

January 30, 2026

Subject:

2025 Annual Groundwater Monitoring and Corrective Action Report
JH Cambell Power Plant
Pond A

Enclosures:

Document	Date
CCR Annual Groundwater Report Requirements: § 257.90(e) Checklist for the JH Campbell Pond A CCR Unit	January 30, 2026
2025 Annual Groundwater Monitoring and Corrective Action Report, JH Campbell Power Plant Pond A CCR Unit	January 30, 2026

The attached document(s) are prepared in conformance with:

Document	Date
§257.90(e) of 40 CFR Part 257, Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments, under Subpart D of the Resource Conservation and Recovery Act (RCRA)	April 17, 2015

CCR Annual Groundwater Report Requirements: § 257.90(e)
Checklist for the JH Campbell Pond A CCR Unit
2025 Annual Report

Requirement	Reference
At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:	
(1) 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;	Figure 2 ⁽¹⁾
(2) 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;	Section 2.1 ⁽¹⁾ Note: No monitoring wells were installed or decommissioned during 2025.
(3) 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;	Section 2.2 ⁽¹⁾ , Tables 3 and 4 ⁽¹⁾
(4) 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); and	Section 1.1 ⁽¹⁾ Note: CCR unit remains in Assessment Monitoring and Corrective Measures
(5) Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.	Section 2.0 ⁽¹⁾ , Section 3.0 ⁽¹⁾ , Section 4.0 ⁽¹⁾
(6) 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. At a minimum, the summary must specify all of the following:	
(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;	Section 1.0 ⁽¹⁾
(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;	Section 1.0 ⁽¹⁾
(iii) If it was determined that there was a statistically significant increase 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	Section 1.1 ⁽¹⁾
(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.	Section 1.1 ⁽¹⁾
(iv) If it was determined that there was a statistically significant level above the groundwater protection standard 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;	Section 1.1 ⁽¹⁾ , Section 4.0 ⁽¹⁾
(B) Provide the date when the assessment of corrective measures was initiated for the CCR unit;	Section 1.1 ⁽¹⁾
(C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and	Not Applicable; Final remedy selection in progress
(D) Provide the date when the assessment of corrective measures was completed for the CCR unit.	Section 4.2 ⁽¹⁾
(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	Section 4.3 ⁽¹⁾ Note: Final remedy selection in progress
(vi) Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.	Not Applicable; Final remedy selection in progress

Notes:

(1) 2025 Annual Groundwater Monitoring and Corrective Action Report JH Campbell Power Plant Pond A CCR Unit. TRC. January 30, 2026.



2025 Annual Groundwater Monitoring and Corrective Action Report

**JH Campbell Power Plant
Pond A CCR Unit**

West Olive, Michigan

January 2026

Prepared For:

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Executive Summary

On behalf of Consumers Energy, TRC has prepared this report for the JH Campbell Pond A Coal Combustion Residual (CCR) unit to cover the period of January 1, 2025 to December 31, 2025. Pond A was in assessment monitoring at the beginning and at the end of the period covered by this report. Data that have been collected and evaluated in 2025 are presented in this report.

Consumers Energy first reported the potential for statistically significant increases (SSIs) for Appendix III constituents in the January 2018 *Annual Groundwater Monitoring Report, JH Campbell Power Plant, Pond A CCR Unit*. The statistical evaluation of the Appendix III indicator parameters confirmed SSIs over background for boron and sulfate.

On April 25, 2018, Consumers Energy entered assessment monitoring upon determining that an Alternate Source Demonstration for the Appendix III constituents was not successful. After subsequent sampling for Appendix IV constituents, Consumers Energy provided notification in the *Notification of Appendix IV Constituent Exceeding Groundwater Protection Standard per §257.95(g)* that arsenic was present at statistically significant levels above the federal groundwater protection standard (GWPS) established at 10 ug/L in one out of six downgradient monitoring wells at Pond A.

The *Assessment of Corrective Measures (ACM)* was initiated on April 14, 2019, and was certified and submitted to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) on September 11, 2019, in accordance with the schedule in §257.96. The ACM documents that the groundwater nature and extent has been defined, as required in §257.95(g)(1). Although arsenic concentrations exceed the GWPS in on-site groundwater, the property containing the site is owned and operated by Consumers Energy and on-site groundwater is not used for drinking water. Per §257.96(b), Consumers Energy is continuing to monitor groundwater in accordance with the assessment monitoring program as specified in §257.95. Overall, the assessment monitoring statistical evaluations confirm that arsenic is the only Appendix IV constituent present at statistically significant levels above the federal GWPS. Groundwater monitoring downgradient from Pond A further demonstrates that there are currently no adverse effects on human health or the environment from either surface water or groundwater due to the CCR management at Pond A.

Remedy selection for Pond A, prescribed by the CCR Rule, is being undertaken in coordination with the EGLE Consent Agreement WMRPD No. 115-01-2018, which was executed on December 28, 2018. As documented in the *Pond A Construction Documentation and Certification Report*, Pond A was closed with final cover in place in the summer of 2019.

The general decrease in arsenic concentrations suggests that the pond closure has an observable impact on groundwater quality. Changing concentrations indicate that conditions are establishing a new equilibrium following source removal and that an alternate source is impacting groundwater quality in the Pond A well network. The groundwater management remedy for Pond A will be selected as soon as feasible to, at a minimum, meet the federal standards of §257.97(b) of the CCR Rule. Consumers Energy will continue executing the self-



implementing groundwater compliance schedule in conformance with §257.90 - §257.98, which includes semiannual assessment monitoring in accordance with §257.95 to monitor site groundwater conditions and inform the remedy selection. The next semiannual assessment monitoring events are scheduled to occur in the second and fourth calendar quarters of 2026.

1.0 Introduction

On April 17, 2015, the United States Environmental Protection Agency (USEPA) published the final rule for the regulation and management of Coal Combustion Residuals (CCR) under the Resource Conservation and Recovery Act (RCRA) (the CCR Rule) (USEPA, April 2015 as amended). Standards for groundwater monitoring and corrective action codified in the CCR Rule (40 CFR 257.90 – 257.98), apply to the Consumers Energy Company (Consumers Energy) Pond A CCR Unit at the JH Campbell Power Plant Site (Pond A). Pursuant to the CCR Rule, no later than January 31, 2018, and annually thereafter, the owner or operator of a CCR unit must prepare an annual groundwater monitoring and corrective action report for the CCR unit documenting the status of groundwater monitoring and corrective action for the preceding year in accordance with §257.90(e).

On behalf of Consumers Energy, TRC has prepared this Annual Groundwater Monitoring Report for Pond A to cover the period of January 1, 2025 to December 31, 2025. Pond A was in assessment monitoring at the beginning and at the end of the period covered by this report. Data that have been collected and evaluated in 2025 under §257.90 - §257.98 are presented in this report.

1.1 Program Summary

Consumers Energy first reported the potential for statistically significant increases (SSIs) for Appendix III constituents in the *Annual Groundwater Monitoring Report, JH Campbell Power Plant, Pond A CCR Unit* (TRC, January 2018). The statistical evaluation of the Appendix III indicator parameters confirmed SSIs over background as follows:

- Boron at JHC-MW-15006, JHC-MW-15007, JHC-MW-15008, JHC-MW-15009, JHC-MW-15010, and JHC-MW-15011; and
- Sulfate at JHC-MW-15006, JHC-MW-15007, JHC-MW-15008, JHC-MW-15009, JHC-MW-15010, and JHC-MW-15011.

As discussed in the *2018 Annual Groundwater Monitoring Report for the JH Campbell Power Plant Pond A CCR Unit* (2018 Annual Report) (TRC, January 2019), Consumers Energy initiated an Assessment Monitoring Program for Pond A pursuant to §257.95 of the CCR Rule on April 25, 2018 upon determining that an Alternate Source Demonstration for the Appendix III constituents was not successful. After subsequent sampling for Appendix IV constituents, Consumers Energy provided notification in the *Notification of Appendix IV Constituent Exceeding Groundwater Protection Standard per §257.95(g)* (Consumers Energy, January 2019) that arsenic was present at statistically significant levels above the federal groundwater protection standard (GWPS) established at 10 ug/L in one out of the six downgradient monitoring wells at Pond A as follows:

- Arsenic at JHC-MW-15011.

The CCR Rule 40 CFR §257.96(a) requires that an owner or operator initiate an assessment of corrective measures to prevent further release, to remediate any releases, and to restore impacted areas to original conditions if any Appendix IV constituent has been detected at a

statistically significant level exceeding a GWPS. The *Assessment of Corrective Measures* (ACM) (TRC, September 2019) was initiated on April 14, 2019, and was certified and submitted on September 11, 2019, in accordance with the schedule in §257.96.

The ACM documents that the groundwater nature and extent has been defined, as required in §257.95(g)(1), based on the site-specific hydrogeology and data collected from existing monitoring wells. In addition, Pond A was closed with final cover in place in the summer of 2019.

The groundwater management remedy for Pond A will be selected as soon as feasible to, at a minimum, meet the federal standards of §257.97(b) of the CCR Rule. Consumers Energy will continue executing the self-implementing groundwater compliance schedule in conformance with §257.90 - §257.98, which includes semiannual assessment monitoring in accordance with §257.95. In addition to the semiannual assessment monitoring performed in accordance with §257.95, Consumers Energy is also conducting quarterly monitoring in accordance with the *Pond A Hydrogeological Monitoring Plan, JH Campbell Power Plant, West Olive, Michigan* (Pond A HMP) (TRC, March 2019; Revised July 2019), which includes the *Pond A Assessment Monitoring Plan* (Pond A AMP). Quarterly monitoring results are reported under a separate cover in accordance with the requirements of the Michigan Natural Resources and Environmental Protection Act, also known as Part 115 of PA 451 of 1994, as amended (a.k.a., Michigan Part 115 Solid Waste Management) and the Pond A HMP. This report covers the semiannual assessment monitoring performed in accordance with §257.95.

1.2 Site Overview

The JH Campbell Power Plant is a coal fired power generation facility located in West Olive, Michigan, on the eastern shore of Lake Michigan. It is bordered by the Pigeon River on the south, 156th Avenue on the east, and Croswell Street to the north with Lakeshore Drive bisecting the site from north to south. The power generating plant consists of three coal fired electric generating units located on the western side of the site and the CCR disposal area is on the east side of the site, east of Lakeshore Drive. Figure 1 is a site location map showing the facility and the surrounding area.

Currently, there are no active CCR surface impoundments at the JH Campbell solid waste disposal facility. The CCR surface impoundments located within the former wet ash pond area are Pond 1-2 North and Pond 1-2 South Bottom Ash Ponds (collectively Ponds 1-2), Pond 3 North and Pond 3 South Bottom Ash Pond (collectively Pond 3), and Pond A. The solid waste disposal area also contains the closed ponds B-K, which were closed prior to the issuance of the 2015 CCR Rule. Site features are shown on Figure 2.

The CCR surface impoundments in the wet ash pond areas were decommissioned starting in 2017 and replaced with concrete bottom ash treatment tanks. Dry ash from all of the generating units is stored in silos until it is placed into the Dry Ash Landfill or is sold and shipped off site. This report focuses on the Pond A CCR unit.

1.3 Geology/Hydrogeology

Groundwater is typically encountered at elevations ranging from 604 feet near the background wells (located to the north/northwest of the Dry Ash Landfill) to 590 feet along the southeast corner of the Dry Ash Landfill and south of the former Ponds 1-2 and Pond A CCR surface impoundments and generally flows to the south-southeast toward the Pigeon River. The subsurface materials encountered at the JH Campbell site generally consist of approximately 40 to 60 feet of poorly graded, fine-grained lacustrine sand. A laterally extensive clay-rich till is generally encountered within approximately 40 to 60 feet below ground surface (ft bgs) across the site that according to deep drilling logs conducted at the JH Campbell Power Plant (just west of the CCR units) is on the order of 80 feet thick and extends to the top of shale bedrock approximately 140 ft bgs.

2.0 Groundwater Monitoring

2.1 Monitoring Well Network

In accordance with 40 CFR 257.91, Consumers Energy established a groundwater monitoring system for Pond A, which currently consists of 11 monitoring wells (6 background monitoring wells and 5 downgradient monitoring wells) that are screened in the uppermost aquifer. The monitoring well locations are shown on Figure 2.

Six monitoring wells located north-northwest of the Dry Ash Landfill provide data on background groundwater quality that has not been affected by the CCR units (JHC-MW-15023 through JHCMW-15028). Background groundwater quality data from these six background wells are additionally used for the CCR groundwater monitoring program at three other JH Campbell CCR units.

As documented in the *2021 Annual Groundwater Monitoring and Corrective Action Report for the JH Campbell Power Plant Pond A CCR Unit (2021 Annual Report)* (TRC, January 2022), the groundwater flow direction changed significantly following permanent discontinuation of hydraulic loading to Pond A in June 2018 and completion of the final cover installation in 2019 such that groundwater mounding is no longer observed around Pond A and groundwater has equilibrated to a lower static water elevation. As a result, replacement monitoring wells JHC-MW-15007R, JHC-MW-15009R, and JHC-MW-15011R were installed and monitoring wells JHC-MW-15007, JHC-MW-15009, JHC-MW-15010, and JHC-MW-15011 were decommissioned in July 2021. The groundwater monitoring network certification was included in the 2021 Annual Report. The Pond A monitoring downgradient well network currently includes five downgradient wells (JHC-MW-15006, JHC-MW-15007R, JHC-MW-15008R, JHC-MW-15009R, and JHC-MW-15011R) located south and southeast of Pond A.

No changes were made to the Pond A monitoring well network in 2025.

As shown on Figure 2, monitoring wells JHC-MW-15029 and JHC-MW-15030 are used for water level measurements only. Static water level data are collected at additional wells throughout the JH Campbell CCR units and used to construct a site-wide groundwater contour map.

2.2 Semiannual Groundwater Monitoring

Per §257.95, all wells in the CCR unit monitoring program must be sampled at least semiannually. One semiannual event must include analysis for all constituents from Appendix III and Appendix IV and the other semiannual event may include, at a minimum, analysis for all constituents in Appendix III and those constituents in Appendix IV of the CCR Rule that were detected during prior sampling¹. In addition to the Appendix III and IV constituents, field parameters including dissolved oxygen, oxidation reduction potential, specific conductivity,

¹ Although a reduced analyte list may be used for the second semiannual assessment monitoring event, Consumers Energy has elected to monitor for all Appendix III and Appendix IV constituents in both semiannual events.

temperature, and turbidity were collected at each well. Samples were collected and analyzed in accordance with the *Sample and Analysis Plan* for JH Campbell Power Plan Pond A (SAP) (TRC, January 2021).

2.2.1 Data Summary

The first semiannual groundwater assessment monitoring event for 2025 was performed on April 14 through 16, 2025 and the second semiannual groundwater assessment monitoring event for 2025 was performed on October 7 through 9, 2025. Samples were collected by Consumers Energy in both events, and samples were analyzed by Consumers Energy Laboratory Services in Jackson, Michigan, with radium samples analyzed by Eurofins Environmental Testing in Earth City, Missouri, in accordance with the SAP. Static water elevation data were collected at all monitoring well locations. Groundwater samples were collected from the background monitoring wells and Pond A monitoring wells for the Appendix III and Appendix IV constituents and field parameters.

A summary of the groundwater data collected during the April and October 2025 events are provided on Table 1 (static groundwater elevation data), Table 2 (field data), Table 3 (background well analytical results), and Table 4 (Pond A analytical results). Sample data, including laboratory reports and field data, are included in Appendices A (laboratory reports) and B (field data).

2.2.2 Data Quality Review

Data from each round were evaluated for completeness, overall quality and usability, method-specified sample holding times, precision and accuracy, and potential sample contamination. The data were found to be complete and usable for the purposes of the CCR monitoring program. The data quality reviews are summarized in Appendix C.

2.2.3 Groundwater Flow Rate and Direction

Groundwater elevation data collected site-wide during the 2025 semiannual assessment monitoring events were generally similar to data collected previously since the background sampling events commenced in December 2015. The data showed that groundwater within the uppermost aquifer generally flows to the south-southeast across the site, with a southwesterly groundwater flow component on the western edge of the site. Groundwater flow in the immediate vicinity of Pond A is predominately toward the south-southeast, consistent with previous monitoring events completed after pond closure. The groundwater mounding previously observed in the immediate vicinity of Pond A early on in the program is no longer apparent subsequent to completing decommissioning activities in Summer 2019.

Groundwater elevations measured across the site during the April and October 2025 events are provided on Table 1. April and October 2025 groundwater elevations were used to construct the groundwater contour maps provided on Figure 3 and Figure 4, respectively. The average hydraulic gradient for each sampling event was calculated using the following well pairs: JHC-MW-15026/PZ-23S, JHC-MW-15017/PZ-24S, and JHC-MW-15024/JHC-MW-15031 (Figure 2). The average hydraulic gradient was 0.0033 ft/ft in April 2025 and 0.0032 ft/ft in October 2025.

Using the mean hydraulic conductivity of 62 ft/day (ARCADIS, 2016) and an assumed effective porosity of 0.4, the estimated average seepage velocity is approximately 0.51 ft/day or 180 ft/year for the April 2025 event, and approximately 0.49 ft/day or 180 ft/year for the October 2025 event.

The general groundwater flow direction is similar to that identified in previous monitoring rounds and continues to demonstrate that the downgradient wells are appropriately positioned to detect the presence of Appendix IV constituents that could potentially migrate from Pond A.

3.0 Statistical Evaluation

Assessment monitoring is continuing at Pond A, while corrective measures are further evaluated in accordance with §257.96 and §257.97 as outlined in the ACM. The following section summarizes the statistical approach applied to assess the 2025 groundwater data in accordance with the assessment monitoring program. The statistical evaluation details are provided in Appendix D (*Statistical Evaluation of April 2025 Assessment Monitoring Sampling Event*) and Appendix E (*Statistical Evaluation of October 2025 Assessment Monitoring Sampling Event*).

3.1 Establishing Groundwater Protection Standards

The federal Appendix IV GWPSs are used to assess whether Appendix IV constituent concentrations are present in groundwater at unacceptable levels as a result of CCR Unit operations by statistically comparing concentrations in the downgradient wells to the GWPSs for each Appendix IV constituent. The calculation of the GWPSs is documented in the Groundwater Protection Standards technical memorandum included in Appendix C of the 2018 Annual Report.

3.2 Data Comparison to Groundwater Protection Standards

Consistent with the *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (Unified Guidance) (USEPA, 2009), the preferred method for comparisons to a fixed standard are confidence limits. An exceedance of the standard occurs when the 99 percent lower confidence limit of the downgradient data exceeds the GWPS. As documented in the January 14, 2019 *Notification of Appendix IV Constituent Exceeding Groundwater Protection Standard per §257.95(g)*, arsenic was present at statistically significant levels above the GWPSs in one of the downgradient wells at Pond A based on the statistical data comparison for the initial semiannual assessment monitoring event (June 2018). Therefore, Consumers Energy initiated the ACM. Assessment monitoring is ongoing while corrective measures are being assessed and implemented.

Arsenic was identified at downgradient monitoring well JHC-MW-15011 at statistically significant levels exceeding the GWPS during the initial assessment monitoring event conducted in June 2018. Arsenic at JHC-MW-15011/R (combined dataset from the original well and the replacement well as denoted by the “/R”) continued to be present at statistically significant levels at or above the GWPS through second quarter 2021. As documented in prior annual reports, arsenic concentrations at JHC-MW-15011/R declined in 2020 and 2021 such that the lower confidence limit (LCL) for JHC-MW-15011/R has been below the GWPS since the second semiannual event of 2021. With the exception of a slight rebound in fourth quarter 2022, arsenic concentrations have been below the GWPS since fourth quarter 2021.

Arsenic concentrations have never been present at statistically significant levels above the GWPS in the other downgradient monitoring wells.. A slight increase in arsenic concentrations at JHC-MW-15006 was observed in fourth quarter 2024 and both events in 2025, such that arsenic was slightly above the GWPS (11-12 ug/L). However, the LCL for arsenic at JHCMW15006 remains below the GWPS.

No other Appendix IV constituents have been detected at statistically significant levels above the GWPS. Selenium at JHC-MW-15009R and JHC-MW-15011R has been detected at concentrations above the GWPS; however, these detections are not statistically significant, i.e., the LCL remains below the GWPS.

The statistical data comparison for the April 2025 (Appendix D) and October 2025 (Appendix E) semiannual assessment monitoring events indicate that no Appendix IV constituents were present at statistically significant levels exceeding the GWPSs.

The decrease in arsenic concentrations at JHC-MW-15011/R since 2019 demonstrates the effectiveness of the cap in addressing the arsenic concentrations associated with operations at Pond A. However, as the groundwater flow regime has changed and Pond A has been dewatered with site conditions stabilized through capping, changes in groundwater concentrations for Appendix III and Appendix IV constituents within the Pond A monitoring network are being observed post-closure; these changes are associated with influence from historical Ponds B-K. Trends continue to be monitored and statistical significance relative to applicable GWPSs continues to be evaluated during the post-closure period as groundwater continues to reach its new equilibrium and groundwater travel times allow upgradient Ponds B-K groundwater to fully reach the entire Pond A well network.

Summaries of the confidence intervals for April 2025 and October 2025 are provided in Table 5 and Table 6, respectively.

4.0 Corrective Action

Consumers Energy provided notification in January 2019 that arsenic was present at statistically significant levels above the federal GWPS established at 10 ug/L in one out of the six downgradient monitoring wells at Pond A as follows:

- Arsenic at JHC-MW-15011.

