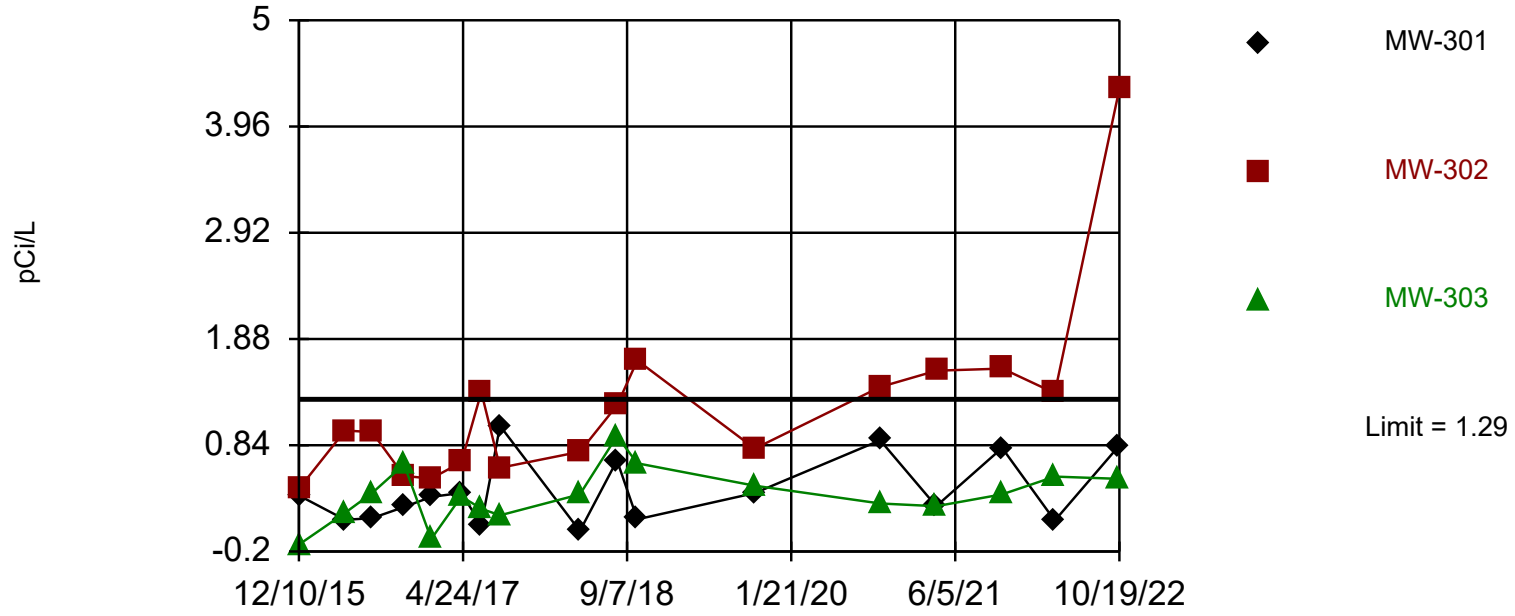
	MW-301	MW-6 (bg)	MW-303	MW-302
12/10/2015	0.064 (J)	0.18 (J)	0.14 (J)	0.25 (J)
4/29/2016	<0.5 (U)	<0.5 (U)	<0.5 (U)	<0.5 (U)
7/20/2016	<0.5 (U)	<0.5 (U)	<0.5 (U)	<0.5 (U)
10/26/2016	<0.5 (U)		<0.5 (U)	<0.5 (U)
10/27/2016		<0.5 (U)		
1/17/2017	<0.5 (U)		<0.5 (U)	<0.5 (U)
1/18/2017		<0.5 (U)		
4/19/2017	0.14 (J)	0.11 (J)	<0.036 (U)	0.042 (J)
6/19/2017	0.05 (J)	<0.036 (U)		<0.036 (U)
6/20/2017			<0.036 (U)	
8/15/2017	0.31 (J)	0.29 (J)	0.17 (J)	0.14 (J)
4/16/2018	<0.036 (U)		<0.036 (U)	<0.036 (U)
4/26/2018		<0.036 (U)		
10/8/2018	<0.099 (U)	<0.099 (U)	<0.099 (U)	<0.099 (U)
4/15/2019	<0.27 (U)	<0.27 (U)	<0.27 (U)	<0.27 (U)
5/19/2020	<0.26 (U)		<0.26 (U)	
5/20/2020		<0.26 (U)		<0.26 (U)
4/7/2021		<0.26 (U)		
4/8/2021	<0.26 (U)		<0.26 (U)	
4/9/2021				2.5 (B)
10/26/2021	<0.26 (U)	<0.26 (U)	<0.26 (U)	
10/27/2021				0.31 (J)
4/5/2022	<0.26 (U)		<0.26 (U)	<0.26 (U)
4/6/2022		<0.26 (U)		
10/17/2022	<0.26 (U)		<0.26 (U)	
10/18/2022		<0.26 (U)		
10/19/2022				<0.26 (U)