The CCR Rule 40 CFR §257.96(a) requires that an owner or operator initiate an assessment of corrective measures to prevent further release, to remediate any releases, and to restore impacted areas to original conditions if any Appendix IV constituent has been detected at a statistically significant level exceeding a GWPS. The ACM was initiated on April 14, 2019, and was certified and submitted to the EGLE on September 11, 2019, in accordance with the schedule in §257.96.

4.1 Nature and Extent Groundwater Sampling

Per §257.95(g)(1), in the event that the facility determines, pursuant to §257.93(h), that there is a statistical exceedance of the GWPSs for one or more of the Appendix IV constituents, the facility must characterize the nature and extent of the release of CCR as well as any site conditions that may affect the remedy selected. The nature and extent data consist of Appendix III and IV constituents collected from the background and downgradient CCR monitoring well networks and from supplemental downgradient wells in the Pond A HMP monitoring well network. Nature and extent sampling in 2025 included shallow temporary step-out wells TW-19-05 and TW-19-06A in addition to wells and parameters monitored as part of the Pond A HMP and nature and extent sampling program at MW-14S, PZ-23S, PZ-24S, and PZ-40S. A groundwater sample was unable to be collected at PZ-24S during the second semiannual event due to insufficient volume of groundwater available in the well to purge and sample the well in accordance with the QAPP. Locations of the monitoring wells used for nature and extent groundwater sampling are shown on Figure 2. A summary of the nature and extent groundwater data collected in 2025 are provided on Table 7. The soil boring logs and well construction diagrams for the step out monitoring wells utilized for the nature and extent groundwater sampling are included in the *2019 Annual Groundwater Monitoring and Corrective Action Report and Fourth Quarter 2019 Hydrogeological Monitoring Report, JH Campbell Power Plant, Pond A CCR Unit* (2019 Annual Report) (TRC, January 2020).

As discussed in the ACM, the nature and extent of contamination (e.g. arsenic in groundwater) relative to GWPSs has been defined per the RCRA CCR Rule requirements based on the site-specific hydrogeology. The presence of nearby surface water bodies (Recirculation Pond and the Pigeon River) as well as the unimpacted background monitoring wells to the north provide the boundaries for the extent of the GWPS exceedances. This was further confirmed by the additional 2021 grab groundwater sampling data that shows arsenic is well below the GWPS at all five of the soil boring locations immediately downgradient from Pond A as detailed in the 2021 Annual Report. In addition, the underlying clay unit prevents the downward vertical migration of groundwater. Although Michigan Part 201 residential drinking water criteria are exceeded, there are no onsite drinking water wells downgradient from Pond A and the closest downgradient drinking water wells are located south and east of the Pigeon River, separated

hydraulically by the river. Shallow groundwater has the potential to vent to nearby surface water boundaries that are not used for drinking water. Although several Appendix III and IV constituents exceed the Michigan Part 201 generic groundwater-surface water interface (GSI) criteria in on-site wells, compliance for the GSI pathway is currently met based on data collected from the supplemental Pond A HMP wells and the National Pollutant Discharge Elimination System (NPDES) outfall at the Recirculation Pond. Compliance for the GSI pathway will continue to be monitored in accordance with the EGLE-approved Pond A AMP.

4.2 Assessment of Corrective Measures

The ACM was submitted on September 11, 2019, as a step towards developing a final remedy.

Several groundwater remediation alternatives evaluated in the ACM are considered technically feasible to reduce on-site groundwater concentrations. The following corrective measures were retained for further evaluation in conjunction with closure in place for Pond A:

- Groundwater Monitoring and Institutional Controls;
- Post Source Control/Removal Monitoring;
- Groundwater Capture/Control;
- Impermeable Barrier with Groundwater Capture/Control;
- Active Geochemical Sequestration; and
- Passive Geochemical Sequestration.

Consumers Energy is following an adaptive management strategy for selecting the final groundwater remedy for Pond A in conjunction with the specified CCR source material management strategies discussed in the ACM. Under this remedy selection strategy, measures that remove source material, reduce infiltration, and/or minimize the potential for future migration during the closure process may be implemented to address existing conditions followed by monitoring and evaluation of the performance after closure. Adjustments will be made to the corrective measure remedy, as needed, to achieve the remedial goals.

4.3 Remedy Selection

Remedy selection for Pond A, prescribed by the CCR Rule, is being undertaken in coordination with the EGLE Consent Agreement WMRPD No. 115-01-2018, which was executed on December 28, 2018. The January 2026 semiannual progress report describing the progress in selecting and designing the remedy required pursuant to §257.97(a) is included in Appendix F of this report. Pond A has been closed according to the *JH Campbell Generating Facility Pond A Closure Plan, West Olive, Michigan* (Golder, October 2016) and the updated closure plan detailing the final cover system that was submitted to the EGLE in February 2019. Pond A was closed with waste in place in accordance with the requirements for CCR landfills under RCRA (§257.102(d)). Cover construction was completed in summer 2019 and the *Construction Documentation and Certification Report* (Golder, October 2019) was approved by the EGLE on November 25, 2019.

Changes in groundwater chemistry continue to be evaluated following the completion of capping at Pond A. The arsenic exceedance at JHC-MW-15011, which initially triggered corrective action, continues to attenuate following the completion of the final cover for Pond A. Since the installation of the final cover, groundwater monitoring data for several other constituents indicate an observable influence from immediately adjacent, upgradient, closed, pre-existing units. Remedial action for the upgradient units is being taken under Consent Agreement WMRPD No. 115-01-2018.

5.0 Conclusions and Recommendations

Assessment monitoring is ongoing at the Pond A CCR unit while corrective action continues to be assessed. Pond A has been closed in place. Overall, the statistical evaluations have confirmed that arsenic is the only Appendix IV constituent to have shown a statistically significant concentration above the GWPSs throughout the assessment monitoring program (2018-2024). In 2025, the statistical evaluation indicated that there were no statistically significant exceedances of the GWPS.

The ACM also documents that groundwater nature and extent have been defined, as required in §257.95(g)(1). The ACM report provides a high-level assessment of groundwater remediation technologies that could potentially address site-specific constituents of concern (i.e. arsenic) under known groundwater conditions. Changes in groundwater chemistry following the completion of capping at Pond A indicate that the system is establishing a new equilibrium following closure and that the immediately upgradient closed CCR units are impacting groundwater quality in the Pond A well network.

The groundwater management remedy for Pond A will be selected as soon as feasible to, at a minimum, meet the federal standards of §257.97(b) of the CCR Rule. Consumers Energy will continue executing the self-implementing groundwater compliance schedule in conformance with §257.90 - §257.98. The next semiannual monitoring events are scheduled for the second and fourth calendar quarters of 2026.

6.0 References

- Consumers Energy. January 14, 2019. Notification of Appendix IV Constituent Exceeding Groundwater Protection Standard per §257.95(g).
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- TRC. January 2018. Annual Groundwater Monitoring Report, JH Campbell Power Plant, Pond A CCR Unit, West Olive, Michigan. Prepared for Consumers Energy Company.
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- TRC. March 2019; Revised July 2019. Pond A Hydrogeological Monitoring Plan, JH Campbell Power Plant, West Olive, Michigan. Prepared for Consumers Energy Company.
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- TRC. January 2020. 2019 Annual Groundwater Monitoring and Corrective Action Report and Fourth Quarter 2019 Hydrogeological Monitoring Report, JH Campbell Power Plant, Pond A CCR Unit, West Olive, Michigan. Prepared for Consumers Energy.
- TRC. January 2021. Sample and Analysis Plan, Electric Generation Facilities RCRA CCR Assessment Monitoring Program, JH Campbell Power Plant Pond A, West Olive, Michigan. Prepared for Consumers Energy.
- TRC. January 2022. 2021 Annual Groundwater Monitoring and Corrective Action Report for the JH Campbell Power Plant Pond A CCR Unit, West Olive, Michigan. Prepared for Consumers Energy.
- USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. Office of Conservation and Recovery. EPA 530/R-09-007.

Tables

Table 1
Summary of Groundwater Elevation Data
JH Campbell – RCRA CCR Monitoring Program
West Olive, Michigan

Well Location	Ground Surface Elevation (ft)	TOC Elevation (ft)	Geologic Unit of Screen Interval	Screen Interval Elevation (ft)	April 14, 2025		October 7, 2025		
					Depth to Water (ft BTOC)	Groundwater Elevation (ft)	Depth to Water (ft BTOC)	Groundwater Elevation (ft)	
Background									
JHC-MW-15023	617.01	619.98	Sand	603.0 to 593.0	19.35	600.63	20.79	599.19	
JHC-MW-15024	613.79	616.62	Sand	606.8 to 596.8	15.25	601.37	16.40	600.22	
JHC-MW-15025	614.14	617.17	Sand	607.1 to 597.1	14.95	602.22	15.98	601.19	
JHC-MW-15026	615.09	618.04	Sand	607.1 to 597.1	16.97	601.07	17.85	600.19	
JHC-MW-15027	614.77	617.30	Sand	604.8 to 594.8	17.75	599.55	18.50	598.80	
JHC-MW-15028	611.02	613.80	Sand	603.0 to 593.0	17.70	596.10	18.21	595.59	
JHC-MW-15029	608.08	610.95	Sand	600.1 to 590.1	14.55	596.40	15.35	595.60	
JHC-MW-15030	604.05	607.17	Sand	600.1 to 590.1	NM		NM		
Landfill									
JHC-MW-15017	613.69	616.61	Sand	603.7 to 593.7	18.36	598.25	19.05	597.56	
JHC-MW-15018	614.26	617.02	Sand	604.3 to 594.3	18.92	598.10	19.56	597.46	
JHC-MW-15031	632.94	635.87	Sand	599.9 to 589.9	44.40	591.47	44.26	591.61	
JHC-MW-15032	611.32	614.29	Sand	598.3 to 588.3	17.99	596.30	19.18	595.11	
JHC-MW-15034	612.90	615.97	Sand	601.9 to 591.9	17.05	598.92	18.45	597.52	
JHC-MW-15035	632.53	634.28	Sand	599.5 to 589.5	42.15	592.13	41.45	592.83	
JHC-MW-15036	617.94	618.34	Sand	597.9 to 587.9	27.63	590.71	27.39	590.95	
JHC-MW-15037	614.28	616.06	Sand	591.3 to 586.3	25.82	590.24	26.19	589.87	
MW-B3	630.51	634.17	Sand	598.5 to 593.5	40.17	594.00	39.91	594.26	
MW-B4	633.80	635.67	Sand	593.8 to 588.8	42.68	592.99	42.97	592.70	
Pond A									
JHC-MW-15006	624.74	627.58	Sand	599.7 to 589.7	35.90	591.68	36.32	591.26	
JHC-MW-15007R ⁽²⁾	625.73	628.26	Sand	595.7 to 585.7	36.98	591.28	37.12	591.14	
JHC-MW-15008R ⁽¹⁾	632.32	634.67	Sand	597.3 to 587.3	43.95	590.72	43.65	591.02	
JHC-MW-15009R ⁽²⁾	632.15	635.05	Sand	595.2 to 585.2	44.10	590.95	43.70	591.35	
JHC-MW-15011R ⁽²⁾	627.73	629.79	Sand	594.7 to 584.7	38.14	591.65	38.73	591.06	
Downgradient Wells									
MW-13	593.40	595.37	Clayey Silt	587.9 to 585.4	Dry		Dry		
MW-14S	587.36	590.98	Sand	582.9 to 577.9	11.54	579.44	11.83	579.15	
PZ-23S	602.84	604.97	Sand	591.8 to 586.8	15.27	589.70	16.02	588.95	
PZ-24S	586.56	590.15	Sand	584.6 to 579.6	8.24	581.91	10.28	579.87	
PZ-40S	589.51	593.25	Sand	585.5 to 575.5	11.30	581.95	13.46	579.79	

Notes:

Survey conducted by Nederveld, November 2015, October 2018, December 2018, August 2019, July 2021, and July 2022.

Elevation in feet relative to North American Vertical Datum 1988 (NAVD 88).

TOC: Top of well casing.

ft BTOC: Feet below top of well casing.

NM: Not measured

(1) JHC-MW-15008R installed in June 2019.

(2) JHC-MW-15007R, JHC-MW-15009R, and JHC-MW-15011R installed in July 2021.

Table 2
 Summary of Field Parameters
 JH Campbell Pond A - RCRA CCR Monitoring Program
 West Olive, Michigan

Sample Location	Sample Date	Dissolved Oxygen, Field mg/L	Oxidation Reduction Potential, Field mV	pH, Field SU	Specific Conductivity, Field umhos/cm	Temperature, Field °C	Turbidity, Field NTU
JH Campbell Background							
JHC-MW-15023	4/14/2025	0.52	177.7	6.3	191	11.0	2.1
	10/7/2025	1.89	194.0	6.4	168	12.4	1.3
JHC-MW-15024	4/14/2025	2.34	130.6	7.9	293	9.2	1.9
	10/7/2025	1.60	168.9	7.9	292	12.4	1.6
JHC-MW-15025	4/14/2025	6.35	137.9	8.1	348	8.6	2.4
	10/8/2025	5.68	162.3	7.9	371	11.4	1.5
JHC-MW-15026	4/14/2025	7.81	216.8	5.9	43	8.7	3.2
	10/8/2025	6.98	282.3	5.6	53	13.2	1.8
JHC-MW-15027	4/15/2025	8.55	178.2	8.1	182	8.5	2.9
	10/8/2025	9.15	235.7	7.9	212	13.1	2.9
JHC-MW-15028	4/15/2025	8.48	145.9	8.6	118	8.5	2.2
	10/8/2025	8.29	182.5	8.5	135	14.3	1.1
JH Campbell Pond A							
JHC-MW-15006	4/14/2025	0.26	15.7	8.1	643	13.5	1.3
	10/8/2025	1.84	38.8	8.2	665	14.6	1.2
JHC-MW-15007R	4/14/2025	0.19	-21.1	8.0	625	13.5	1.3
	10/8/2025	1.30	-2.5	8.0	660	13.6	1.6
JHC-MW-15008R	4/14/2025	1.07	120.1	7.2	671	13.9	1.4
	10/7/2025	2.19	94.7	7.2	613	14.3	1.4
JHC-MW-15009R	4/14/2025	0.22	134.4	6.8	487	13.4	1.2
	10/7/2025	0.56	52.1	6.9	515	13.4	1.2
JHC-MW-15011R	4/14/2025	0.01	61.6	6.8	501	13.0	1.7
	10/8/2025	0.61	24.3	6.7	561	13.7	1.1

Notes:

mg/L = Milligrams per Liter
 mV = Millivolts
 SU = Standard Units
 umhos/cm = Micromhos per centimeter
 °C = Degrees Celsius
 NTU = Nephelometric Turbidity Unit

Table 3
 Summary of Groundwater Sampling Results (Analytical)
 JH Campbell Background - RCRA CCR Monitoring Program
 West Olive, Michigan

		Sample Location:				JHC-MW-15023		JHC-MW-15024		JHC-MW-15025	
		Sample Date:				4/14/2025	10/7/2025	4/14/2025	10/7/2025	4/14/2025	10/8/2025
Constituent	Unit	EPA MCL	MI Residential*	MI Non-Residential*	MI GSI^						
Appendix III⁽¹⁾											
Boron	ug/L	NC	500	500	7,200	33	38	23	27	22	24
Calcium	mg/L	NC	NC	NC	500 ^{EE}	19.0	18.4	31.3	33.0	34.2	31.1
Chloride	mg/L	250**	250 ^E	250 ^E	500 ^{EE}	9.10	5.31	17.0	21.1	35.2	35.7
Fluoride	ug/L	4,000	NC	NC	NC	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Sulfate	mg/L	250**	250 ^E	250 ^E	500 ^{EE}	13.1	11.0	6.54	6.57	7.47	8.10
Total Dissolved Solids	mg/L	500**	500 ^E	500 ^E	500	114	111	164	181	208	217
pH, Field	SU	6.5 - 8.5**	6.5 - 8.5^E	6.5 - 8.5^E	6.5 - 9.0	6.3	6.4	7.9	7.9	8.1	7.9
Appendix IV⁽¹⁾											
Antimony	ug/L	6	6.0	6.0	130	< 1	< 1	< 1	< 1	< 1	< 1
Arsenic	ug/L	10	10	10	10	< 1	< 1	< 1	< 1	< 1	< 1
Barium	ug/L	2,000	2,000	2,000	820	35	19	17	19	7	8
Beryllium	ug/L	4	4.0	4.0	18	< 1	< 1	< 1	< 1	< 1	< 1
Cadmium	ug/L	5	5.0	5.0	3.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	ug/L	100	100	100	11	< 1	1	< 1	< 1	< 1	1
Cobalt	ug/L	NC	40	100	100	< 6	< 6	< 6	< 6	< 6	< 6
Fluoride	ug/L	4,000	NC	NC	NC	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Lead	ug/L	NC	4.0	4.0	39	< 1	< 1	< 1	< 1	< 1	< 1
Lithium	ug/L	NC	170	350	440	< 10	< 10	< 10	< 10	< 10	< 10
Mercury	ug/L	2	2.0	2.0	0.20#	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	NC	73	210	3,200	< 5	< 5	< 5	< 5	< 5	< 5
Radium-226	pCi/L	NC	NC	NC	NC	< 0.144	< 0.436	< 0.144	< 0.355	< 0.170	< 0.443
Radium-228	pCi/L	NC	NC	NC	NC	1.01	< 0.578	< 0.626	1.05	< 0.605	1.30
Radium-226/228	pCi/L	5	NC	NC	NC	1.02	0.681	< 0.626	1.27	< 0.605	1.56
Selenium	ug/L	50	50	50	5.0	2	< 1	2	1	1	< 1
Thallium	ug/L	2	2.0	2.0	3.7	< 2	< 2	< 2	< 2	< 2	< 2

Notes:

ug/L = Micrograms per Liter; mg/L = Milligrams per Liter.

pCi/L = Picocuries per Liter; SU = Standard Units; pH is a field parameter.

MCL = Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.

NC = No Criteria; -- = Not Analyzed.

* = Michigan Part 201 Generic Drinking Water Cleanup Criteria, December 30, 2013, updated October 12, 2023.

** = Secondary Maximum Contaminant Level (SMCL), EPA Secondary Drinking Water Regulations (SDWR) April, 2012.

^ = Michigan Part 201 Groundwater Surface Water Interface (GSI) Criteria. Hardness-dependent criteria calculated using site-specific hardness of 180 mg CaCO₃/L as measured at surface water sample SW-01 collected on April 9, 2018 from the Pigeon River. Chromium GSI criterion based on hexavalent chromium per footnote {H}.

= If detected above 0.20 ug/L, further evaluation of low-level mercury may be necessary to evaluate the GSI pathway per Michigan Part 201 and MDEQ policy and procedure 09-014 dated June 20, 2012.

^E = Criterion is the aesthetic drinking water value per footnote {E}.

^{EE} = Criterion is based on the total dissolved solids GSI value per footnote {EE}.

(1) 40 CFR Part 257 Appendix III Detection Monitoring Constituents and Appendix IV Assessment Monitoring Constituents.

BOLD value indicates an exceedance of one or more of the listed criteria.

RED value indicates an exceedance of the MCL.

All metals were analyzed as total unless otherwise specified.

Table 3
 Summary of Groundwater Sampling Results (Analytical)
 JH Campbell Background - RCRA CCR Monitoring Program
 West Olive, Michigan

		Sample Location:				JHC-MW-15026		JHC-MW-15027		JHC-MW-15028	
		Sample Date:				4/15/2025	10/8/2025	4/15/2025	10/8/2025	4/15/2025	10/8/2025
Constituent	Unit	EPA MCL	MI Residential*	MI Non-Residential*	MI GSI^						
Appendix III⁽¹⁾											
Boron	ug/L	NC	500	500	7,200	< 20	< 20	22	29	< 20	< 20
Calcium	mg/L	NC	NC	NC	500 ^{EE}	3.45	3.93	25.4	29.7	16.4	19.6
Chloride	mg/L	250**	250 ^E	250 ^E	500 ^{EE}	3.36	4.23	1.80	1.17	1.05	< 1.00
Fluoride	ug/L	4,000	NC	NC	NC	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Sulfate	mg/L	250**	250 ^E	250 ^E	500 ^{EE}	6.48	7.39	5.70	5.50	4.67	5.62
Total Dissolved Solids	mg/L	500**	500 ^E	500 ^E	500	37	59	123	139	66	88
pH, Field	SU	6.5 - 8.5**	6.5 - 8.5^E	6.5 - 8.5^E	6.5 - 9.0	5.9	5.6	8.1	7.9	8.6	8.5
Appendix IV⁽¹⁾											
Antimony	ug/L	6	6.0	6.0	130	< 1	< 1	< 1	< 1	< 1	< 1
Arsenic	ug/L	10	10	10	10	< 1	< 1	< 1	< 1	< 1	< 1
Barium	ug/L	2,000	2,000	2,000	820	8	9	9	13	< 5	6
Beryllium	ug/L	4	4.0	4.0	18	< 1	< 1	< 1	< 1	< 1	< 1
Cadmium	ug/L	5	5.0	5.0	3.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	ug/L	100	100	100	11	< 1	< 1	< 1	1	< 1	1
Cobalt	ug/L	NC	40	100	100	< 6	< 6	< 6	< 6	< 6	< 6
Fluoride	ug/L	4,000	NC	NC	NC	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Lead	ug/L	NC	4.0	4.0	39	< 1	< 1	< 1	< 1	< 1	< 1
Lithium	ug/L	NC	170	350	440	< 10	< 10	< 10	< 10	< 10	< 10
Mercury	ug/L	2	2.0	2.0	0.20#	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	NC	73	210	3,200	< 5	< 5	< 5	< 5	< 5	< 5
Radium-226	pCi/L	NC	NC	NC	NC	< 0.213	< 0.476	< 0.224	< 0.586	< 0.140	< 0.365
Radium-228	pCi/L	NC	NC	NC	NC	< 0.600	1.02	< 0.520	0.837	< 0.513	< 0.649
Radium-226/228	pCi/L	5	NC	NC	NC	< 0.600	1.20	< 0.520	1.01	< 0.513	< 0.649
Selenium	ug/L	50	50	50	5.0	< 1	< 1	< 1	< 1	< 1	< 1
Thallium	ug/L	2	2.0	2.0	3.7	< 2	< 2	< 2	< 2	< 2	< 2

Notes:

ug/L = Micrograms per Liter; mg/L = Milligrams per Liter.

pCi/L = Picocuries per Liter; SU = Standard Units; pH is a field parameter.

MCL = Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.

NC = No Criteria; -- = Not Analyzed.

* = Michigan Part 201 Generic Drinking Water Cleanup Criteria, December 30, 2013, updated October 12, 2023.

** = Secondary Maximum Contaminant Level (SMCL), EPA Secondary Drinking Water Regulations (SDWR) April, 2012.

^ = Michigan Part 201 Groundwater Surface Water Interface (GSI) Criteria. Hardness-dependent criteria calculated using site-specific hardness of 180 mg CaCO3/L as measured at surface water sample SW-01 collected on April 9, 2018 from the Pigeon River. Chromium GSI criterion based on hexavalent chromium per footnote {H}.

= If detected above 0.20 ug/L, further evaluation of low-level mercury may be necessary to evaluate the GSI pathway per Michigan Part 201 and MDEQ policy and procedure 09-014 dated June 20, 2012.

^E = Criterion is the aesthetic drinking water value per footnote {E}.

^{EE} = Criterion is based on the total dissolved solids GSI value per footnote {EE}.

(1) 40 CFR Part 257 Appendix III Detection Monitoring Constituents and Appendix IV Assessment Monitoring Constituents.

BOLD value indicates an exceedance of one or more of the listed criteria.

RED value indicates an exceedance of the MCL.

All metals were analyzed as total unless otherwise specified.

Table 4
 Summary of Groundwater Sampling Results (Analytical)
 JH Campbell Pond A - RCRA CCR Monitoring Program
 West Olive, Michigan

		Sample Location:				JHC-MW-15006		JHC-MW-15007R		JHC-MW-15008R		JHC-MW-15009R		JHC-MW-15011R	
		Sample Date:				4/14/2025	10/8/2025	4/14/2025	10/8/2025	4/14/2025	10/7/2025	4/14/2025	10/7/2025	4/14/2025	10/8/2025
Constituent	Unit	EPA MCL	MI Residential*	MI Non-Residential*	MI GSI^										
Appendix III⁽¹⁾															
Boron	ug/L	NC	500	500	7,200	600	609	1,320	1,260	1,320	1,220	2,840	1,890	4,190	5,040
Calcium	mg/L	NC	NC	NC	500 ^{EE}	74.4	69.1	71.9	73.6	80.4	72.8	72.6	74.4	71.4	79.3
Chloride	mg/L	250**	250 ^E	250 ^E	500 ^{EE}	11.8	14.0	14.5	13.4	14.5	10.4	12.5	12.9	5.61	3.38
Fluoride	ug/L	4,000	NC	NC	NC	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Sulfate	mg/L	250**	250 ^E	250 ^E	500 ^{EE}	100	81.5	87.2	83.6	117	57.0	43.1	37.8	94.4	124
Total Dissolved Solids	mg/L	500**	500 ^E	500 ^E	500	418	415	415	431	452	386	376	331	343	385
pH, Field	SU	6.5 - 8.5**	6.5 - 8.5 ^E	6.5 - 8.5 ^E	6.5 - 9.0	8.1	8.2	8.0	8.0	7.2	7.2	6.8	6.9	6.8	6.7
Appendix IV⁽¹⁾															
Antimony	ug/L	6	6.0	6.0	130	< 1	< 1	< 1	< 1	1	1	< 1	< 1	1	< 1
Arsenic	ug/L	10	10	10	10	11	12	6	6	< 1	< 1	< 1	< 1	4	5
Barium	ug/L	2,000	2,000	2,000	820	171	152	249	252	150	138	274	240	387	348
Beryllium	ug/L	4	4.0	4.0	18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Cadmium	ug/L	5	5.0	5.0	3.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.4	0.3
Chromium	ug/L	100	100	100	11	1	1	< 1	1	< 1	< 1	< 1	< 1	< 1	< 1
Cobalt	ug/L	NC	40	100	100	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Fluoride	ug/L	4,000	NC	NC	NC	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Lead	ug/L	NC	4.0	4.0	39	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Lithium	ug/L	NC	170	350	440	16	15	16	15	22	20	15	13	22	21
Mercury	ug/L	2	2.0	2.0	0.20#	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	NC	73	210	3,200	15	16	23	21	28	20	12	17	11	9
Radium-226	pCi/L	NC	NC	NC	NC	< 0.203	< 0.468	0.435	< 0.388	< 0.175	< 0.333	0.176	0.436	0.381	< 0.365
Radium-228	pCi/L	NC	NC	NC	NC	< 0.571	< 0.589	0.925	0.617	0.920	0.898	0.646	1.30	1.55	0.954
Radium-226/228	pCi/L	5	NC	NC	NC	< 0.571	< 0.589	1.36	0.781	1.07	1.01	0.823	1.74	1.93	1.28
Selenium	ug/L	50	50	50	5.0	23	21	3	7	14	24	76	106	140	145
Thallium	ug/L	2	2.0	2.0	3.7	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2

Notes:
 ug/L = micrograms per liter; mg/L = milligrams per liter.
 pCi/L = picocuries per liter; SU = standard units; pH is a field parameter.
 MCL = Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.
 NC = no criteria; -- = not analyzed.
 * - Michigan Part 201 Generic Drinking Water Cleanup Criteria, December 30, 2013, updated October 12, 2023.
 ** - Secondary Maximum Contaminant Level (SMCL), EPA Secondary Drinking Water Regulations (SDWR) April, 2012.
 ^ - Michigan Part 201 Groundwater Surface Water Interface (GSI) Criteria. Hardness-dependent criteria calculated using site-specific hardness of 180 mg CaCO3/L as measured at surface water sample SW-01 collected on April 9, 2018 from the Pigeon River. Chromium GSI criterion based on hexavalent chromium per footnote {H}.
 # - If detected above 0.20 ug/L, further evaluation of low-level mercury may be necessary to evaluate the GSI pathway per Michigan Part 201 and MDEQ policy and procedure 09-014 dated June 20, 2012.
 E - Criterion is the aesthetic drinking water value per footnote {E}.
 EE - Criterion is based on the total dissolved solids GSI value per footnote {EE}.
 (1) 40 CFR Part 257 Appendix III Detection Monitoring Constituents and Appendix IV Assessment Monitoring Constituents.
BOLD value indicates an exceedance of one or more of the listed criteria.
RED value indicates an exceedance of the MCL.
 All metals were analyzed as total unless otherwise specified.

Table 5
 Summary of Groundwater Protection Standard Exceedances – April 2025
 JH Campbell Pond A – RCRA CCR Monitoring Program
 West Olive, Michigan

Constituent	Units	GWPS	JHC-MW-15006		JHC-MW-15009R		JHC-MW-15011R	
			LCL	UCL	LCL	UCL	LCL	UCL
Arsenic	ug/L	10	6.2	10	--	--	3.5	9.0
Selenium	ug/L	50	--	--	25	170	27	110

Notes:

ug/L - micrograms per Liter

-- - Not Applicable; well/parameter pair did not directly exceed the GWPS and was not included in further analysis.

GWPS - Groundwater Protection Standard as established in TRC's Technical Memorandum dated October 15, 2018.

UCL - Upper Confidence Limit ($\alpha = 0.01$) of the downgradient data set.

LCL - Lower Confidence Limit ($\alpha = 0.01$) of the downgradient data set.

Indicates a statistically significant exceedance of the GWPS. An exceedance occurs when the LCL is greater than the GWPS.

Table 6
 Summary of Groundwater Protection Standard Exceedances – October 2025
 JH Campbell Pond A – RCRA CCR Monitoring Program
 West Olive, Michigan

Constituent	Units	GWPS	JHC-MW-15006		JHC-MW-15009R		JHC-MW-15011R	
			LCL	UCL	LCL	UCL	LCL	UCL
Arsenic	ug/L	10	7.0	12	--	--	4.1	8.9
Selenium	ug/L	50	--	--	23	170	48	120

Notes:

ug/L - micrograms per Liter

-- - Not Applicable; well/parameter pair did not directly exceed the GWPS and was not included in further analysis.

GWPS - Groundwater Protection Standard as established in TRC's Technical Memorandum dated October 15, 2018.

UCL - Upper Confidence Limit ($\alpha = 0.01$) of the downgradient data set.

LCL - Lower Confidence Limit ($\alpha = 0.01$) of the downgradient data set.

Indicates a statistically significant exceedance of the GWPS. An exceedance occurs when the LCL is greater than the GWPS.

Table 7
 Summary of Groundwater Sampling Results (Analytical)
 JH Campbell Pond A Nature and Extent - RCRA CCR Monitoring Program
 West Olive, Michigan

		Sample Location:				MW-14S		PZ-24S		PZ-40S		TW-19-05		TW-19-06A	
		Sample Date:				4/15/2025	10/7/2025	4/15/2025	10/7/2025 ⁽²⁾	4/15/2025	10/7/2025	4/15/2025	10/8/2025	4/15/2025	10/8/2025
Constituent	Unit	EPA MCL	MI Residential*	MI Non-Residential*	MI GSI [^]										
Appendix III⁽¹⁾															
Boron	ug/L	NC	500	500	7,200	39	52	21	--	44	51	94	105	45	68
Calcium	mg/L	NC	NC	NC	500 ^{EE}	9.14	12.1	5.38	--	1.75	2.19	37.8	55.0	20.4	23.5
Chloride	mg/L	250**	250 ^E	250 ^E	500 ^{EE}	1.42	1.43	1.21	--	< 1.00	1.97	< 1.00	< 1.00	< 1.00	< 1.00
Fluoride	ug/L	4,000	NC	NC	NC	< 1,000	< 1,000	< 1,000	--	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Sulfate	mg/L	250**	250 ^E	250 ^E	500 ^{EE}	12.6	11.5	14.3	--	7.80	6.21	13.1	6.40	6.74	6.06
Total Dissolved Solids	mg/L	500**	500 ^E	500 ^E	500	88	95	81	--	45	48	187	237	124	103
pH, Field	SU	6.5 - 8.5**	6.5 - 8.5^E	6.5 - 8.5^E	6.5 - 9.0	6.5	6.6	5.8	--	5.3	5.3	7.3	7.3	7.1	7.3
Appendix IV⁽¹⁾															
Antimony	ug/L	6	6.0	6.0	130	< 1	< 1	< 1	--	< 1	< 1	2	2	< 1	< 1
Arsenic	ug/L	10	10	10	10	< 1	< 1	< 1	--	< 1	< 1	< 1	< 1	< 1	< 1
Barium	ug/L	2,000	2,000	2,000	820	14	16	42	--	29	34	42	43	7	9
Beryllium	ug/L	4	4.0	4.0	18	< 1	< 1	< 1	--	< 1	< 1	< 1	< 1	< 1	< 1
Cadmium	ug/L	5	5.0	5.0	3.5	< 0.2	< 0.2	< 0.2	--	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	ug/L	100	100	100	11	< 1	< 1	< 1	--	< 1	2	< 1	< 1	< 1	< 1
Cobalt	ug/L	NC	40	100	100	< 6	< 6	< 6	--	< 6	< 6	< 6	< 6	< 6	< 6
Fluoride	ug/L	4,000	NC	NC	NC	< 1,000	< 1,000	< 1,000	--	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Lead	ug/L	NC	4.0	4.0	39	< 1	< 1	< 1	--	< 1	< 1	< 1	< 1	< 1	< 1
Lithium	ug/L	NC	170	350	440	< 10	< 10	< 10	--	< 10	< 10	26	33	< 10	< 10
Mercury	ug/L	2	2.0	2.0	0.20#	< 0.2	< 0.2	< 0.2	--	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	NC	73	210	3,200	21	24	< 5	--	< 5	< 5	< 5	< 5	11	8
Radium-226	pCi/L	NC	NC	NC	NC	< 0.416	< 0.467	< 0.356	--	< 0.255	< 0.436	< 0.337	< 0.346	< 0.455	< 0.361
Radium-228	pCi/L	NC	NC	NC	NC	< 0.658	< 0.606	< 0.488	--	< 0.518	< 0.563	< 0.589	0.943	< 0.750	< 0.486
Radium-226/228	pCi/L	5	NC	NC	NC	< 0.658	< 0.606	< 0.488	--	< 0.518	< 0.563	0.654	0.945	< 0.750	< 0.486
Selenium	ug/L	50	50	50	5.0	2	13	< 1	--	< 1	< 1	20	4	49	150
Thallium	ug/L	2	2.0	2.0	3.7	< 2	< 2	< 2	--	< 2	< 2	< 2	< 2	< 2	< 2

Notes:
 ug/L = micrograms per liter; mg/L = milligrams per liter.
 pCi/L = picocuries per liter; SU = standard units; pH is a field parameter.
 MCL = Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.
 NC = no criteria; -- = not analyzed.
 * - Michigan Part 201 Generic Drinking Water Cleanup Criteria, December 30, 2013, updated October 12, 2023.
 ** - Secondary Maximum Contaminant Level (SMCL), EPA Secondary Drinking Water Regulations (SDWR) April, 2012.
[^] - Michigan Part 201 Groundwater Surface Water Interface (GSI) Criteria. Hardness-dependent criteria calculated using site-specific hardness of 180 mg CaCO3/L as measured at surface water sample SW-01 collected on April 9, 2018 from the Pigeon River. Chromium GSI criterion based on hexavalent chromium per footnote {H}.
 # - If detected above 0.20 ug/L, further evaluation of low-level mercury may be necessary to evaluate the GSI pathway per Michigan Part 201 and MDEQ policy and procedure 09-014 dated June 20, 2012.
^E - Criterion is the aesthetic drinking water value per footnote {E}.
^{EE} - Criterion is based on the total dissolved solids GSI value per footnote {EE}.
 (1) 40 CFR Part 257 Appendix III Detection Monitoring Constituents and Appendix IV Assessment Monitoring Constituents.
 (2) Sample not valid due to inadequate purge volume.
BOLD value indicates an exceedance of one or more of the listed criteria.
RED value indicates an exceedance of the MCL.
 All metals were analyzed as total unless otherwise specified.

Figures



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.



1540 Eisenhower Place
Ann Arbor, MI 48108-3284
Phone: 734.971.7080
www.trccompanies.com

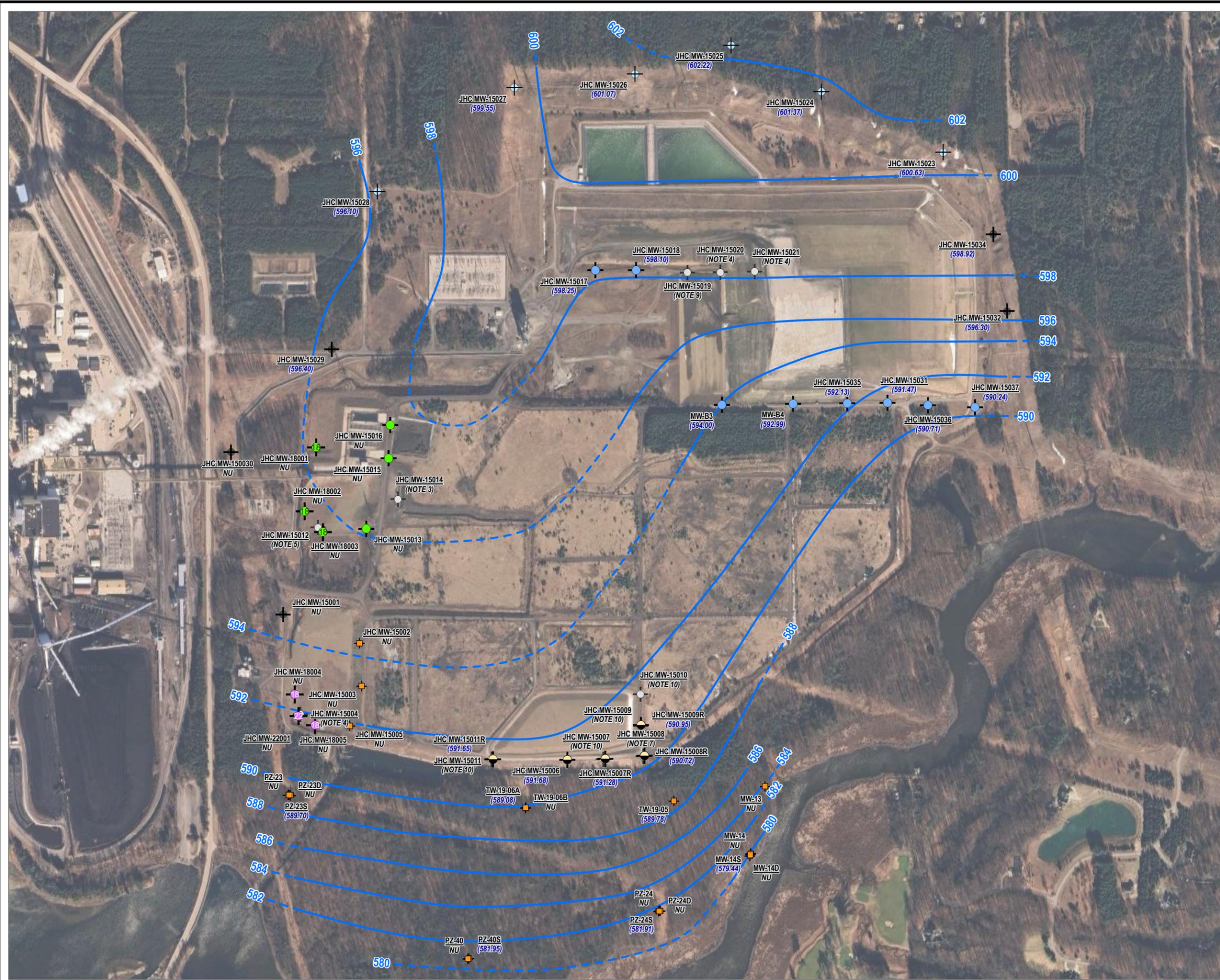
PROJECT:
**CONSUMERS ENERGY COMPANY
JH CAMPBELL POWER PLANT
WEST OLIVE, MICHIGAN**

TITLE:
SITE LOCATION MAP

DRAWN BY:	A. FOJTIK
CHECKED BY:	H. SCHNAIDT
APPROVED BY:	S. HOLMSTROM
DATE:	OCTOBER 2025
PROJ. NO.:	634689.0000
FILE:	T:\1-PROJECTS\Consumers_Energy\464090_JHC\2-APRX\464090_JHC.aprx

FIGURE 1

Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl. Map Rotation: 0
 Saved By: AFOJTIK on 7/9/2025 12:06:02 PM. File Path: T:\HPR\JEC\Consumers_Energy\464090_JHC.aprx. Layout Name: JHC_GWEL_Apr2025



LEGEND

- BACKGROUND MONITORING WELL
- DOWNGRADENT BOTTOM ASH POND 3 N/S MONITORING WELL
- DOWNGRADENT LANDFILL MONITORING WELL
- DOWNGRADENT POND A MONITORING WELL
- MONITORING WELL (STATIC WATER LEVEL ONLY)
- DECOMMISSIONED
- DOWNGRADENT BOTTOM ASH POND 1/2 N/S MONITORING WELL (2018)
- DOWNGRADENT BOTTOM ASH POND 1/2 N/S MONITORING WELL (2022)
- DOWNGRADENT BOTTOM ASH POND 3 N/S MONITORING WELL (2018)
- NATURE AND EXTENT/DOWNGRADENT MONITORING WELLS
- GROUNDWATER ELEVATION CONTOUR (2' INTERVAL, DASHED WHERE INFERRED)
- NU** NOT USED/NOT APPLICABLE

NOTES:

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, 2024.
2. WELL LOCATIONS BASED ON SURVEY DATA THROUGH JUNE 15, 2022.
3. MONITORING WELL DECOMMISSIONED NOVEMBER 13, 2017.
4. MONITORING WELL DECOMMISSIONED JUNE 14, 2018.
5. MONITORING WELL DECOMMISSIONED OCTOBER 10, 2018.
6. JHC-MW-1800X MONITORING WELLS INSTALLED IN DECEMBER 2018.
7. MONITORING WELL DECOMMISSIONED JUNE 24, 2019.
8. JHC-MW-15008R AND TW-19-XX MONITORING WELLS INSTALLED IN JUNE 2019.
9. MONITORING WELLS DECOMMISSIONED MAY 25, 2021.
10. MONITORING WELLS DECOMMISSIONED AND REPLACED JULY 20-22, 2021.
11. JHC-MW-22001 MONITORING WELL INSTALLED MAY 12, 2022.
12. STATIC WATER ELEVATIONS IN NORTH AMERICAN VERTICAL DATUM 1988, NAVD 88.