ND substitution: RL or RL/2 if <15% NDs.

Exceeds Limit: MW-302

Tolerance Limit

Interwell Parametric



95% coverage. Most recent observation is compared with limit. Background Data Summary: Mean=0.3934, Std. Dev.=0.3615, n=17. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9262, critical = 0.851. Report alpha = 0.05.

Constituent: Total Radium Analysis Run 1/1/2023 4:56 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Tolerance Limit

Constituent: Total Radium (pCi/L) Analysis Run 1/1/2023 5:05 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-303	MW-302	MW-6 (bg)
12/10/2015	0.349	-0.132	0.415	0.599
4/29/2016	0.111	0.18	0.985	0.232
7/20/2016	0.126	0.372	0.969	0.0668
10/26/2016	0.236	0.653	0.539	
10/27/2016				0.126
1/17/2017	0.334	-0.077	0.514	
1/18/2017				0
4/19/2017	0.374	0.339	0.672	-0.07
6/19/2017	0.0591		1.36	0.457
6/20/2017		0.217		
8/15/2017	1.03	0.155	0.619	0.633
4/16/2018	0	0.359	0.776	0
8/7/2018	0.692	0.929	1.23	0.547
10/8/2018	0.115	0.664	1.67	0.705
10/2/2019	0.372	0.444	0.807	0.237
10/19/2020	0.889	0.27	1.41	
10/20/2020				0.644
4/7/2021				0.359
4/8/2021	0.244	0.243		
4/9/2021			1.57	
10/26/2021	0.814	0.359		0.779
10/27/2021			1.59	
4/5/2022	0.103	0.533	1.35	
4/6/2022				0.0823
10/17/2022	0.83	0.512		
10/18/2022				1.29
10/19/2022			4.33	