1:8,400
 1" = 700'



PROJECT: CONSUMERS ENERGY COMPANY JH CAMPBELL POWER PLANT WEST OLIVE, MICHIGAN	
TITLE: GROUNDWATER CONTOUR MAP APRIL 2025	
DRAWN BY: A. FOJTIK	PROJ. NO.: 634689.0000
CHECKED BY: H. SCHNAIDT	FIGURE 3
APPROVED BY: S. HOLMSTROM	
DATE: JULY 2025	
1540 EISENHOWER PLACE ANN ARBOR, MI 48108-3284 PHONE: 734.971.7080	
FILE:	464090_JHC.aprx

Appendix A

Analytical Data

To: JFirlit, JH Campbell Complex

From: EBlaj, T-258

Date: April 30, 2025

Subject: JH CAMPBELL SOLID WASTE DISPOSAL AREA – GROUNDWATER MONITORING
2nd Quarter, 2025 – Background Wells

CC: HDRegister, P22-521
ADSantini, P20-215B-REM

Sarah Holmstrom, Project Manager
TRC Companies, Inc.
1540 Eisenhower Place
Ann Arbor, MI 48108

Chemistry Project: 25-0223

CE Laboratory Services conducted groundwater monitoring at the JH Campbell Solid Waste Disposal Area during the week of 04/14/2025, for the 2nd Quarter requirement, as specified in the Hydrogeological Monitoring Plan for the site. The samples were received for analysis by the Chemistry department on 04/16/2025.

Samples for Radium analysis have been subcontracted to Eurofins/TestAmerica, Inc. and their results are being reported separately. Please note that the subcontracted work is not reported under the CE laboratory scope of accreditation.

The report that follows presents the results of the requested analytical testing; the results apply only to the samples, as received. All samples have been analyzed in accordance with the 2016 TNI Standard and the applicable A2LA accreditation scope for Laboratory Services. Any exceptions to applicable test method criteria and standard compliance are noted in the Case Narrative or flagged with applicable qualifiers in the analytical results section.

Reviewed and approved by:

Emil Blaj
Sr. Technical Analyst
Project Lead



Testing performed in accordance with the A2LA scope of accreditation specified in the listed certificate. The information contained in this report is the sole property of Consumers Energy. It cannot be reproduced except in full, and with consent from Consumers Energy, or the customer for which this report was issued.

CASE NARRATIVE

I. Sample Receipt

All samples were received within hold time and in good conditions; no anomalies were noted on the Sample Log-In Shipment Inspection Form during sample check-in. Identification of all samples included in the work order/project is provided in the sample summary section. Sample preservation upon receipt was verified by the sample custodian and confirmed to meet method requirements.

II. Methodology

Unless otherwise indicated, sample preparation and analysis was performed in accordance with the corresponding test methods from “Methods for the Determination of Inorganic Substances in Environmental Samples (EPA/600/R-93/100); SW-846, “Test Methods for Evaluating Solid Waste – Physical/Chemical Methods”, USEPA (latest revisions), and Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WPCF, 22nd Edition, 2012.

III. Results/Quality Control

Analytical results for this report are presented by laboratory sample ID, container & aliquot number. Results for the field blanks, field duplicates, and percent recoveries of the field matrix spike & matrix spike duplicate samples are included in the results section. Unless specifically noted in the case narrative, all method quality control requirements have been met. If any results are qualified, the corresponding data flags/qualifiers are listed on the last page of the results section. Any additional information on method performance, when applicable, is presented in this section of the case narrative. When data flags are not needed, the qualifiers text box on the last page is left blank, and a statement confirms that no exceptions occurred.

DEFINITIONS / QUALIFIERS

The following qualifiers and/or acronyms are used in the report where applicable:

<u>Acronym</u>	<u>Description</u>
RL	Reporting Limit
ND	Result not detected or below Reporting Limit
NT	Not a TNI Analyte
LCS	Laboratory Control Sample
LRB	Laboratory Reagent Blank (also referred to as Method Blank)
DUP	Duplicate
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
TDL	Target Detection Limit
SM	Standard Methods Compendium

<u>Qualifier</u>	<u>Description</u>
*	Generic data flag, applicable description added in the corresponding notes section
B	The analyte was detected in the LRB at a level which is significant relative to sample result

- D Reporting limit elevated due to dilution
- E Estimated due to result exceeding the linear range of the analyzer
- H The maximum recommended hold time was exceeded
- I Dilution required due to matrix interference; reporting limit elevated
- J Estimated due to result found above MDL but below PQL (or RL)
- K Reporting limit raised due to matrix interference
- M The precision for duplicate analysis was not met; RPD outside acceptance criteria
- N Non-homogeneous sample made analysis questionable
- PI Possible interference may have affected the accuracy of the laboratory result
- Q Matrix Spike or Matrix Spike Duplicate recovery outside acceptance criteria
- R Result confirmed by new sample preparation and reanalysis
- X Other notation required; comment listed in sample notes and/or case narrative

Work Order Sample Summary

Customer Name: JH Campbell Complex
Work Order ID: Q2-2025 JHC Background Wells
Date Received: 4/16/2025
Chemistry Project: 25-0223

<u>Sample #</u>	<u>Field Sample ID</u>	<u>Matrix</u>	<u>Sample Date</u>	<u>Site</u>
25-0223-01	JHC-MW-15023	Groundwater	04/14/2025 15:06	JHC GW Monitoring - Background Wells
25-0223-02	JHC-MW-15024	Groundwater	04/14/2025 17:11	JHC GW Monitoring - Background Wells
25-0223-03	JHC-MW-15025	Groundwater	04/14/2025 18:11	JHC GW Monitoring - Background Wells
25-0223-04	JHC-MW-15026	Groundwater	04/15/2025 19:21	JHC GW Monitoring - Background Wells
25-0223-05	JHC-MW-15027	Groundwater	04/15/2025 10:46	JHC GW Monitoring - Background Wells
25-0223-06	JHC-MW-15028	Groundwater	04/15/2025 12:51	JHC GW Monitoring - Background Wells
25-0223-07	DUP-01	Groundwater	04/14/2025 00:00	JHC GW Monitoring - Background Wells
25-0223-08	FB-01	Water	04/15/2025 13:23	JHC GW Monitoring - Background Wells
25-0223-09	EB-01	Water	04/15/2025 13:35	JHC GW Monitoring - Background Wells
25-0223-10	JHC-MW-15025 Field MS	Groundwater	04/14/2025 18:11	JHC GW Monitoring - Background Wells
25-0223-11	JHC-MW-15025 Field MSD	Groundwater	04/14/2025 18:11	JHC GW Monitoring - Background Wells

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15023**
 Lab Sample ID: 25-0223-01
 Matrix: Groundwater

Laboratory Project: **25-0223**
 Collect Date: 04/14/2025
 Collect Time: 03:06 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0223-01-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0223-01-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	35		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	33		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	19000		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	1		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	ND		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	6680		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	1180		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	2		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	6220		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0223-01-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	9100		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	13100		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C Aliquot #: 25-0223-01-C03-A01 Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	114		mg/L	10.0	04/17/2025	AB25-0417-05



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
Field Sample ID: **JHC-MW-15023**
Lab Sample ID: 25-0223-01
Matrix: Groundwater

Laboratory Project: **25-0223**
Collect Date: 04/14/2025
Collect Time: 03:06 PM

Alkalinity by SM 2320B

Aliquot #: 25-0223-01-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	53900		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Bicarbonate	53900		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Carbonate	ND		ug/L	10000.0	04/17/2025	AB25-0417-04

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15024**
 Lab Sample ID: 25-0223-02
 Matrix: Groundwater

Laboratory Project: **25-0223**
 Collect Date: 04/14/2025
 Collect Time: 05:11 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0223-02-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0223-02-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	17		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	23		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	31300		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	2		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	ND		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	8600		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	3		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	963		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	2		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	14600		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0223-02-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	17000		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	6540		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C Aliquot #: 25-0223-02-C03-A01 Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	164		mg/L	10.0	04/17/2025	AB25-0417-05



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
Field Sample ID: **JHC-MW-15024**
Lab Sample ID: 25-0223-02
Matrix: Groundwater

Laboratory Project: **25-0223**
Collect Date: 04/14/2025
Collect Time: 05:11 PM

Alkalinity by SM 2320B

Aliquot #: 25-0223-02-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	112000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Bicarbonate	112000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Carbonate	ND		ug/L	10000.0	04/17/2025	AB25-0417-04

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15025**
 Lab Sample ID: 25-0223-03
 Matrix: Groundwater

Laboratory Project: **25-0223**
 Collect Date: 04/14/2025
 Collect Time: 06:11 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0223-03-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0223-03-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	7		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	22		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	34200		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	1		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	ND		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	9670		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	1170		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	1		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	20000		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0223-03-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	35200		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	7470		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C Aliquot #: 25-0223-03-C03-A01 Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	208		mg/L	10.0	04/17/2025	AB25-0417-05



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
Field Sample ID: **JHC-MW-15025**
Lab Sample ID: 25-0223-03
Matrix: Groundwater

Laboratory Project: **25-0223**
Collect Date: 04/14/2025
Collect Time: 06:11 PM

Alkalinity by SM 2320B

Aliquot #: 25-0223-03-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	114000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Bicarbonate	114000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Carbonate	ND		ug/L	10000.0	04/17/2025	AB25-0417-04

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15026**
 Lab Sample ID: 25-0223-04
 Matrix: Groundwater

Laboratory Project: **25-0223**
 Collect Date: 04/15/2025
 Collect Time: 07:21 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0223-04-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0223-04-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	8		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	3450		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	35		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	ND		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	ND		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	443		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	3120		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0223-04-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	3360		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	6480		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C Aliquot #: 25-0223-04-C03-A01 Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	37		mg/L	10.0	04/17/2025	AB25-0417-05



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
Field Sample ID: **JHC-MW-15026**
Lab Sample ID: 25-0223-04
Matrix: Groundwater

Laboratory Project: **25-0223**
Collect Date: 04/15/2025
Collect Time: 07:21 PM

Alkalinity by SM 2320B

Aliquot #: 25-0223-04-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	ND		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Bicarbonate	ND		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Carbonate	ND		ug/L	10000.0	04/17/2025	AB25-0417-04

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15027**
 Lab Sample ID: 25-0223-05
 Matrix: Groundwater

Laboratory Project: **25-0223**
 Collect Date: 04/15/2025
 Collect Time: 10:46 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0223-05-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0223-05-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	9		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	22		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	25400		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	ND		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	6040		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	413		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	2030		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0223-05-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	1800		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	5700		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C Aliquot #: 25-0223-05-C03-A01 Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	123		mg/L	10.0	04/17/2025	AB25-0417-05



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
Field Sample ID: **JHC-MW-15027**
Lab Sample ID: 25-0223-05
Matrix: Groundwater

Laboratory Project: **25-0223**
Collect Date: 04/15/2025
Collect Time: 10:46 AM

Alkalinity by SM 2320B

Aliquot #: 25-0223-05-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	73900		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Bicarbonate	73900		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Carbonate	ND		ug/L	10000.0	04/17/2025	AB25-0417-04

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15028**
 Lab Sample ID: 25-0223-06
 Matrix: Groundwater

Laboratory Project: **25-0223**
 Collect Date: 04/15/2025
 Collect Time: 12:51 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0223-06-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0223-06-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	16400		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	39		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	ND		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	3870		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	300		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	1020		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0223-06-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	1050		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	4670		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C Aliquot #: 25-0223-06-C03-A01 Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	66		mg/L	10.0	04/17/2025	AB25-0417-05



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
Field Sample ID: **JHC-MW-15028**
Lab Sample ID: 25-0223-06
Matrix: Groundwater

Laboratory Project: **25-0223**
Collect Date: 04/15/2025
Collect Time: 12:51 PM

Alkalinity by SM 2320B

Aliquot #: 25-0223-06-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	53900		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Bicarbonate	53900		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Carbonate	ND		ug/L	10000.0	04/17/2025	AB25-0417-04

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **DUP-01**
 Lab Sample ID: 25-0223-07
 Matrix: Groundwater

Laboratory Project: **25-0223**
 Collect Date: 04/14/2025
 Collect Time: 12:00 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0223-07-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0223-07-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	35		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	32		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	19400		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	ND		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	7020		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	1210		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	2		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	6350		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0223-07-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	8950		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	12800		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C Aliquot #: 25-0223-07-C03-A01 Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	117		mg/L	10.0	04/17/2025	AB25-0417-05



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
Field Sample ID: **DUP-01**
Lab Sample ID: 25-0223-07
Matrix: Groundwater

Laboratory Project: **25-0223**
Collect Date: 04/14/2025
Collect Time: 12:00 AM

Alkalinity by SM 2320B

Aliquot #: 25-0223-07-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	55400		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Bicarbonate	55400		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Carbonate	ND		ug/L	10000.0	04/17/2025	AB25-0417-04

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **FB-01**
 Lab Sample ID: 25-0223-08
 Matrix: Water

Laboratory Project: **25-0223**
 Collect Date: 04/15/2025
 Collect Time: 01:23 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0223-08-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0223-08-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	ND		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	ND		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	ND		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	ND		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	ND		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0223-08-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	ND		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C Aliquot #: 25-0223-08-C03-A01 Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	ND		mg/L	10.0	04/17/2025	AB25-0417-05

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **EB-01**
 Lab Sample ID: 25-0223-09
 Matrix: Water

Laboratory Project: **25-0223**
 Collect Date: 04/15/2025
 Collect Time: 01:35 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0223-09-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0223-09-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	ND		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	ND		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	ND		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	ND		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	ND		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0223-09-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	ND		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C Aliquot #: 25-0223-09-C03-A01 Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	ND		mg/L	10.0	04/17/2025	AB25-0417-05

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15025 Field MS**
 Lab Sample ID: 25-0223-10
 Matrix: Groundwater

Laboratory Project: **25-0223**
 Collect Date: 04/14/2025
 Collect Time: 06:11 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0223-10-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	98.0		%	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0223-10-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	105		%	1.0	04/21/2025	AB25-0421-06
Arsenic	106		%	1.0	04/21/2025	AB25-0421-06
Barium	102		%	5.0	04/21/2025	AB25-0421-06
Beryllium	103		%	1.0	04/21/2025	AB25-0421-06
Boron	106		%	20.0	04/21/2025	AB25-0421-06
Cadmium	108		%	0.2	04/21/2025	AB25-0421-06
Calcium	102		%	1000.0	04/21/2025	AB25-0421-06
Chromium	108		%	1.0	04/21/2025	AB25-0421-06
Cobalt	106		%	6.0	04/21/2025	AB25-0421-06
Copper	100		%	1.0	04/21/2025	AB25-0421-06
Iron	107		%	20.0	04/21/2025	AB25-0421-06
Lead	100		%	1.0	04/21/2025	AB25-0421-06
Lithium	104		%	10.0	04/21/2025	AB25-0421-06
Magnesium	106		%	1000.0	04/21/2025	AB25-0421-06
Molybdenum	106		%	5.0	04/21/2025	AB25-0421-06
Nickel	102		%	2.0	04/21/2025	AB25-0421-06
Potassium	103		%	100.0	04/21/2025	AB25-0421-06
Selenium	105		%	1.0	04/21/2025	AB25-0421-06
Silver	106		%	0.2	04/21/2025	AB25-0421-06
Sodium	111		%	1000.0	04/21/2025	AB25-0421-06
Thallium	103		%	2.0	04/21/2025	AB25-0421-06
Vanadium	109		%	2.0	04/21/2025	AB25-0421-06
Zinc	108		%	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0223-10-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	107		%	1000.0	04/18/2025	AB25-0417-01
Fluoride	97		%	1000.0	04/18/2025	AB25-0417-01
Sulfate	97		%	1000.0	04/18/2025	AB25-0417-01

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15025 Field MSD**
 Lab Sample ID: 25-0223-11
 Matrix: Groundwater

Laboratory Project: **25-0223**
 Collect Date: 04/14/2025
 Collect Time: 06:11 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0223-11-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	100.0		%	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0223-11-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	106		%	1.0	04/21/2025	AB25-0421-06
Arsenic	106		%	1.0	04/21/2025	AB25-0421-06
Barium	105		%	5.0	04/21/2025	AB25-0421-06
Beryllium	101		%	1.0	04/21/2025	AB25-0421-06
Boron	105		%	20.0	04/21/2025	AB25-0421-06
Cadmium	111		%	0.2	04/21/2025	AB25-0421-06
Calcium	102		%	1000.0	04/21/2025	AB25-0421-06
Chromium	107		%	1.0	04/21/2025	AB25-0421-06
Cobalt	106		%	6.0	04/21/2025	AB25-0421-06
Copper	101		%	1.0	04/21/2025	AB25-0421-06
Iron	106		%	20.0	04/21/2025	AB25-0421-06
Lead	101		%	1.0	04/21/2025	AB25-0421-06
Lithium	100		%	10.0	04/21/2025	AB25-0421-06
Magnesium	105		%	1000.0	04/21/2025	AB25-0421-06
Molybdenum	109		%	5.0	04/21/2025	AB25-0421-06
Nickel	101		%	2.0	04/21/2025	AB25-0421-06
Potassium	100		%	100.0	04/21/2025	AB25-0421-06
Selenium	104		%	1.0	04/21/2025	AB25-0421-06
Silver	106		%	0.2	04/21/2025	AB25-0421-06
Sodium	108		%	1000.0	04/21/2025	AB25-0421-06
Thallium	104		%	2.0	04/21/2025	AB25-0421-06
Vanadium	112		%	2.0	04/21/2025	AB25-0421-06
Zinc	104		%	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0223-11-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	107		%	1000.0	04/18/2025	AB25-0417-01
Fluoride	98		%	1000.0	04/18/2025	AB25-0417-01
Sulfate	97		%	1000.0	04/18/2025	AB25-0417-01



Analytical Report

Report Date: 04/30/25

Laboratory Services
A CENTURY OF EXCELLENCE

Data Qualifiers	Exception Summary
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No exceptions occurred.

TITLE: SAMPLE LOG-IN – SHIPMENT INSPECTION FORM

Project Number: 25-0223 Inspection Date: 4.16.25 Inspection By: UMO
4.15.25
UMO 04.18.25

Sample Origin/Project Name: JHC Q2-2025 Background wells

Shipment Delivered By: Enter the type of shipment carrier.

Inter-Company Mail _____ FedEx _____ UPS _____ USPS _____
Tracking Number: _____ Other/Carry In (whom) UMO

Shipping Containers: Enter the type and number of shipping containers received.

Cooler Cardboard Box _____ Custom Case _____ Envelope/Mailer _____
Loose/Unpackaged Containers _____ Other _____

Condition of Shipment: Enter the as-received condition of the shipment container.

Damaged Shipment Observed: None Dented _____ Leaking _____
Other _____

Shipment Security: Enter if any of the shipping containers were opened before receipt.

Shipping Containers Received: Opened _____ Sealed N/A _____

Enclosed Documents: Enter the type of documents enclosed with the shipment.

CoC Work Request _____ Air Data Sheet _____ Other _____

Temperature of Containers: Measure the temperature of several sample containers.

As-Received Temperature Range 0-9-3.3 °C Samples Received on Ice: Yes No _____

M&TE # and Expiration LS027723 / 06.27.25

Number and Type of Containers: Enter the type and total number of sample containers received.

Container Type	Water	Soil	Other	Broken	Leaking
VOA (40mL or 60mL)	<u>14</u>	_____	_____	_____	_____
Quart/Liter (g/p)	<u>18</u>	_____	_____	_____	_____
9-oz (amber glass jar)	_____	_____	_____	_____	_____
2-oz (amber glass)	_____	_____	_____	_____	_____
125 mL (plastic)	<u>22</u>	_____	_____	_____	_____
24 mL vial (glass)	_____	_____	_____	_____	_____
250 mL (plastic)	<u>9</u>	_____	_____	_____	_____
Other	_____	_____	_____	_____	_____

All sample pH meeting criteria? Yes No _____ N/A _____ pH paper lot # 210224 Exp. Date 12.1.26

Indicate if an Exception Report (Page 2 of 2) is needed: Yes _____ No

To: JFirlit, JH Campbell Complex

From: EBlaj, T-258

Date: April 30, 2025

Subject: JH CAMPBELL SOLID WASTE DISPOSAL AREA – GROUNDWATER MONITORING
2nd Quarter, 2025 – Pond A Wells

CC: HDRegister, P22-521
ADSantini, P20-215B-REM

Sarah Holmstrom, Project Manager
TRC Companies, Inc.
1540 Eisenhower Place
Ann Arbor, MI 48108

Chemistry Project: 25-0224

CE Laboratory Services conducted groundwater monitoring at the JH Campbell Solid Waste Disposal Area during the week of 04/14/2025, for the 2nd Quarter requirement, as specified in the Hydrogeological Monitoring Plan for the site. The samples were received for analysis by the Chemistry department on 04/16/2025.

Samples for Radium analysis have been subcontracted to Eurofins/TestAmerica, Inc. and their results are being reported separately. Please note that the subcontracted work is not reported under the CE laboratory scope of accreditation.

The report that follows presents the results of the requested analytical testing; the results apply only to the samples, as received. All samples have been analyzed in accordance with the 2016 TNI Standard and the applicable A2LA accreditation scope for Laboratory Services. Any exceptions to applicable test method criteria and standard compliance are noted in the Case Narrative or flagged with applicable qualifiers in the analytical results section.