E3 – LCL Evaluation – April 2023

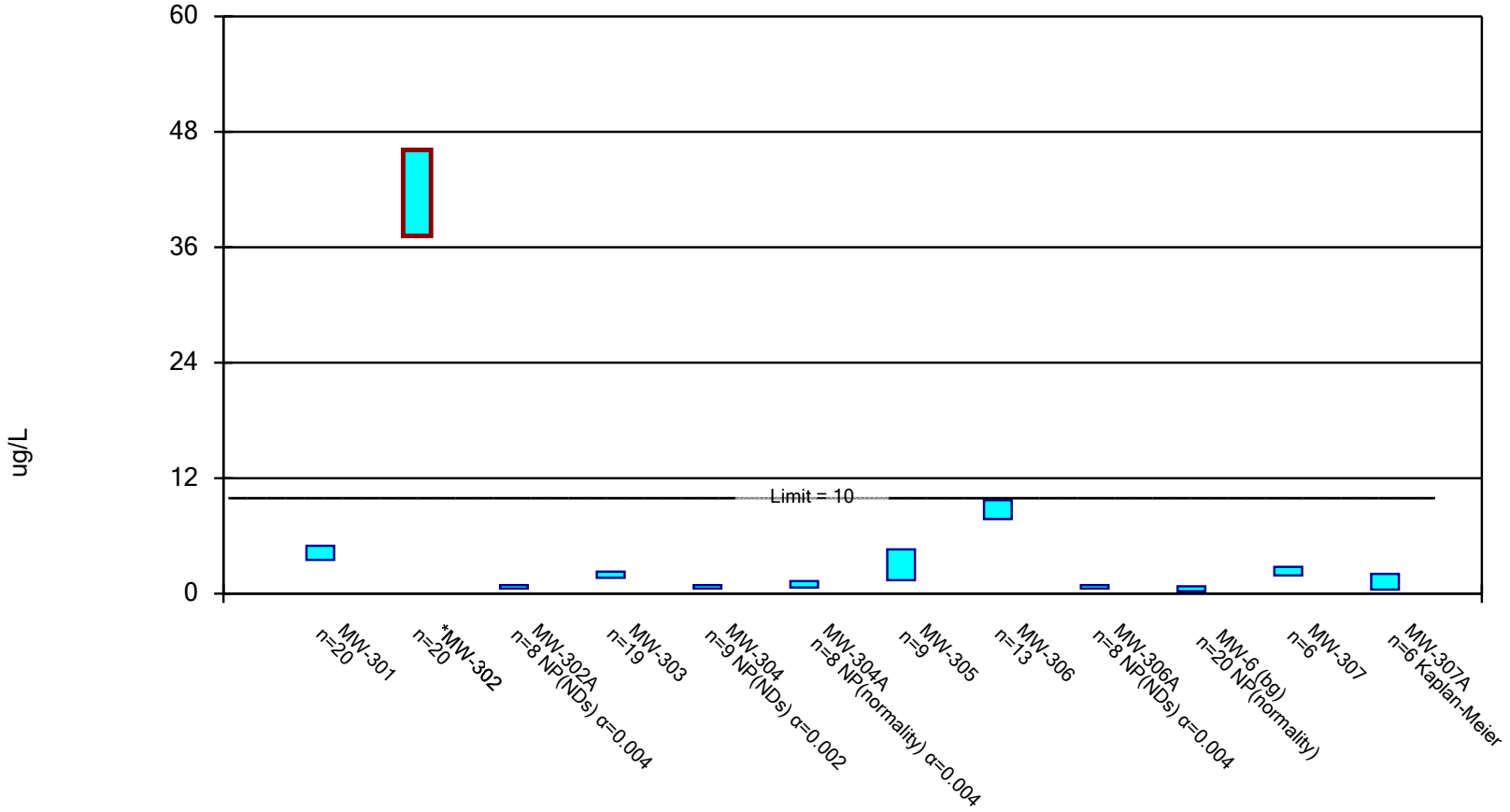
Confidence Interval

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev Printed 6/23/2023, 1:55 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (ug/L)	MW-301	4.97	3.505	10	No	20	5	None	No	0.01	Param.
Arsenic (ug/L)	**MW-302**	**46.11**	**37.19**	**10**	**Yes**	**20**	**0**	**None**	**No**	**0.01**	**Param.**
Arsenic (ug/L)	MW-302A	0.88	0.53	10	No	8	100	None	No	0.004	NP (NDs)
Arsenic (ug/L)	MW-303	2.285	1.636	10	No	19	5.263	None	No	0.01	Param.
Arsenic (ug/L)	MW-304	0.88	0.53	10	No	9	100	None	No	0.002	NP (NDs)
Arsenic (ug/L)	MW-304A	1.3	0.63	10	No	8	62.5	None	No	0.004	NP (normality)
Arsenic (ug/L)	MW-305	4.594	1.388	10	No	9	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-306	9.701	7.745	10	No	13	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-306A	0.88	0.53	10	No	8	100	None	No	0.004	NP (NDs)
Arsenic (ug/L)	MW-6 (bg)	0.75	0.24	10	No	20	50	None	No	0.01	NP (normality)
Arsenic (ug/L)	MW-307	2.782	1.885	10	No	6	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-307A	2.04	0.4131	10	No	6	16.67	Kapla...	No	0.01	Param.