Reviewed and approved by:

Emil Blaj
Sr. Technical Analyst
Project Lead



Testing performed in accordance with the A2LA scope of accreditation specified in the listed certificate. The information contained in this report is the sole property of Consumers Energy. It cannot be reproduced except in full, and with consent from Consumers Energy, or the customer for which this report was issued.

CASE NARRATIVE

I. Sample Receipt

All samples were received within hold time and in good conditions; no anomalies were noted on the Sample Log-In Shipment Inspection Form during sample check-in. Identification of all samples included in the work order/project is provided in the sample summary section. Sample preservation upon receipt was verified by the sample custodian and confirmed to meet method requirements.

II. Methodology

Unless otherwise indicated, sample preparation and analysis was performed in accordance with the corresponding test methods from “Methods for the Determination of Inorganic Substances in Environmental Samples (EPA/600/R-93/100); SW-846, “Test Methods for Evaluating Solid Waste – Physical/Chemical Methods”, USEPA (latest revisions), and Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WPCF, 22nd Edition, 2012.

III. Results/Quality Control

Analytical results for this report are presented by laboratory sample ID, container & aliquot number. Results for the field blanks, field duplicates, and percent recoveries of the field matrix spike & matrix spike duplicate samples are included in the results section. Unless specifically noted in the case narrative, all method quality control requirements have been met. If any results are qualified, the corresponding data flags/qualifiers are listed on the last page of the results section. Any additional information on method performance, when applicable, is presented in this section of the case narrative. When data flags are not needed, the qualifiers text box on the last page is left blank, and a statement confirms that no exceptions occurred.

DEFINITIONS / QUALIFIERS

The following qualifiers and/or acronyms are used in the report where applicable:

<u>Acronym</u>	<u>Description</u>
RL	Reporting Limit
ND	Result not detected or below Reporting Limit
NT	Not a TNI Analyte
LCS	Laboratory Control Sample
LRB	Laboratory Reagent Blank (also referred to as Method Blank)
DUP	Duplicate
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
TDL	Target Detection Limit
SM	Standard Methods Compendium

<u>Qualifier</u>	<u>Description</u>
*	Generic data flag, applicable description added in the corresponding notes section
B	The analyte was detected in the LRB at a level which is significant relative to sample result

D	Reporting limit elevated due to dilution
E	Estimated due to result exceeding the linear range of the analyzer
H	The maximum recommended hold time was exceeded
I	Dilution required due to matrix interference; reporting limit elevated
J	Estimated due to result found above MDL but below PQL (or RL)
K	Reporting limit raised due to matrix interference
M	The precision for duplicate analysis was not met; RPD outside acceptance criteria
N	Non-homogeneous sample made analysis questionable
PI	Possible interference may have affected the accuracy of the laboratory result
Q	Matrix Spike or Matrix Spike Duplicate recovery outside acceptance criteria
R	Result confirmed by new sample preparation and reanalysis
X	Other notation required; comment listed in sample notes and/or case narrative

Customer Name: JH Campbell Complex
Work Order ID: Q2-2025 Pond A Wells
Date Received: 4/16/2025
Chemistry Project: 25-0224

<u>Sample #</u>	<u>Field Sample ID</u>	<u>Matrix</u>	<u>Sample Date</u>	<u>Site</u>
25-0224-01	JHC-MW-15006	Groundwater	04/14/2025 17:36	JHC GW Monitoring - Pond A Wells
25-0224-02	JHC-MW-15007R	Groundwater	04/14/2025 16:41	JHC GW Monitoring - Pond A Wells
25-0224-03	JHC-MW-15008R	Groundwater	04/14/2025 15:16	JHC GW Monitoring - Pond A Wells
25-0224-04	JHC-MW-15009R	Groundwater	04/14/2025 14:01	JHC GW Monitoring - Pond A Wells
25-0224-05	JHC-MW-15011R	Groundwater	04/14/2025 18:16	JHC GW Monitoring - Pond A Wells
25-0224-06	DUP-02	Groundwater	04/14/2025 00:00	JHC GW Monitoring - Pond A Wells
25-0224-07	FB-02	Water	04/14/2025 18:43	JHC GW Monitoring - Pond A Wells
25-0224-08	EB-02	Water	04/14/2025 18:35	JHC GW Monitoring - Pond A Wells
25-0224-09	JHC-MW-15007R MS	Groundwater	04/14/2025 16:41	JHC GW Monitoring - Pond A Wells
25-0224-10	JHC-MW-15007R MSD	Groundwater	04/14/2025 16:41	JHC GW Monitoring - Pond A Wells

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **JHC-MW-15006**
 Lab Sample ID: 25-0224-01
 Matrix: Groundwater

Laboratory Project: **25-0224**
 Collect Date: 04/14/2025
 Collect Time: 05:36 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0224-01-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0224-01-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	11		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	171		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	600		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	74400		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	1		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	1		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	16		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	40700		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	15		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	6140		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	23		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	13800		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	16		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0224-01-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	11800		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	100000		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C Aliquot #: 25-0224-01-C03-A01 Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	418		mg/L	10.0	04/16/2025	AB25-0417-03



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
Field Sample ID: **JHC-MW-15006**
Lab Sample ID: 25-0224-01
Matrix: Groundwater

Laboratory Project: **25-0224**
Collect Date: 04/14/2025
Collect Time: 05:36 PM

Alkalinity by SM 2320B

Aliquot #: 25-0224-01-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	262000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Bicarbonate	262000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Carbonate	ND		ug/L	10000.0	04/17/2025	AB25-0417-04

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **JHC-MW-15007R**
 Lab Sample ID: 25-0224-02
 Matrix: Groundwater

Laboratory Project: **25-0224**
 Collect Date: 04/14/2025
 Collect Time: 04:41 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0224-02-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0224-02-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	6		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	249		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	1320		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	71900		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	1		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	16		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	38300		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	23		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	3970		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	3		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	13200		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	13		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0224-02-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	14500		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	87200		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C Aliquot #: 25-0224-02-C03-A01 Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	415		mg/L	10.0	04/16/2025	AB25-0417-03



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
Field Sample ID: **JHC-MW-15007R**
Lab Sample ID: 25-0224-02
Matrix: Groundwater

Laboratory Project: **25-0224**
Collect Date: 04/14/2025
Collect Time: 04:41 PM

Alkalinity by SM 2320B

Aliquot #: 25-0224-02-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	257000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Bicarbonate	257000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Carbonate	ND		ug/L	10000.0	04/17/2025	AB25-0417-04

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **JHC-MW-15008R**
 Lab Sample ID: 25-0224-03
 Matrix: Groundwater

Laboratory Project: **25-0224**
 Collect Date: 04/14/2025
 Collect Time: 03:16 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0224-03-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0224-03-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	1		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	150		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	1320		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	80400		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	1		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	21		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	22		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	39400		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	28		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	2430		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	14		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	15600		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0224-03-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	14500		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	117000		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C

Aliquot #: 25-0224-03-C03-A01

Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	452		mg/L	10.0	04/16/2025	AB25-0417-03



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
Field Sample ID: **JHC-MW-15008R**
Lab Sample ID: 25-0224-03
Matrix: Groundwater

Laboratory Project: **25-0224**
Collect Date: 04/14/2025
Collect Time: 03:16 PM

Alkalinity by SM 2320B

Aliquot #: 25-0224-03-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	246000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Bicarbonate	246000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Carbonate	ND		ug/L	10000.0	04/17/2025	AB25-0417-04

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **JHC-MW-15009R**
 Lab Sample ID: 25-0224-04
 Matrix: Groundwater

Laboratory Project: **25-0224**
 Collect Date: 04/14/2025
 Collect Time: 02:01 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0224-04-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0224-04-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	274		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	2840		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	72600		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	15		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	15400		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	12		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	4320		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	76		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	10200		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	8		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0224-04-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	12500		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	43100		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C

Aliquot #: 25-0224-04-C03-A01

Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	376		mg/L	10.0	04/16/2025	AB25-0417-03



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
Field Sample ID: **JHC-MW-15009R**
Lab Sample ID: 25-0224-04
Matrix: Groundwater

Laboratory Project: **25-0224**
Collect Date: 04/14/2025
Collect Time: 02:01 PM

Alkalinity by SM 2320B

Aliquot #: 25-0224-04-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	206000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Bicarbonate	206000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Carbonate	ND		ug/L	10000.0	04/17/2025	AB25-0417-04

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **JHC-MW-15011R**
 Lab Sample ID: 25-0224-05
 Matrix: Groundwater

Laboratory Project: **25-0224**
 Collect Date: 04/14/2025
 Collect Time: 06:16 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0224-05-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0224-05-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	1		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	4		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	387		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	4190		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	0.4		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	71400		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	3		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	22		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	16800		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	11		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	2		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	4110		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	140		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	11300		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	14		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0224-05-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	5610		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	94400		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C

Aliquot #: 25-0224-05-C03-A01

Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	343		mg/L	10.0	04/16/2025	AB25-0417-03



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
Field Sample ID: **JHC-MW-15011R**
Lab Sample ID: 25-0224-05
Matrix: Groundwater

Laboratory Project: **25-0224**
Collect Date: 04/14/2025
Collect Time: 06:16 PM

Alkalinity by SM 2320B

Aliquot #: 25-0224-05-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	169000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Bicarbonate	169000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Carbonate	ND		ug/L	10000.0	04/17/2025	AB25-0417-04

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **DUP-02**
 Lab Sample ID: 25-0224-06
 Matrix: Groundwater

Laboratory Project: **25-0224**
 Collect Date: 04/14/2025
 Collect Time: 12:00 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0224-06-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0224-06-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	266		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	2830		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	71700		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	1		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	15		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	15100		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	11		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	4300		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	73		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	10100		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	8		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0224-06-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	12400		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	42700		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C Aliquot #: 25-0224-06-C03-A01 Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	386		mg/L	10.0	04/16/2025	AB25-0417-03



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
Field Sample ID: **DUP-02**
Lab Sample ID: 25-0224-06
Matrix: Groundwater

Laboratory Project: **25-0224**
Collect Date: 04/14/2025
Collect Time: 12:00 AM

Alkalinity by SM 2320B

Aliquot #: 25-0224-06-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	205000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Bicarbonate	205000		ug/L	10000.0	04/17/2025	AB25-0417-04
Alkalinity Carbonate	ND		ug/L	10000.0	04/17/2025	AB25-0417-04

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **FB-02**
 Lab Sample ID: 25-0224-07
 Matrix: Water

Laboratory Project: **25-0224**
 Collect Date: 04/14/2025
 Collect Time: 06:43 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0224-07-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0224-07-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	ND		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	ND		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	ND		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	ND		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	ND		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0224-07-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	ND		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C Aliquot #: 25-0224-07-C03-A01 Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	ND		mg/L	10.0	04/16/2025	AB25-0417-03

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **EB-02**
 Lab Sample ID: 25-0224-08
 Matrix: Water

Laboratory Project: **25-0224**
 Collect Date: 04/14/2025
 Collect Time: 06:35 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0224-08-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0224-08-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Arsenic	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Barium	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Beryllium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Boron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Cadmium	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Calcium	ND		ug/L	1000.0	04/21/2025	AB25-0421-06
Chromium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Cobalt	ND		ug/L	6.0	04/21/2025	AB25-0421-06
Copper	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Iron	ND		ug/L	20.0	04/21/2025	AB25-0421-06
Lead	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Lithium	ND		ug/L	10.0	04/21/2025	AB25-0421-06
Magnesium	ND		ug/L	1000.0	04/21/2025	AB25-0421-06
Molybdenum	ND		ug/L	5.0	04/21/2025	AB25-0421-06
Nickel	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Potassium	ND		ug/L	100.0	04/21/2025	AB25-0421-06
Selenium	ND		ug/L	1.0	04/21/2025	AB25-0421-06
Silver	ND		ug/L	0.2	04/21/2025	AB25-0421-06
Sodium	ND		ug/L	1000.0	04/21/2025	AB25-0421-06
Thallium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Vanadium	ND		ug/L	2.0	04/21/2025	AB25-0421-06
Zinc	ND		ug/L	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0224-08-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Fluoride	ND		ug/L	1000.0	04/18/2025	AB25-0417-01
Sulfate	ND		ug/L	1000.0	04/18/2025	AB25-0417-01

Total Dissolved Solids by SM 2540C

Aliquot #: 25-0224-08-C03-A01

Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	ND		mg/L	10.0	04/16/2025	AB25-0417-03

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **JHC-MW-15007R MS**
 Lab Sample ID: 25-0224-09
 Matrix: Groundwater

Laboratory Project: **25-0224**
 Collect Date: 04/14/2025
 Collect Time: 04:41 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0224-09-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	92.0		%	0.2	04/21/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0224-09-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	105		%	1.0	04/21/2025	AB25-0421-06
Arsenic	106		%	1.0	04/21/2025	AB25-0421-06
Barium	97		%	5.0	04/21/2025	AB25-0421-06
Beryllium	107		%	1.0	04/21/2025	AB25-0421-06
Boron	116		%	20.0	04/21/2025	AB25-0421-06
Cadmium	108		%	0.2	04/21/2025	AB25-0421-06
Calcium	105		%	1000.0	04/21/2025	AB25-0421-06
Chromium	110		%	1.0	04/21/2025	AB25-0421-06
Cobalt	109		%	6.0	04/21/2025	AB25-0421-06
Copper	100		%	1.0	04/21/2025	AB25-0421-06
Iron	106		%	20.0	04/21/2025	AB25-0421-06
Lead	100		%	1.0	04/21/2025	AB25-0421-06
Lithium	113		%	10.0	04/21/2025	AB25-0421-06
Magnesium	108		%	1000.0	04/21/2025	AB25-0421-06
Molybdenum	109		%	5.0	04/21/2025	AB25-0421-06
Nickel	101		%	2.0	04/21/2025	AB25-0421-06
Potassium	105		%	100.0	04/21/2025	AB25-0421-06
Selenium	107		%	1.0	04/21/2025	AB25-0421-06
Silver	107		%	0.2	04/21/2025	AB25-0421-06
Sodium	108		%	1000.0	04/21/2025	AB25-0421-06
Thallium	103		%	2.0	04/21/2025	AB25-0421-06
Vanadium	112		%	2.0	04/21/2025	AB25-0421-06
Zinc	105		%	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0224-09-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	98		%	1000.0	04/18/2025	AB25-0417-01
Fluoride	94		%	1000.0	04/18/2025	AB25-0417-01
Sulfate	99		%	1000.0	04/18/2025	AB25-0417-01

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **JHC-MW-15007R MSD**
 Lab Sample ID: 25-0224-10
 Matrix: Groundwater

Laboratory Project: **25-0224**
 Collect Date: 04/14/2025
 Collect Time: 04:41 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0224-10-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	99.0		%	0.2	04/22/2025	AB25-0421-11

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0224-10-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	104		%	1.0	04/21/2025	AB25-0421-06
Arsenic	105		%	1.0	04/21/2025	AB25-0421-06
Barium	94		%	5.0	04/21/2025	AB25-0421-06
Beryllium	106		%	1.0	04/21/2025	AB25-0421-06
Boron	106		%	20.0	04/21/2025	AB25-0421-06
Cadmium	106		%	0.2	04/21/2025	AB25-0421-06
Calcium	102		%	1000.0	04/21/2025	AB25-0421-06
Chromium	111		%	1.0	04/21/2025	AB25-0421-06
Cobalt	108		%	6.0	04/21/2025	AB25-0421-06
Copper	99		%	1.0	04/21/2025	AB25-0421-06
Iron	103		%	20.0	04/21/2025	AB25-0421-06
Lead	102		%	1.0	04/21/2025	AB25-0421-06
Lithium	111		%	10.0	04/21/2025	AB25-0421-06
Magnesium	109		%	1000.0	04/21/2025	AB25-0421-06
Molybdenum	107		%	5.0	04/21/2025	AB25-0421-06
Nickel	101		%	2.0	04/21/2025	AB25-0421-06
Potassium	106		%	100.0	04/21/2025	AB25-0421-06
Selenium	106		%	1.0	04/21/2025	AB25-0421-06
Silver	105		%	0.2	04/21/2025	AB25-0421-06
Sodium	108		%	1000.0	04/21/2025	AB25-0421-06
Thallium	106		%	2.0	04/21/2025	AB25-0421-06
Vanadium	113		%	2.0	04/21/2025	AB25-0421-06
Zinc	103		%	10.0	04/21/2025	AB25-0421-06

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0224-10-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	102		%	1000.0	04/18/2025	AB25-0417-01
Fluoride	98		%	1000.0	04/18/2025	AB25-0417-01
Sulfate	104		%	1000.0	04/18/2025	AB25-0417-01



Analytical Report

Report Date: 04/30/25

Laboratory Services
A CENTURY OF EXCELLENCE

Data Qualifiers	Exception Summary
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No exceptions occurred.

TITLE: SAMPLE LOG-IN – SHIPMENT INSPECTION FORM

Project Number: 25-6224 Inspection Date: 4.16.25 Inspection By: LMO

Sample Origin/Project Name: JHC Q2-2025 Pond A Wells

Shipment Delivered By: Enter the type of shipment carrier.

Inter-Company Mail _____ FedEx _____ UPS _____ USPS _____

Tracking Number: _____ Other/Carry In (whom) CLE

Shipping Containers: Enter the type and number of shipping containers received.

Cooler Cardboard Box _____ Custom Case _____ Envelope/Mailer _____

Loose/Unpackaged Containers _____ Other _____

Condition of Shipment: Enter the as-received condition of the shipment container.

Damaged Shipment Observed: None Dented _____ Leaking _____

Other _____

Shipment Security: Enter if any of the shipping containers were opened before receipt.

Shipping Containers Received: Opened _____ Sealed N/A _____

Enclosed Documents: Enter the type of documents enclosed with the shipment.

CoC Work Request _____ Air Data Sheet _____ Other _____

Temperature of Containers: Measure the temperature of several sample containers.

As-Received Temperature Range 0.5-3.7 °C Samples Received on Ice: Yes No _____

M&TE # and Expiration LS 028757 / 1.16.26

Number and Type of Containers: Enter the type and total number of sample containers received.

Container Type	Water	Soil	Other	Broken	Leaking
VOA (40mL or 60mL)	<u>12</u>	_____	_____	_____	_____
Quart Liter (g/p)	<u>16</u>	_____	_____	_____	_____
9-oz (amber glass jar)	_____	_____	_____	_____	_____
2-oz (amber glass)	_____	_____	_____	_____	_____
125 mL (plastic)	<u>20</u>	_____	_____	_____	_____
24 mL vial (glass)	_____	_____	_____	_____	_____
250 mL (plastic)	<u>8</u>	_____	_____	_____	_____
Other	_____	_____	_____	_____	_____

All sample pH meeting criteria? Yes No _____ N/A _____ pH paper lot # 210224 Exp. Date 12.01.26

Indicate if an Exception Report (Page 2 of 2) is needed: Yes _____ No

CHAIN OF CUSTODY



CONSUMERS ENERGY COMPANY – LABORATORY SERVICES

135 WEST TRAIL ST., JACKSON, MI 49201 • (517) 788-1251

Page 1 of 1

SAMPLING SITE / CUSTOMER: JHC Q2-2025 Pond A Wells			PROJECT NUMBER: 25-0224		SAP CC or WO#: REQUESTER: Bethany Swanberg		ANALYSIS REQUESTED (Attach List if More Space is Needed)						QA REQUIREMENT: <input type="checkbox"/> NPDES <input checked="" type="checkbox"/> TNI <input type="checkbox"/> ISO 17025 <input type="checkbox"/> 10 CFR 50 APP. B <input type="checkbox"/> INTERNAL INFO <input type="checkbox"/> OTHER _____ REMARKS																							
SAMPLING TEAM: C. Ehler			TURNAROUND TIME REQUIRED: <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 3 DAYS <input type="checkbox"/> STANDARD <input checked="" type="checkbox"/> OTHER _____						<table border="1" style="width: 100%; text-align: center;"> <tr> <th rowspan="2">Total #</th> <th colspan="6">PRESERVATIVE</th> <th rowspan="2">Total Metals</th> <th rowspan="2">Anions</th> <th rowspan="2">TDS</th> <th rowspan="2">Alkalinity</th> <th rowspan="2">Radium 226</th> <th rowspan="2">Radium 228</th> </tr> <tr> <th>None</th> <th>HNO₃</th> <th>H₂SO₄</th> <th>NaOH</th> <th>HCl</th> <th>MeOH</th> <th>Other</th> </tr> </table>						Total #	PRESERVATIVE						Total Metals	Anions	TDS	Alkalinity	Radium 226	Radium 228	None	HNO ₃	H ₂ SO ₄	NaOH	HCl	MeOH	Other		
Total #	PRESERVATIVE						Total Metals	Anions								TDS	Alkalinity	Radium 226	Radium 228																	
	None	HNO ₃	H ₂ SO ₄	NaOH	HCl	MeOH									Other																					
SEND REPORT TO: Joseph Firlit		email:		phone:		MATRIX CODES: GW = Groundwater OX = Other WW = Wastewater SL = Sludge W = Water / Aqueous Liquid A = Air S = Soil / General Solid WP = Wipe O = Oil WT = General Waste																														
COPY TO: JR Register		CONTAINERS		<table border="1" style="width: 100%; text-align: center;"> <tr> <th rowspan="2">LAB SAMPLE ID</th> <th colspan="2">SAMPLE COLLECTION</th> <th rowspan="2">MATRIX</th> <th rowspan="2">FIELD SAMPLE ID / LOCATION</th> <th rowspan="2">TOTAL #</th> <th colspan="6">PRESERVATIVE</th> <th rowspan="2">Total Metals</th> <th rowspan="2">Anions</th> <th rowspan="2">TDS</th> <th rowspan="2">Alkalinity</th> <th rowspan="2">Radium 226</th> <th rowspan="2">Radium 228</th> </tr> <tr> <th>DATE</th> <th>TIME</th> <th>None</th> <th>HNO₃</th> <th>H₂SO₄</th> <th>NaOH</th> <th>HCl</th> <th>MeOH</th> <th>Other</th> </tr> </table>								LAB SAMPLE ID	SAMPLE COLLECTION		MATRIX	FIELD SAMPLE ID / LOCATION	TOTAL #	PRESERVATIVE						Total Metals	Anions	TDS	Alkalinity	Radium 226	Radium 228	DATE	TIME	None	HNO ₃	H ₂ SO ₄	NaOH	HCl
LAB SAMPLE ID	SAMPLE COLLECTION		MATRIX							FIELD SAMPLE ID / LOCATION	TOTAL #		PRESERVATIVE						Total Metals	Anions	TDS	Alkalinity	Radium 226							Radium 228						
	DATE	TIME		None	HNO ₃	H ₂ SO ₄	NaOH	HCl	MeOH			Other																								

RELINQUISHED BY: <i>C. Ehler</i>		DATE/TIME: 4-16-25 1153		RECEIVED BY: <i>[Signature]</i>		COMMENTS:					
RELINQUISHED BY:		DATE/TIME:		RECEIVED BY:		Received on Ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No M&TE #: LS028757 Temperature: 0.5-3.7 °C Cal. Due Date: 1-16-26					

To: JFirlit, JH Campbell Complex

From: EBlaj, T-258

Date: April 30, 2025

Subject: JH CAMPBELL SOLID WASTE DISPOSAL AREA – GROUNDWATER MONITORING
2nd Quarter, 2025 – Supplemental and GSI Wells

CC: HDRegister, P22-521
ADSantini, P20-215B-REM

Sarah Holmstrom, Project Manager
TRC Companies, Inc.
1540 Eisenhower Place
Ann Arbor, MI 48108

Chemistry Project: 25-0226

CE Laboratory Services conducted groundwater monitoring at the JH Campbell Solid Waste Disposal Area during the week of 04/14/2025, for the 2nd Quarter requirement, as specified in the Hydrogeological Monitoring Plan for the site. Samples were not collected from MW-13; the well was dry. All other samples were received for analysis by the Chemistry department on 04/16/2025.

Samples for Radium analysis have been subcontracted to Eurofins/TestAmerica, Inc. and their results are being reported separately. Please note that the subcontracted work is not reported under the CE laboratory scope of accreditation.

The report that follows presents the results of the requested analytical testing; the results apply only to the samples, as received. All samples have been analyzed in accordance with the 2016 TNI Standard and the applicable A2LA accreditation scope for Laboratory Services. Any exceptions to applicable test method criteria and standard compliance are noted in the Case Narrative or flagged with applicable qualifiers in the analytical results section.

Reviewed and approved by:

Emil Blaj
Sr. Technical Analyst
Project Lead



Testing performed in accordance with the A2LA scope of accreditation specified in the listed certificate. The information contained in this report is the sole property of Consumers Energy. It cannot be reproduced except in full, and with consent from Consumers Energy, or the customer for which this report was issued.

CASE NARRATIVE

I. Sample Receipt

All samples were received within hold time and in good conditions; no anomalies were noted on the Sample Log-In Shipment Inspection Form during sample check-in. Identification of all samples included in the work order/project is provided in the sample summary section. Sample preservation upon receipt was verified by the sample custodian and confirmed to meet method requirements.

II. Methodology

Unless otherwise indicated, sample preparation and analysis was performed in accordance with the corresponding test methods from “Methods for the Determination of Inorganic Substances in Environmental Samples (EPA/600/R-93/100); SW-846, “Test Methods for Evaluating Solid Waste – Physical/Chemical Methods”, USEPA (latest revisions), and Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WPCF, 22nd Edition, 2012.

III. Results/Quality Control

Analytical results for this report are presented by laboratory sample ID, container & aliquot number. Results for the field blanks, field duplicates, and percent recoveries of the field matrix spike & matrix spike duplicate samples are included in the results section. Unless specifically noted in the case narrative, all method quality control requirements have been met. If any results are qualified, the corresponding data flags/qualifiers are listed on the last page of the results section. Any additional information on method performance, when applicable, is presented in this section of the case narrative. When data flags are not needed, the qualifiers text box on the last page is left blank, and a statement confirms that no exceptions occurred.

DEFINITIONS / QUALIFIERS

The following qualifiers and/or acronyms are used in the report where applicable:

<u>Acronym</u>	<u>Description</u>
RL	Reporting Limit
ND	Result not detected or below Reporting Limit
NT	Not a TNI Analyte
LCS	Laboratory Control Sample
LRB	Laboratory Reagent Blank (also referred to as Method Blank)
DUP	Duplicate
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
TDL	Target Detection Limit
SM	Standard Methods Compendium

<u>Qualifier</u>	<u>Description</u>
*	Generic data flag, applicable description added in the corresponding notes section
B	The analyte was detected in the LRB at a level which is significant relative to sample result

D	Reporting limit elevated due to dilution
E	Estimated due to result exceeding the linear range of the analyzer
H	The maximum recommended hold time was exceeded
I	Dilution required due to matrix interference; reporting limit elevated
J	Estimated due to result found above MDL but below PQL (or RL)
K	Reporting limit raised due to matrix interference
M	The precision for duplicate analysis was not met; RPD outside acceptance criteria
N	Non-homogeneous sample made analysis questionable
PI	Possible interference may have affected the accuracy of the laboratory result
Q	Matrix Spike or Matrix Spike Duplicate recovery outside acceptance criteria
R	Result confirmed by new sample preparation and reanalysis
X	Other notation required; comment listed in sample notes and/or case narrative

Customer Name: JH Campbell Complex
Work Order ID: Q2-2025 Supplemental Wells
Date Received: 4/16/2025
Chemistry Project: 25-0226

<u>Sample #</u>	<u>Field Sample ID</u>	<u>Matrix</u>	<u>Sample Date</u>	<u>Site</u>
25-0226-01	MW-14S	Groundwater	04/15/2025 18:41	JHC GW Monitoring - Supplemental Wells
25-0226-02	PZ-23S	Groundwater	04/15/2025 17:56	JHC GW Monitoring - Supplemental Wells
25-0226-03	PZ-24S	Groundwater	04/15/2025 15:22	JHC GW Monitoring - Supplemental Wells
25-0226-05	PZ-40S	Groundwater	04/15/2025 12:51	JHC GW Monitoring - Supplemental Wells
25-0226-07	TW-19-05	Groundwater	04/15/2025 15:36	JHC GW Monitoring - Supplemental Wells
25-0226-08	TW-19-06A	Groundwater	04/15/2025 17:01	JHC GW Monitoring - Supplemental Wells
25-0226-09	DUP-07	Groundwater	04/15/2025 00:00	JHC GW Monitoring - Supplemental Wells
25-0226-10	TW-19-06A MS	Groundwater	04/15/2025 17:01	JHC GW Monitoring - Supplemental Wells
25-0226-11	TW-19-06A MSD	Groundwater	04/15/2025 17:01	JHC GW Monitoring - Supplemental Wells



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **MW-14S**
 Lab Sample ID: 25-0226-01
 Matrix: Groundwater

Laboratory Project: **25-0226**
 Collect Date: 04/15/2025
 Collect Time: 06:41 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0226-01-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/22/2025	AB25-0422-01

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0226-01-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Arsenic	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Barium	14		ug/L	5.0	04/22/2025	AB25-0422-02
Beryllium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Boron	39		ug/L	20.0	04/22/2025	AB25-0422-02
Cadmium	ND		ug/L	0.2	04/22/2025	AB25-0422-02
Calcium	9140		ug/L	1000.0	04/22/2025	AB25-0422-02
Chromium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Cobalt	ND		ug/L	6.0	04/22/2025	AB25-0422-02
Copper	1		ug/L	1.0	04/22/2025	AB25-0422-02
Iron	44		ug/L	20.0	04/22/2025	AB25-0422-02
Lead	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Lithium	ND		ug/L	10.0	04/22/2025	AB25-0422-02
Magnesium	3450		ug/L	1000.0	04/22/2025	AB25-0422-02
Manganese	6		ug/L	5.0	04/22/2025	AB25-0422-02
Molybdenum	21		ug/L	5.0	04/22/2025	AB25-0422-02
Nickel	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Potassium	173		ug/L	100.0	04/22/2025	AB25-0422-02
Selenium	2		ug/L	1.0	04/22/2025	AB25-0422-02
Silver	ND		ug/L	0.2	04/22/2025	AB25-0422-02
Sodium	1920		ug/L	1000.0	04/22/2025	AB25-0422-02
Thallium	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Vanadium	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Zinc	ND		ug/L	10.0	04/22/2025	AB25-0422-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0226-01-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	1420		ug/L	1000.0	04/21/2025	AB25-0421-05
Fluoride	ND		ug/L	1000.0	04/21/2025	AB25-0421-05
Sulfate	12600		ug/L	1000.0	04/21/2025	AB25-0421-05

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **MW-14S**
 Lab Sample ID: 25-0226-01
 Matrix: Groundwater

Laboratory Project: **25-0226**
 Collect Date: 04/15/2025
 Collect Time: 06:41 PM

Total Dissolved Solids by SM 2540C

Aliquot #: 25-0226-01-C03-A01

Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	88		mg/L	10.0	04/16/2025	AB25-0417-03

Alkalinity by SM 2320B

Aliquot #: 25-0226-01-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	24500		ug/L	10000.0	04/21/2025	AB25-0421-03
Alkalinity Bicarbonate	24500		ug/L	10000.0	04/21/2025	AB25-0421-03
Alkalinity Carbonate	ND		ug/L	10000.0	04/21/2025	AB25-0421-03

Groundwater Metals by EPA 6020A, Dissolved, JHC List

Aliquot #: 25-0226-01-C08-A01

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/28/2025	AB25-0428-02
Arsenic	ND		ug/L	1.0	04/28/2025	AB25-0428-02
Chromium	ND		ug/L	1.0	04/28/2025	AB25-0428-02
Lithium	ND		ug/L	10.0	04/28/2025	AB25-0428-02
Molybdenum	23		ug/L	5.0	04/28/2025	AB25-0428-02
Nickel	ND		ug/L	2.0	04/28/2025	AB25-0428-02
Selenium	ND		ug/L	1.0	04/28/2025	AB25-0428-02
Vanadium	ND		ug/L	2.0	04/28/2025	AB25-0428-02
Boron	40		ug/L	20.0	04/28/2025	AB25-0428-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **PZ-23S**
 Lab Sample ID: 25-0226-02
 Matrix: Groundwater

Laboratory Project: **25-0226**
 Collect Date: 04/15/2025
 Collect Time: 05:56 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0226-02-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/22/2025	AB25-0422-01

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0226-02-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Arsenic	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Barium	ND		ug/L	5.0	04/22/2025	AB25-0422-02
Beryllium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Boron	ND		ug/L	20.0	04/22/2025	AB25-0422-02
Cadmium	ND		ug/L	0.2	04/22/2025	AB25-0422-02
Calcium	5290		ug/L	1000.0	04/22/2025	AB25-0422-02
Chromium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Cobalt	ND		ug/L	6.0	04/22/2025	AB25-0422-02
Copper	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Iron	41		ug/L	20.0	04/22/2025	AB25-0422-02
Lead	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Lithium	ND		ug/L	10.0	04/22/2025	AB25-0422-02
Magnesium	1170		ug/L	1000.0	04/22/2025	AB25-0422-02
Manganese	ND		ug/L	5.0	04/22/2025	AB25-0422-02
Molybdenum	ND		ug/L	5.0	04/22/2025	AB25-0422-02
Nickel	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Potassium	707		ug/L	100.0	04/22/2025	AB25-0422-02
Selenium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Silver	ND		ug/L	0.2	04/22/2025	AB25-0422-02
Sodium	ND		ug/L	1000.0	04/22/2025	AB25-0422-02
Thallium	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Vanadium	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Zinc	ND		ug/L	10.0	04/22/2025	AB25-0422-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0226-02-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	04/21/2025	AB25-0421-05
Fluoride	ND		ug/L	1000.0	04/21/2025	AB25-0421-05
Sulfate	2410		ug/L	1000.0	04/21/2025	AB25-0421-05

Laboratory Services
A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **PZ-23S**
 Lab Sample ID: 25-0226-02
 Matrix: Groundwater

Laboratory Project: **25-0226**
 Collect Date: 04/15/2025
 Collect Time: 05:56 PM

Total Dissolved Solids by SM 2540C Aliquot #: 25-0226-02-C03-A01 Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	72		mg/L	10.0	04/16/2025	AB25-0417-03

Alkalinity by SM 2320B Aliquot #: 25-0226-02-C04-A01 Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	16900		ug/L	10000.0	04/21/2025	AB25-0421-03
Alkalinity Bicarbonate	16900		ug/L	10000.0	04/21/2025	AB25-0421-03
Alkalinity Carbonate	ND		ug/L	10000.0	04/21/2025	AB25-0421-03

Groundwater Metals by EPA 6020A, Dissolved, JHC List Aliquot #: 25-0226-02-C08-A01 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/28/2025	AB25-0428-02
Arsenic	ND		ug/L	1.0	04/28/2025	AB25-0428-02
Chromium	ND		ug/L	1.0	04/28/2025	AB25-0428-02
Lithium	ND		ug/L	10.0	04/28/2025	AB25-0428-02
Molybdenum	ND		ug/L	5.0	04/28/2025	AB25-0428-02
Nickel	ND		ug/L	2.0	04/28/2025	AB25-0428-02
Selenium	1		ug/L	1.0	04/28/2025	AB25-0428-02
Vanadium	ND		ug/L	2.0	04/28/2025	AB25-0428-02
Boron	ND		ug/L	20.0	04/28/2025	AB25-0428-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **PZ-24S**
 Lab Sample ID: 25-0226-03
 Matrix: Groundwater

Laboratory Project: **25-0226**
 Collect Date: 04/15/2025
 Collect Time: 03:22 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0226-03-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/22/2025	AB25-0422-01

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0226-03-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Arsenic	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Barium	42		ug/L	5.0	04/22/2025	AB25-0422-02
Beryllium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Boron	21		ug/L	20.0	04/22/2025	AB25-0422-02
Cadmium	ND		ug/L	0.2	04/22/2025	AB25-0422-02
Calcium	5380		ug/L	1000.0	04/22/2025	AB25-0422-02
Chromium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Cobalt	ND		ug/L	6.0	04/22/2025	AB25-0422-02
Copper	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Iron	959		ug/L	20.0	04/22/2025	AB25-0422-02
Lead	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Lithium	ND		ug/L	10.0	04/22/2025	AB25-0422-02
Magnesium	ND		ug/L	1000.0	04/22/2025	AB25-0422-02
Manganese	13		ug/L	5.0	04/22/2025	AB25-0422-02
Molybdenum	ND		ug/L	5.0	04/22/2025	AB25-0422-02
Nickel	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Potassium	817		ug/L	100.0	04/22/2025	AB25-0422-02
Selenium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Silver	ND		ug/L	0.2	04/22/2025	AB25-0422-02
Sodium	1230		ug/L	1000.0	04/22/2025	AB25-0422-02
Thallium	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Vanadium	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Zinc	ND		ug/L	10.0	04/22/2025	AB25-0422-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0226-03-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	1210		ug/L	1000.0	04/21/2025	AB25-0421-05
Fluoride	ND		ug/L	1000.0	04/21/2025	AB25-0421-05
Sulfate	14300		ug/L	1000.0	04/21/2025	AB25-0421-05

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **PZ-24S**
 Lab Sample ID: 25-0226-03
 Matrix: Groundwater

Laboratory Project: **25-0226**
 Collect Date: 04/15/2025
 Collect Time: 03:22 PM

Total Dissolved Solids by SM 2540C

Aliquot #: 25-0226-03-C03-A01

Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	81		mg/L	10.0	04/16/2025	AB25-0417-03

Alkalinity by SM 2320B

Aliquot #: 25-0226-03-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	ND		ug/L	10000.0	04/21/2025	AB25-0421-03
Alkalinity Bicarbonate	ND		ug/L	10000.0	04/21/2025	AB25-0421-03
Alkalinity Carbonate	ND		ug/L	10000.0	04/21/2025	AB25-0421-03

Groundwater Metals by EPA 6020A, Dissolved, JHC List

Aliquot #: 25-0226-03-C08-A01

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/28/2025	AB25-0428-02
Arsenic	ND		ug/L	1.0	04/28/2025	AB25-0428-02
Chromium	ND		ug/L	1.0	04/28/2025	AB25-0428-02
Lithium	ND		ug/L	10.0	04/28/2025	AB25-0428-02
Molybdenum	ND		ug/L	5.0	04/28/2025	AB25-0428-02
Nickel	ND		ug/L	2.0	04/28/2025	AB25-0428-02
Selenium	ND		ug/L	1.0	04/28/2025	AB25-0428-02
Vanadium	ND		ug/L	2.0	04/28/2025	AB25-0428-02
Boron	23		ug/L	20.0	04/28/2025	AB25-0428-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **PZ-40S**
 Lab Sample ID: 25-0226-05
 Matrix: Groundwater

Laboratory Project: **25-0226**
 Collect Date: 04/15/2025
 Collect Time: 12:51 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0226-05-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/22/2025	AB25-0422-01

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0226-05-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Arsenic	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Barium	29		ug/L	5.0	04/22/2025	AB25-0422-02
Beryllium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Boron	44		ug/L	20.0	04/22/2025	AB25-0422-02
Cadmium	ND		ug/L	0.2	04/22/2025	AB25-0422-02
Calcium	1750		ug/L	1000.0	04/22/2025	AB25-0422-02
Chromium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Cobalt	ND		ug/L	6.0	04/22/2025	AB25-0422-02
Copper	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Iron	80		ug/L	20.0	04/22/2025	AB25-0422-02
Lead	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Lithium	ND		ug/L	10.0	04/22/2025	AB25-0422-02
Magnesium	ND		ug/L	1000.0	04/22/2025	AB25-0422-02
Manganese	13		ug/L	5.0	04/22/2025	AB25-0422-02
Molybdenum	ND		ug/L	5.0	04/22/2025	AB25-0422-02
Nickel	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Potassium	161		ug/L	100.0	04/22/2025	AB25-0422-02
Selenium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Silver	ND		ug/L	0.2	04/22/2025	AB25-0422-02
Sodium	2240		ug/L	1000.0	04/22/2025	AB25-0422-02
Thallium	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Vanadium	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Zinc	ND		ug/L	10.0	04/22/2025	AB25-0422-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0226-05-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	04/21/2025	AB25-0421-05
Fluoride	ND		ug/L	1000.0	04/21/2025	AB25-0421-05
Sulfate	7800		ug/L	1000.0	04/21/2025	AB25-0421-05

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **PZ-40S**
 Lab Sample ID: 25-0226-05
 Matrix: Groundwater

Laboratory Project: **25-0226**
 Collect Date: 04/15/2025
 Collect Time: 12:51 PM

Total Dissolved Solids by SM 2540C

Aliquot #: 25-0226-05-C03-A01 Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	45		mg/L	10.0	04/16/2025	AB25-0417-03

Alkalinity by SM 2320B

Aliquot #: 25-0226-05-C04-A01 Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	ND		ug/L	10000.0	04/21/2025	AB25-0421-03
Alkalinity Bicarbonate	ND		ug/L	10000.0	04/21/2025	AB25-0421-03
Alkalinity Carbonate	ND		ug/L	10000.0	04/21/2025	AB25-0421-03

Groundwater Metals by EPA 6020A, Dissolved, JHC List

Aliquot #: 25-0226-05-C08-A01 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/28/2025	AB25-0428-02
Arsenic	ND		ug/L	1.0	04/28/2025	AB25-0428-02
Chromium	1		ug/L	1.0	04/28/2025	AB25-0428-02
Lithium	ND		ug/L	10.0	04/28/2025	AB25-0428-02
Molybdenum	ND		ug/L	5.0	04/28/2025	AB25-0428-02
Nickel	ND		ug/L	2.0	04/28/2025	AB25-0428-02
Selenium	ND		ug/L	1.0	04/28/2025	AB25-0428-02
Vanadium	ND		ug/L	2.0	04/28/2025	AB25-0428-02
Boron	46		ug/L	20.0	04/28/2025	AB25-0428-02



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **TW-19-05**
 Lab Sample ID: 25-0226-07
 Matrix: Groundwater

Laboratory Project: **25-0226**
 Collect Date: 04/15/2025
 Collect Time: 03:36 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0226-07-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/22/2025	AB25-0422-01