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 6/23/2023 1:53 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Confidence Interval

Constituent: Arsenic Analysis Run 6/23/2023 1:55 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
12/10/2015	<4.5 (U)	33.9		<4.5 (U)					
4/29/2016	2.3	30.4		1.4					
7/20/2016	2.8	41		1.4					
10/26/2016	3.5	50.2		1.8					
10/27/2016									
1/17/2017	3.8	45		1.8					
1/18/2017									
4/19/2017	3.1	31.7		2.4					
6/19/2017	3	36.7							
6/20/2017				2.5					
8/15/2017	3.8	47.3		2.5					
4/16/2018	3.9	30.8		1.2					
4/26/2018									
8/7/2018	4.4	47.6		2.3					
10/8/2018	5.4	50.4		2.3					
4/15/2019	5.4	37		1.4 (J)					
6/20/2019					<0.75 (U)		2.2	8.6	
10/2/2019	5.6	53		2.5	<0.75 (U)		3.4	12	
12/5/2019								9.3	
2/5/2020								9.4	
5/19/2020	3.8			1.4 (J)			3.6	8.5	<0.88 (U)
5/20/2020		33	<0.88 (U)		<0.88 (U)	1.3 (J)			
7/6/2020			<0.88 (U)			<0.88 (U)			<0.88 (U)
10/19/2020	6	48	<0.88 (U)	3.2	<0.88 (U)	<0.88 (U)			
10/20/2020							5.6	10	<0.88 (U)
2/23/2021								9	
4/7/2021									
4/8/2021	5			1.5 (J)					
4/9/2021		33	<0.75 (U)		<0.75 (U)	0.78 (J)	1.7 (J)	8	<0.75 (U)
7/12/2021								8.2	
8/13/2021									
10/26/2021	7.1			2.2	<0.75 (U)	<0.75 (U)			
10/27/2021		51	<0.75 (U)				3.9	8.6	<0.75 (U)
4/4/2022							0.89 (J)	7.7	<0.75 (U)
4/5/2022	4.9	40	<0.75 (U)	1.3 (J)	<0.75 (U)	<0.75 (U)			
4/6/2022									
10/17/2022	5		<0.75 (U)	1.9 (J)	<0.75 (U)	<0.75 (U)			
10/18/2022							4.7		
10/19/2022		51						7.1	<0.75 (U)
4/10/2023	3.7				<0.53 (U)	0.63 (J)			
4/11/2023		42	<0.53 (U)				0.93 (J)	7	<0.53 (U)
Mean	4.238	41.65	0.7712	1.961	0.7544	0.84	2.991	8.723	0.7712
Std. Dev.	1.29	7.863	0.1168	0.5534	0.1013	0.2024	1.66	1.315	0.1168
Upper Lim.	4.97	46.11	0.88	2.285	0.88	1.3	4.594	9.701	0.88
Lower Lim.	3.505	37.19	0.53	1.636	0.53	0.63	1.388	7.745	0.53

ND substitution: RL or RL/2 if <15% NDs.

Confidence Interval

Constituent: Arsenic Analysis Run 6/23/2023 1:55 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)	MW-307	MW-307A
12/10/2015	<4.5 (U)		
4/29/2016	0.28 (J)		
7/20/2016	0.26 (J)		
10/26/2016			
10/27/2016	0.19 (J)		
1/17/2017			
1/18/2017	0.23 (J)		
4/19/2017	0.28 (J)		
6/19/2017	0.18 (J)		
6/20/2017			
8/15/2017	0.28 (J)		
4/16/2018			
4/26/2018	0.23 (J)		
8/7/2018	0.26 (J)		
10/8/2018	0.24 (J)		
4/15/2019	<0.75 (U)		
6/20/2019			
10/2/2019	<0.75 (U)		
12/5/2019			
2/5/2020			
5/19/2020			
5/20/2020	<0.88 (U)		
7/6/2020			
10/19/2020			
10/20/2020	<0.88 (U)		
2/23/2021			
4/7/2021	<0.75 (U)		
4/8/2021			
4/9/2021			
7/12/2021		2.1	<0.75 (U)
8/13/2021		2.4	0.76 (J)
10/26/2021	<0.75 (U)		
10/27/2021		2.5	1.3 (J)
4/4/2022			
4/5/2022		1.8 (J)	2.1
4/6/2022	<0.75 (U)		
10/17/2022			
10/18/2022	<0.75 (U)	2.7	1.9 (J)
10/19/2022			
4/10/2023		2.5	0.65 (J)
4/11/2023	<0.53 (U)		
Mean	0.686	2.333	1.243
Std. Dev.	0.936	0.3266	0.632
Upper Lim.	0.75	2.782	2.04
Lower Lim.	0.24	1.885	0.4131

ND substitution: RL or RL/2 if <15% NDs.