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0226-07-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	2		ug/L	1.0	04/22/2025	AB25-0422-02
Arsenic	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Barium	42		ug/L	5.0	04/22/2025	AB25-0422-02
Beryllium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Boron	94		ug/L	20.0	04/22/2025	AB25-0422-02
Cadmium	ND		ug/L	0.2	04/22/2025	AB25-0422-02
Calcium	37800		ug/L	1000.0	04/22/2025	AB25-0422-02
Chromium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Cobalt	ND		ug/L	6.0	04/22/2025	AB25-0422-02
Copper	3		ug/L	1.0	04/22/2025	AB25-0422-02
Iron	ND		ug/L	20.0	04/22/2025	AB25-0422-02
Lead	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Lithium	26		ug/L	10.0	04/22/2025	AB25-0422-02
Magnesium	11200		ug/L	1000.0	04/22/2025	AB25-0422-02
Manganese	ND		ug/L	5.0	04/22/2025	AB25-0422-02
Molybdenum	ND		ug/L	5.0	04/22/2025	AB25-0422-02
Nickel	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Potassium	11500		ug/L	100.0	04/22/2025	AB25-0422-02
Selenium	20		ug/L	1.0	04/22/2025	AB25-0422-02
Silver	ND		ug/L	0.2	04/22/2025	AB25-0422-02
Sodium	1330		ug/L	1000.0	04/22/2025	AB25-0422-02
Thallium	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Vanadium	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Zinc	ND		ug/L	10.0	04/22/2025	AB25-0422-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0226-07-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	04/21/2025	AB25-0421-05
Fluoride	ND		ug/L	1000.0	04/21/2025	AB25-0421-05
Sulfate	13100		ug/L	1000.0	04/21/2025	AB25-0421-05



Analytical Report

Report Date: 04/30/25

Laboratory Services A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
Field Sample ID: **TW-19-05**
Lab Sample ID: 25-0226-07
Matrix: Groundwater

Laboratory Project: **25-0226**
Collect Date: 04/15/2025
Collect Time: 03:36 PM

Total Dissolved Solids by SM 2540C

Aliquot #: 25-0226-07-C03-A01

Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	187		mg/L	10.0	04/16/2025	AB25-0417-03

Alkalinity by SM 2320B

Aliquot #: 25-0226-07-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	139000		ug/L	10000.0	04/21/2025	AB25-0421-03
Alkalinity Bicarbonate	139000		ug/L	10000.0	04/21/2025	AB25-0421-03
Alkalinity Carbonate	ND		ug/L	10000.0	04/21/2025	AB25-0421-03

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **TW-19-06A**
 Lab Sample ID: 25-0226-08
 Matrix: Groundwater

Laboratory Project: **25-0226**
 Collect Date: 04/15/2025
 Collect Time: 05:01 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0226-08-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/22/2025	AB25-0422-01

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0226-08-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Arsenic	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Barium	7		ug/L	5.0	04/22/2025	AB25-0422-02
Beryllium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Boron	45		ug/L	20.0	04/22/2025	AB25-0422-02
Cadmium	ND		ug/L	0.2	04/22/2025	AB25-0422-02
Calcium	20400		ug/L	1000.0	04/22/2025	AB25-0422-02
Chromium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Cobalt	ND		ug/L	6.0	04/22/2025	AB25-0422-02
Copper	3		ug/L	1.0	04/22/2025	AB25-0422-02
Iron	72		ug/L	20.0	04/22/2025	AB25-0422-02
Lead	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Lithium	ND		ug/L	10.0	04/22/2025	AB25-0422-02
Magnesium	4300		ug/L	1000.0	04/22/2025	AB25-0422-02
Manganese	ND		ug/L	5.0	04/22/2025	AB25-0422-02
Molybdenum	11		ug/L	5.0	04/22/2025	AB25-0422-02
Nickel	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Potassium	1340		ug/L	100.0	04/22/2025	AB25-0422-02
Selenium	49		ug/L	1.0	04/22/2025	AB25-0422-02
Silver	ND		ug/L	0.2	04/22/2025	AB25-0422-02
Sodium	ND		ug/L	1000.0	04/22/2025	AB25-0422-02
Thallium	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Vanadium	5		ug/L	2.0	04/22/2025	AB25-0422-02
Zinc	ND		ug/L	10.0	04/22/2025	AB25-0422-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0226-08-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	04/21/2025	AB25-0421-05
Fluoride	ND		ug/L	1000.0	04/21/2025	AB25-0421-05
Sulfate	6740		ug/L	1000.0	04/21/2025	AB25-0421-05



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
Field Sample ID: **TW-19-06A**
Lab Sample ID: 25-0226-08
Matrix: Groundwater

Laboratory Project: **25-0226**
Collect Date: 04/15/2025
Collect Time: 05:01 PM

Total Dissolved Solids by SM 2540C

Aliquot #: 25-0226-08-C03-A01

Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	124		mg/L	10.0	04/16/2025	AB25-0417-03

Alkalinity by SM 2320B

Aliquot #: 25-0226-08-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	58200		ug/L	10000.0	04/21/2025	AB25-0421-03
Alkalinity Bicarbonate	58200		ug/L	10000.0	04/21/2025	AB25-0421-03
Alkalinity Carbonate	ND		ug/L	10000.0	04/21/2025	AB25-0421-03

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **DUP-07**
 Lab Sample ID: 25-0226-09
 Matrix: Groundwater

Laboratory Project: **25-0226**
 Collect Date: 04/15/2025
 Collect Time: 12:00 AM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0226-09-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	04/22/2025	AB25-0422-01

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0226-09-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Arsenic	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Barium	28		ug/L	5.0	04/22/2025	AB25-0422-02
Beryllium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Boron	44		ug/L	20.0	04/22/2025	AB25-0422-02
Cadmium	ND		ug/L	0.2	04/22/2025	AB25-0422-02
Calcium	1740		ug/L	1000.0	04/22/2025	AB25-0422-02
Chromium	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Cobalt	ND		ug/L	6.0	04/22/2025	AB25-0422-02
Copper	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Iron	86		ug/L	20.0	04/22/2025	AB25-0422-02
Lead	ND		ug/L	1.0	04/22/2025	AB25-0422-02
Lithium	ND		ug/L	10.0	04/22/2025	AB25-0422-02
Magnesium	ND		ug/L	1000.0	04/22/2025	AB25-0422-02
Manganese	13		ug/L	5.0	04/22/2025	AB25-0422-02
Molybdenum	ND		ug/L	5.0	04/22/2025	AB25-0422-02
Nickel	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Potassium	168		ug/L	100.0	04/22/2025	AB25-0422-02
Selenium	1		ug/L	1.0	04/22/2025	AB25-0422-02
Silver	ND		ug/L	0.2	04/22/2025	AB25-0422-02
Sodium	2250		ug/L	1000.0	04/22/2025	AB25-0422-02
Thallium	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Vanadium	ND		ug/L	2.0	04/22/2025	AB25-0422-02
Zinc	ND		ug/L	10.0	04/22/2025	AB25-0422-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0226-09-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	04/21/2025	AB25-0421-05
Fluoride	ND		ug/L	1000.0	04/21/2025	AB25-0421-05
Sulfate	7240		ug/L	1000.0	04/21/2025	AB25-0421-05



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
Field Sample ID: **DUP-07**
Lab Sample ID: 25-0226-09
Matrix: Groundwater

Laboratory Project: **25-0226**
Collect Date: 04/15/2025
Collect Time: 12:00 AM

Total Dissolved Solids by SM 2540C

Aliquot #: 25-0226-09-C03-A01

Analyst: LMO

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	51		mg/L	10.0	04/16/2025	AB25-0417-03

Alkalinity by SM 2320B

Aliquot #: 25-0226-09-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity Total	ND		ug/L	10000.0	04/21/2025	AB25-0421-03
Alkalinity Bicarbonate	ND		ug/L	10000.0	04/21/2025	AB25-0421-03
Alkalinity Carbonate	ND		ug/L	10000.0	04/21/2025	AB25-0421-03



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **TW-19-06A MS**
 Lab Sample ID: 25-0226-10
 Matrix: Groundwater

Laboratory Project: **25-0226**
 Collect Date: 04/15/2025
 Collect Time: 05:01 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0226-10-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	101		%	0.2	04/22/2025	AB25-0422-01

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0226-10-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	99		%	1.0	04/22/2025	AB25-0422-02
Arsenic	105		%	1.0	04/22/2025	AB25-0422-02
Barium	106		%	5.0	04/22/2025	AB25-0422-02
Beryllium	106		%	1.0	04/22/2025	AB25-0422-02
Boron	107		%	20.0	04/22/2025	AB25-0422-02
Cadmium	99.0		%	0.2	04/22/2025	AB25-0422-02
Calcium	98.1		%	1000.0	04/22/2025	AB25-0422-02
Chromium	106		%	1.0	04/22/2025	AB25-0422-02
Cobalt	106		%	6.0	04/22/2025	AB25-0422-02
Copper	104		%	1.0	04/22/2025	AB25-0422-02
Iron	109		%	20.0	04/22/2025	AB25-0422-02
Lead	101		%	1.0	04/22/2025	AB25-0422-02
Lithium	104		%	10.0	04/22/2025	AB25-0422-02
Magnesium	100		%	1000.0	04/22/2025	AB25-0422-02
Manganese	109		%	5.0	04/22/2025	AB25-0422-02
Molybdenum	99		%	5.0	04/22/2025	AB25-0422-02
Nickel	104		%	2.0	04/22/2025	AB25-0422-02
Potassium	103		%	100.0	04/22/2025	AB25-0422-02
Selenium	104		%	1.0	04/22/2025	AB25-0422-02
Silver	95.5		%	0.2	04/22/2025	AB25-0422-02
Sodium	103		%	1000.0	04/22/2025	AB25-0422-02
Thallium	100		%	2.0	04/22/2025	AB25-0422-02
Vanadium	109		%	2.0	04/22/2025	AB25-0422-02
Zinc	108		%	10.0	04/22/2025	AB25-0422-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0226-10-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	94		%	1000.0	04/21/2025	AB25-0421-05
Fluoride	95		%	1000.0	04/21/2025	AB25-0421-05
Sulfate	94		%	1000.0	04/21/2025	AB25-0421-05



Analytical Report

Report Date: 04/30/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **TW-19-06A MSD**
 Lab Sample ID: 25-0226-11
 Matrix: Groundwater

Laboratory Project: **25-0226**
 Collect Date: 04/15/2025
 Collect Time: 05:01 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0226-11-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	101		%	0.2	04/22/2025	AB25-0422-01

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0226-11-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	97		%	1.0	04/22/2025	AB25-0422-02
Arsenic	105		%	1.0	04/22/2025	AB25-0422-02
Barium	104		%	5.0	04/22/2025	AB25-0422-02
Beryllium	104		%	1.0	04/22/2025	AB25-0422-02
Boron	104		%	20.0	04/22/2025	AB25-0422-02
Cadmium	97.2		%	0.2	04/22/2025	AB25-0422-02
Calcium	91.6		%	1000.0	04/22/2025	AB25-0422-02
Chromium	103		%	1.0	04/22/2025	AB25-0422-02
Cobalt	103		%	6.0	04/22/2025	AB25-0422-02
Copper	103		%	1.0	04/22/2025	AB25-0422-02
Iron	102		%	20.0	04/22/2025	AB25-0422-02
Lead	99		%	1.0	04/22/2025	AB25-0422-02
Lithium	96		%	10.0	04/22/2025	AB25-0422-02
Magnesium	98.4		%	1000.0	04/22/2025	AB25-0422-02
Manganese	107		%	5.0	04/22/2025	AB25-0422-02
Molybdenum	99		%	5.0	04/22/2025	AB25-0422-02
Nickel	102		%	2.0	04/22/2025	AB25-0422-02
Potassium	102		%	100.0	04/22/2025	AB25-0422-02
Selenium	102		%	1.0	04/22/2025	AB25-0422-02
Silver	95.6		%	0.2	04/22/2025	AB25-0422-02
Sodium	104		%	1000.0	04/22/2025	AB25-0422-02
Thallium	99		%	2.0	04/22/2025	AB25-0422-02
Vanadium	107		%	2.0	04/22/2025	AB25-0422-02
Zinc	106		%	10.0	04/22/2025	AB25-0422-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0226-11-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	94		%	1000.0	04/21/2025	AB25-0421-05
Fluoride	95		%	1000.0	04/21/2025	AB25-0421-05
Sulfate	94		%	1000.0	04/21/2025	AB25-0421-05



Analytical Report

Report Date: 04/30/25

Laboratory Services
A CENTURY OF EXCELLENCE

Data Qualifiers	Exception Summary
-----------------	-------------------

No exceptions occurred.

TITLE: SAMPLE LOG-IN – SHIPMENT INSPECTION FORM

Project Number: 25-0226 Inspection Date: 4.16.25 Inspection By: KDR

Sample Origin/Project Name: JHC Q2-2025 Supplemental Wells

Shipment Delivered By: Enter the type of shipment carrier.

Inter-Company Mail _____ FedEx _____ UPS _____ USPS _____

Tracking Number: _____ Other/Carry In (whom) KDR

Shipping Containers: Enter the type and number of shipping containers received.

Cooler Cardboard Box _____ Custom Case _____ Envelope/Mailer _____

Loose/Unpackaged Containers _____ Other _____

Condition of Shipment: Enter the as-received condition of the shipment container.

Damaged Shipment Observed: None Dented _____ Leaking _____

Other _____

Shipment Security: Enter if any of the shipping containers were opened before receipt.

Shipping Containers Received: Opened _____ Sealed N/A _____

Enclosed Documents: Enter the type of documents enclosed with the shipment.

CoC Work Request _____ Air Data Sheet _____ Other _____

Temperature of Containers: Measure the temperature of several sample containers.

As-Received Temperature Range 3.0 - 4.8 °C Samples Received on Ice: Yes No _____

M&TE # and Expiration LS028757/ 1.16.26

Number and Type of Containers: Enter the type and total number of sample containers received.

Container Type	Water	Soil	Other	Broken	Leaking
VOA (40mL or 60mL)	<u>14</u>	_____	_____	_____	_____
Quart Liter (g/p)	<u>14</u>	_____	_____	_____	_____
9-oz (amber glass jar)	_____	_____	_____	_____	_____
2-oz (amber glass)	_____	_____	_____	_____	_____
125 mL (plastic)	<u>22</u>	_____	_____	_____	_____
24 mL vial (glass)	_____	_____	_____	_____	_____
250 mL (plastic)	<u>7</u>	_____	_____	_____	_____
Other	_____	_____	_____	_____	_____

All sample pH meeting criteria? Yes No _____ N/A _____ pH paper lot # 210224 Exp. Date 12.1.26

Indicate if an Exception Report (Page 2 of 2) is needed: Yes _____ No

CHAIN OF CUSTODY



CONSUMERS ENERGY COMPANY – LABORATORY SERVICES

135 WEST TRAIL ST., JACKSON, MI 49201 • (517) 788-1251

Page 1 of 1

SAMPLING SITE / CUSTOMER: JHC Q2-2025 Supplemental Wells			PROJECT NUMBER: 25-0226		SAP CC or WO#: REQUESTER: JR Register		ANALYSIS REQUESTED (Attach List if More Space is Needed)							QA REQUIREMENT: <input type="checkbox"/> NPDES <input checked="" type="checkbox"/> TNI <input type="checkbox"/> ISO 17025 <input type="checkbox"/> 10 CFR 50 APP. B <input type="checkbox"/> INTERNAL INFO <input type="checkbox"/> OTHER _____	
SAMPLING TEAM: KDR, LMO			TURNAROUND TIME REQUIRED: <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 3 DAYS <input type="checkbox"/> STANDARD <input checked="" type="checkbox"/> OTHER _____												
SEND REPORT TO: Joseph Firlit		email:		phone:											
COPY TO: JR Register		MATRIX CODES:		CONTAINERS											
TRC		GW = Groundwater OX = Other WW = Wastewater SL = Sludge W = Water / Aqueous Liquid A = Air S = Soil / General Solid WP = Wipe O = Oil WT = General Waste		PRESERVATIVE											
LAB SAMPLE ID		SAMPLE COLLECTION		FIELD SAMPLE ID / LOCATION		TOTAL #									REMARKS
		DATE TIME				None HNO ₃ H ₂ SO ₄ NaOH HCl MeOH Other									
25-0226-01		4.15.25 1841		MW-14S		8 4 4		Total Metals Anions TDS Alkalinity Radium 226 Radium 228 Dissolved Metals x x x x x x x							
-02		4.15.25 1756		PZ-23S		8 4 4		x x x x x x x							
-03		4.15.25 1522		PZ-24S		8 4 4		x x x x x x x							
-05		4.15.25 1251		PZ-40S		8 4 4		x x x x x x x							
-07		4.15.25 1536		TW-19-05		7 4 3		x x x x x x							
-08		4.15.25 1701		TW-19-06A		7 4 3		x x x x x x							
-09		4.15.25 —		DUP-07		7 4 3		x x x x x x							
-10		4.15.25 1701		TW-19-06A MS		2 1 1		x x							
-11		4.15.25 1701		TW-19-06A MSD		2 1 1		x x							

RELINQUISHED BY: <i>Neil Patel</i>		DATE/TIME: 4.16.25/1214		RECEIVED BY: <i>J</i>		COMMENTS: Received on Ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No M&TE #: <u>LS028757</u> Temperature: <u>3.0-4.8</u> °C Cal. Due Date: <u>1.16.26</u>					
RELINQUISHED BY:		DATE/TIME:		RECEIVED BY:							



ANALYTICAL REPORT

PREPARED FOR

Attn: Emil Blaj
Consumers Energy
135 W Trail Street
Jackson, Michigan 49201

Generated 5/28/2025 6:29:55 PM

JOB DESCRIPTION

JH Campbell Background Wells

JOB NUMBER

160-57889-1

Eurofins St. Louis

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 TestAmerica Project Manager.

Authorization



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5/28/2025 6:29:55 PM

Authorized for release by
Micha Korinhizer, Project Manager
Micha.Korinhizer@et.eurofinsus.com
(314)298-8566



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Case Narrative

Client: Consumers Energy
Project: JH Campbell Background Wells

Job ID: 160-57889-1

Job ID: 160-57889-1

Eurofins St. Louis

CASE NARRATIVE

Client: Consumers Energy

Project: JH Campbell CCR Groundwater Testing

Report Number: 160-57889-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition, all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method.

Eurofins Environment Testing attests to the validity of the laboratory data generated by Eurofins facilities reported herein. All analyses performed by Eurofins Environment Testing facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins Environment Testing's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Calculations are performed before rounding to avoid round-off errors in calculated results.

Proper preservation was noted for the methods performed on these samples, unless otherwise detailed below.

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.

This laboratory report is confidential and is intended for the sole use of Eurofins Environment Testing and its client.

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

Receipt

The samples were received on 4/25/2025 12:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved. The temperatures of the 4 coolers at receipt time were 20.8°C, 21.4°C, 22.3°C and 22.4°C.

Receipt Exceptions

The samplers name is not listed on the COC.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): JHC-MW-15026 (160-57889-4). The container labels list a collection date of 4/14/25, while the COC lists 4/15/25. Logged in the collection time on the COC.

The following samples were received at the laboratory without a sample collection time documented on the chain of custody: JHC-MW-15023 (160-57889-1), JHC-MW-15024 (160-57889-2), JHC-MW-15025 (160-57889-3), JHC-MW-15026 (160-57889-4), JHC-MW-15027 (160-57889-5), JHC-MW-15028 (160-57889-6), DUP-01 (160-57889-7), FB-01 (160-57889-8) and EB-01 (160-57889-9). A time of 12:00am was used to log the sample.

Method 903.0 - Radium-226 (GFPC)

Samples JHC-MW-15023 (160-57889-1), JHC-MW-15024 (160-57889-2), JHC-MW-15025 (160-57889-3), JHC-MW-15026 (160-57889-4), JHC-MW-15027 (160-57889-5), JHC-MW-15028 (160-57889-6), DUP-01 (160-57889-7), FB-01 (160-57889-8) and EB-01 (160-57889-9) were analyzed for Radium-226 (GFPC). The samples were prepared on 4/30/2025 and analyzed on 5/27/2025.

Method 904.0 - Radium-228 (GFPC)

Samples JHC-MW-15023 (160-57889-1), JHC-MW-15024 (160-57889-2), JHC-MW-15025 (160-57889-3), JHC-MW-15026 (160-57889-4), JHC-MW-15027 (160-57889-5), JHC-MW-15028 (160-57889-6), DUP-01 (160-57889-7), FB-01 (160-57889-8) and EB-01 (160-57889-9) were analyzed for Radium-228 (GFPC). The samples were prepared on 4/30/2025 and analyzed on 5/24/2025.

Eurofins St. Louis

Case Narrative

Client: Consumers Energy
Project: JH Campbell Background Wells

Job ID: 160-57889-1

Job ID: 160-57889-1 (Continued)

Eurofins St. Louis

Method Ra226_Ra228 - Combined Radium-226 and Radium-228

Samples JHC-MW-15023 (160-57889-1), JHC-MW-15024 (160-57889-2), JHC-MW-15025 (160-57889-3), JHC-MW-15026 (160-57889-4), JHC-MW-15027 (160-57889-5), JHC-MW-15028 (160-57889-6), DUP-01 (160-57889-7), FB-01 (160-57889-8) and EB-01 (160-57889-9) were analyzed for Combined Radium-226 and Radium-228. The samples were analyzed on 5/28/2025.

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Login Sample Receipt Checklist

Client: Consumers Energy

Job Number: 160-57889-1

Login Number: 57889

List Source: Eurofins St. Louis

List Number: 1

Creator: Worthington, Sierra M

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?	False	The samplers name is not listed on the COC.
There are no discrepancies between the containers received and the COC.	False	Collection date for sample 4 does not match. Logged in per the COC
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.	False	No time on COC or sample containers on sample 7
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-57889-1

Qualifiers

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 Summary

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-57889-1

Method	Method Description	Protocol	Laboratory
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
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



Sample Summary

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-57889-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-57889-1	JHC-MW-15023	Water	04/14/25 15:06	04/25/25 12:05
160-57889-2	JHC-MW-15024	Water	04/14/25 17:11	04/25/25 12:05
160-57889-3	JHC-MW-15025	Water	04/14/25 18:11	04/25/25 12:05
160-57889-4	JHC-MW-15026	Water	04/15/25 19:21	04/25/25 12:05
160-57889-5	JHC-MW-15027	Water	04/15/25 10:46	04/25/25 12:05
160-57889-6	JHC-MW-15028	Water	04/15/25 12:51	04/25/25 12:05
160-57889-7	DUP-01	Water	04/14/25 00:00	04/25/25 12:05
160-57889-8	FB-01	Water	04/15/25 13:23	04/25/25 12:05
160-57889-9	EB-01	Water	04/15/25 13:35	04/25/25 12:05



Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-57889-1

Client Sample ID: JHC-MW-15023

Lab Sample ID: 160-57889-1

Date Collected: 04/14/25 15:06

Matrix: Water

Date Received: 04/25/25 12:05

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	0.00529	U	0.0701	0.0701	1.00	0.144	pCi/L	04/30/25 12:58	05/27/25 12:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.4		30 - 110					04/30/25 12:58	05/27/25 12:16	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	1.01		0.408	0.418	1.00	0.527	pCi/L	04/30/25 13:04	05/24/25 10:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.4		30 - 110					04/30/25 13:04	05/24/25 10:37	1
Y Carrier	78.9		30 - 110					04/30/25 13:04	05/24/25 10:37	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.02		0.414	0.424	5.00	0.527	pCi/L		05/28/25 11:41	1

Client Sample ID: JHC-MW-15024

Lab Sample ID: 160-57889-2

Date Collected: 04/14/25 17:11

Matrix: Water

Date Received: 04/25/25 12:05

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	0.0566	U	0.0841	0.0842	1.00	0.144	pCi/L	04/30/25 12:58	05/27/25 12:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.5		30 - 110					04/30/25 12:58	05/27/25 12:17	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	-0.00469	U	0.337	0.337	1.00	0.626	pCi/L	04/30/25 13:04	05/24/25 10:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.5		30 - 110					04/30/25 13:04	05/24/25 10:37	1
Y Carrier	76.3		30 - 110					04/30/25 13:04	05/24/25 10:37	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-57889-1

Client Sample ID: JHC-MW-15024

Lab Sample ID: 160-57889-2

Date Collected: 04/14/25 17:11

Matrix: Water

Date Received: 04/25/25 12:05

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0519	U	0.347	0.347	5.00	0.626	pCi/L		05/28/25 11:41	1

Client Sample ID: JHC-MW-15025

Lab Sample ID: 160-57889-3

Date Collected: 04/14/25 18:11

Matrix: Water

Date Received: 04/25/25 12:05

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	0.0130	U	0.0855	0.0855	1.00	0.170	pCi/L	04/30/25 12:58	05/27/25 12:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.9		30 - 110					04/30/25 12:58	05/27/25 12:17	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	0.417	U	0.381	0.383	1.00	0.605	pCi/L	04/30/25 13:04	05/24/25 10:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.9		30 - 110					04/30/25 13:04	05/24/25 10:37	1
Y Carrier	77.0		30 - 110					04/30/25 13:04	05/24/25 10:37	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.429	U	0.390	0.392	5.00	0.605	pCi/L		05/28/25 11:41	1

Client Sample ID: JHC-MW-15026

Lab Sample ID: 160-57889-4

Date Collected: 04/15/25 19:21

Matrix: Water

Date Received: 04/25/25 12:05

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	-0.0286	U	0.104	0.104	1.00	0.213	pCi/L	04/30/25 12:58	05/27/25 12:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.9		30 - 110					04/30/25 12:58	05/27/25 12:17	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-57889-1

Client Sample ID: JHC-MW-15026

Lab Sample ID: 160-57889-4

Date Collected: 04/15/25 19:21

Matrix: Water

Date Received: 04/25/25 12:05

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	0.351	U	0.369	0.370	1.00	0.600	pCi/L	04/30/25 13:04	05/24/25 10:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.9		30 - 110					04/30/25 13:04	05/24/25 10:37	1
Y Carrier	78.9		30 - 110					04/30/25 13:04	05/24/25 10:37	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.322	U	0.383	0.384	5.00	0.600	pCi/L		05/28/25 11:41	1

Client Sample ID: JHC-MW-15027

Lab Sample ID: 160-57889-5

Date Collected: 04/15/25 10:46

Matrix: Water

Date Received: 04/25/25 12:05

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	0.0766	U	0.129	0.130	1.00	0.224	pCi/L	04/30/25 12:58	05/27/25 12:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.1		30 - 110					04/30/25 12:58	05/27/25 12:17	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	-0.102	U	0.260	0.260	1.00	0.520	pCi/L	04/30/25 13:04	05/24/25 10:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.1		30 - 110					04/30/25 13:04	05/24/25 10:37	1
Y Carrier	80.0		30 - 110					04/30/25 13:04	05/24/25 10:37	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0257	U	0.290	0.291	5.00	0.520	pCi/L		05/28/25 11:41	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-57889-1

Client Sample ID: JHC-MW-15028

Lab Sample ID: 160-57889-6

Date Collected: 04/15/25 12:51

Matrix: Water

Date Received: 04/25/25 12:05

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	0.0116	U	0.0695	0.0695	1.00	0.140	pCi/L	04/30/25 12:58	05/27/25 14:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.9		30 - 110					04/30/25 12:58	05/27/25 14:23	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	0.263	U	0.311	0.312	1.00	0.513	pCi/L	04/30/25 13:04	05/24/25 10:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.9		30 - 110					04/30/25 13:04	05/24/25 10:37	1
Y Carrier	78.1		30 - 110					04/30/25 13:04	05/24/25 10:37	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.274	U	0.319	0.320	5.00	0.513	pCi/L		05/28/25 11:41	1

Client Sample ID: DUP-01

Lab Sample ID: 160-57889-7

Date Collected: 04/14/25 00:00

Matrix: Water

Date Received: 04/25/25 12:05

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	0.0835	U	0.101	0.102	1.00	0.166	pCi/L	04/30/25 12:58	05/27/25 14:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.7		30 - 110					04/30/25 12:58	05/27/25 14:23	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	0.559	U	0.411	0.415	1.00	0.633	pCi/L	04/30/25 13:04	05/24/25 10:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.7		30 - 110					04/30/25 13:04	05/24/25 10:41	1
Y Carrier	75.9		30 - 110					04/30/25 13:04	05/24/25 10:41	1

Client Sample Results

Client: Consumers Energy
 Project/Site: JH Campbell Background Wells

Job ID: 160-57889-1

Client Sample ID: DUP-01
 Date Collected: 04/14/25 00:00
 Date Received: 04/25/25 12:05

Lab Sample ID: 160-57889-7
 Matrix: Water

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.643		0.423	0.427	5.00	0.633	pCi/L		05/28/25 11:41	1

Client Sample ID: FB-01
 Date Collected: 04/15/25 13:23
 Date Received: 04/25/25 12:05

Lab Sample ID: 160-57889-8
 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	-0.0325	U	0.106	0.106	1.00	0.223	pCi/L	04/30/25 12:58	05/27/25 14:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.1		30 - 110					04/30/25 12:58	05/27/25 14:23	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	0.328	U	0.374	0.375	1.00	0.613	pCi/L	04/30/25 13:04	05/24/25 10:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.1		30 - 110					04/30/25 13:04	05/24/25 10:42	1
Y Carrier	74.4		30 - 110					04/30/25 13:04	05/24/25 10:42	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.296	U	0.389	0.390	5.00	0.613	pCi/L		05/28/25 11:41	1

Client Sample ID: EB-01
 Date Collected: 04/15/25 13:35
 Date Received: 04/25/25 12:05

Lab Sample ID: 160-57889-9
 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	0.0671	U	0.104	0.104	1.00	0.179	pCi/L	04/30/25 12:58	05/27/25 14:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		30 - 110					04/30/25 12:58	05/27/25 14:23	1

Client Sample Results

Client: Consumers Energy
 Project/Site: JH Campbell Background Wells

Job ID: 160-57889-1

Client Sample ID: EB-01

Lab Sample ID: 160-57889-9

Date Collected: 04/15/25 13:35

Matrix: Water

Date Received: 04/25/25 12:05

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	0.355	U	0.337	0.339	1.00	0.539	pCi/L	04/30/25 13:04	05/24/25 10:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		30 - 110					04/30/25 13:04	05/24/25 10:42	1
Y Carrier	78.9		30 - 110					04/30/25 13:04	05/24/25 10:42	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.422	U	0.353	0.355	5.00	0.539	pCi/L		05/28/25 11:41	1

QC Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-57889-1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-715330/1-A
Matrix: Water
Analysis Batch: 719413

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 715330

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.01156	U	0.0724	0.0724	1.00	0.148	pCi/L	04/30/25 12:58	05/27/25 12:16	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	88.0		30 - 110					04/30/25 12:58	05/27/25 12:16	1

Lab Sample ID: LCS 160-715330/2-A
Matrix: Water
Analysis Batch: 719413

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 715330

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	9.58	9.175		1.07	1.00	0.230	pCi/L	96	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	87.7		30 - 110					04/30/25 12:58	05/27/25 12:16

Lab Sample ID: 160-57889-1 DU
Matrix: Water
Analysis Batch: 719413

Client Sample ID: JHC-MW-15023
Prep Type: Total/NA
Prep Batch: 715330

Analyte	Sample		DU	DU	Total	RL	MDC	Unit	RER	RER Limit
	Result	Sample Qual	Result	Qual	Uncert. (2σ+/-)					
Radium-226	0.00529	U	0.03923	U	0.0989	1.00	0.181	pCi/L	0.20	1
Carrier	DU %Yield	DU Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	96.4		30 - 110					04/30/25 13:04	05/24/25 10:37	1

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-715332/1-A
Matrix: Water
Analysis Batch: 719073

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 715332

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	-0.08847	U	0.272	0.272	1.00	0.544	pCi/L	04/30/25 13:04	05/24/25 10:37	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	88.0		30 - 110					04/30/25 13:04	05/24/25 10:37	1
Y Carrier	74.8		30 - 110		04/30/25 13:04	05/24/25 10:37	1			

QC Sample Results

Client: Consumers Energy
 Project/Site: JH Campbell Background Wells

Job ID: 160-57889-1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-715332/2-A
Matrix: Water
Analysis Batch: 719073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 715332

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	
Radium-228	9.42	11.22		1.48	1.00	0.563	pCi/L	119	75 - 125	
LCS LCS										
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	87.7		30 - 110							
Y Carrier	78.5		30 - 110							

Lab Sample ID: 160-57889-1 DU
Matrix: Water
Analysis Batch: 719073

Client Sample ID: JHC-MW-15023
Prep Type: Total/NA
Prep Batch: 715332

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
										1
Radium-228	1.01		0.7231		0.399	1.00	0.566	pCi/L	0.35	1
DU DU										
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	96.4		30 - 110							
Y Carrier	79.6		30 - 110							

QC Association Summary

Client: Consumers Energy
 Project/Site: JH Campbell Background Wells

Job ID: 160-57889-1

Rad

Prep Batch: 715330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-57889-1	JHC-MW-15023	Total/NA	Water	PrecSep-21	
160-57889-2	JHC-MW-15024	Total/NA	Water	PrecSep-21	
160-57889-3	JHC-MW-15025	Total/NA	Water	PrecSep-21	
160-57889-4	JHC-MW-15026	Total/NA	Water	PrecSep-21	
160-57889-5	JHC-MW-15027	Total/NA	Water	PrecSep-21	
160-57889-6	JHC-MW-15028	Total/NA	Water	PrecSep-21	
160-57889-7	DUP-01	Total/NA	Water	PrecSep-21	
160-57889-8	FB-01	Total/NA	Water	PrecSep-21	
160-57889-9	EB-01	Total/NA	Water	PrecSep-21	
MB 160-715330/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-715330/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-57889-1 DU	JHC-MW-15023	Total/NA	Water	PrecSep-21	

Prep Batch: 715332

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-57889-1	JHC-MW-15023	Total/NA	Water	PrecSep_0	
160-57889-2	JHC-MW-15024	Total/NA	Water	PrecSep_0	
160-57889-3	JHC-MW-15025	Total/NA	Water	PrecSep_0	
160-57889-4	JHC-MW-15026	Total/NA	Water	PrecSep_0	
160-57889-5	JHC-MW-15027	Total/NA	Water	PrecSep_0	
160-57889-6	JHC-MW-15028	Total/NA	Water	PrecSep_0	
160-57889-7	DUP-01	Total/NA	Water	PrecSep_0	
160-57889-8	FB-01	Total/NA	Water	PrecSep_0	
160-57889-9	EB-01	Total/NA	Water	PrecSep_0	
MB 160-715332/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-715332/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-57889-1 DU	JHC-MW-15023	Total/NA	Water	PrecSep_0	

Tracer/Carrier Summary

Client: Consumers Energy
 Project/Site: JH Campbell Background Wells

Job ID: 160-57889-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	
160-57889-1	JHC-MW-15023	93.4	
160-57889-1 DU	JHC-MW-15023	96.4	
160-57889-2	JHC-MW-15024	89.5	
160-57889-3	JHC-MW-15025	84.9	
160-57889-4	JHC-MW-15026	93.9	
160-57889-5	JHC-MW-15027	92.1	
160-57889-6	JHC-MW-15028	96.9	
160-57889-7	DUP-01	88.7	
160-57889-8	FB-01	81.1	
160-57889-9	EB-01	94.1	
LCS 160-715330/2-A	Lab Control Sample	87.7	
MB 160-715330/1-A	Method Blank	88.0	
Tracer/Carrier Legend			
Ba = Ba Carrier			

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
160-57889-1	JHC-MW-15023	93.4	78.9
160-57889-1 DU	JHC-MW-15023	96.4	79.6
160-57889-2	JHC-MW-15024	89.5	76.3
160-57889-3	JHC-MW-15025	84.9	77.0
160-57889-4	JHC-MW-15026	93.9	78.9
160-57889-5	JHC-MW-15027	92.1	80.0
160-57889-6	JHC-MW-15028	96.9	78.1
160-57889-7	DUP-01	88.7	75.9
160-57889-8	FB-01	81.1	74.4
160-57889-9	EB-01	94.1	78.9
LCS 160-715332/2-A	Lab Control Sample	87.7	78.5
MB 160-715332/1-A	Method Blank	88.0	74.8
Tracer/Carrier Legend			
Ba = Ba Carrier			
Y = Y Carrier			

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Emil Blaj
Consumers Energy
135 W Trail Street
Jackson, Michigan 49201

Generated 5/28/2025 6:08:16 PM

JOB DESCRIPTION

JH Campbell Pond A Wells

JOB NUMBER

160-57887-1

Eurofins St. Louis

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 TestAmerica Project Manager.

Authorization



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Authorized for release by
Micha Korinhizer, Project Manager
Micha.Korinhizer@et.eurofinsus.com
(314)298-8566

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Case Narrative

Client: Consumers Energy
Project: JH Campbell Pond A Wells

Job ID: 160-57887-1

Job ID: 160-57887-1

Eurofins St. Louis

CASE NARRATIVE

Client: Consumers Energy

Project: JH Campbell CCR Groundwater Testing

Report Number: 160-57887-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition, all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method.

Eurofins Environment Testing attests to the validity of the laboratory data generated by Eurofins facilities reported herein. All analyses performed by Eurofins Environment Testing facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins Environment Testing's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Calculations are performed before rounding to avoid round-off errors in calculated results.

Proper preservation was noted for the methods performed on these samples, unless otherwise detailed below.

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.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

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

Receipt

The samples were received on 4/25/2025 12:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved. The temperatures of the 4 coolers at receipt time were 20.8°C, 21.4°C, 22.3°C and 22.4°C.

Receipt Exceptions

The sample collector name is not listed on the COC.

The following sample was received at the laboratory without a sample collection time documented on the chain of custody: DUP-02 (160-57887-6). A time of 12:00am was used to log the sample.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): JHC-MW-15006 (160-57887-1). The container labels list a time of 1734, while the COC lists a time of 1736. This was logged to match the COC.

Method 903.0 - Radium-226 (GFPC)

Samples JHC-MW-15006 (160-57887-1), JHC-MW-15007R (160-57887-2), JHC-MW-15008R (160-57887-3), JHC-MW-15009R (160-57887-4), JHC-MW-15011R (160-57887-5), DUP-02 (160-57887-6), FB-02 (160-57887-7) and EB-02 (160-57887-8) were analyzed for Radium-226 (GFPC). The samples were prepared on 4/29/2025 and analyzed on 5/27/2025.

Method 904.0 - Radium-228 (GFPC)

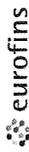
Samples JHC-MW-15006 (160-57887-1), JHC-MW-15007R (160-57887-2), JHC-MW-15008R (160-57887-3), JHC-MW-15009R (160-57887-4), JHC-MW-15011R (160-57887-5), DUP-02 (160-57887-6), FB-02 (160-57887-7) and EB-02 (160-57887-8) were analyzed for Radium-228 (GFPC). The samples were prepared on 4/29/2025 and analyzed on 5/24/2025.

Method Ra226_Ra228 - Combined Radium-226 and Radium-228

Samples JHC-MW-15006 (160-57887-1), JHC-MW-15007R (160-57887-2), JHC-MW-15008R (160-57887-3), JHC-MW-15009R (160-57887-4), JHC-MW-15011R (160-57887-5), DUP-02 (160-57887-6), FB-02 (160-57887-7) and EB-02 (160-57887-8) were analyzed for Combined Radium-226 and Radium-228. The samples were analyzed on 5/28/2025.

Eurofins St. Louis

Chain of Custody Record



Environment Testing

Client Information		Lab P/W: Korinnhizer, Micha L		Carrier Tracking No(s): 160-11904-5895.1																																																																																															
Client Contact: Emil Blaj		E-Mail: Micha.Korinnhizer@et.eurofins.com		State of Origin:																																																																																															
Company: Consumers Energy		PWID:		Job #: 160-11904-5895.1																																																																																															
Address: 135 W Trail Street		Due Date Requested:		Page: Page 1 of 1																																																																																															
City: Jackson		TAT Requested (days): 22 BD		Preservation Codes: D - HNO3 N - None																																																																																															
State, Zip: MI, 49201		Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Other:																																																																																															
Phone: 517-788-5888		PO #: PR #25040377 / PO4400131557		<table border="1"> <thead> <tr> <th>Sample Identification</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=Comp, G=grab)</th> <th>Matrix (W=water, S=solid, O=waste/oil, BT=titres, AS=AK)</th> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>90.0 - Radium-226 (GFC)</th> <th>90.0 - Radium-226 (GFC)</th> <th>Ra-226/Ra-228 - Combined Ra-226/Ra-228 calculation</th> <th>Total Number of Containers</th> <th>Special Instructions/Note:</th> </tr> </thead> <tbody> <tr> <td>JHC-MW-15006</td> <td>4/14/25</td> <td>1736</td> <td></td> <td>Water</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>X</td> <td>X</td> <td></td> <td>2</td> <td rowspan="8"> <p>160-57887 Chain of Custody</p> </td> </tr> <tr> <td>JHC-MW-15007R</td> <td>4/14/25</td> <td>1641</td> <td></td> <td>Water</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>JHC-MW-15008R</td> <td>4/14/25</td> <td>1516</td> <td></td> <td>Water</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>JHC-MW-15009R</td> <td>4/14/25</td> <td>1401</td> <td></td> <td>Water</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>JHC-MW-15011R</td> <td>4/14/25</td> <td>1816</td> <td></td> <td>Water</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>DUP-02</td> <td>4/14/25</td> <td>-</td> <td></td> <td>Water</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>FB-02</td> <td>4/14/25</td> <td>1843</td> <td></td> <td>Water</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>EB-02</td> <td>4/14/25</td> <td>1835</td> <td></td> <td>Water</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>X</td> <td>X</td> <td>2</td> </tr> </tbody> </table>		Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=titres, AS=AK)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	90.0 - Radium-226 (GFC)	90.0 - Radium-226 (GFC)	Ra-226/Ra-228 - Combined Ra-226/Ra-228 calculation	Total Number of Containers	Special Instructions/Note:	JHC-MW-15006	4/14/25	1736		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X		2	<p>160-57887 Chain of Custody</p>	JHC-MW-15007R	4/14/25	1641		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	2	JHC-MW-15008R	4/14/25	1516		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	2	JHC-MW-15009R	4/14/25	1401		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	2	JHC-MW-15011R	4/14/25	1816		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	2	DUP-02	4/14/25	-		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	2	FB-02	4/14/25	1843		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	2	EB-02	4/14/25	1835		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	2
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)			Matrix (W=water, S=solid, O=waste/oil, BT=titres, AS=AK)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	90.0 - Radium-226 (GFC)	90.0 - Radium-226 (GFC)	Ra-226/Ra-228 - Combined Ra-226/Ra-228 calculation	Total Number of Containers	Special Instructions/Note:																																																																																						
JHC-MW-15006	4/14/25	1736				Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X		2	<p>160-57887 Chain of Custody</p>																																																																																						
JHC-MW-15007R	4/14/25	1641				Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	2																																																																																								
JHC-MW-15008R	4/14/25	1516				Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	2																																																																																								
JHC-MW-15009R	4/14/25	1401		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	2																																																																																										
JHC-MW-15011R	4/14/25	1816		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	2																																																																																										
DUP-02	4/14/25	-		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	2																																																																																										
FB-02	4/14/25	1843		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	2																																																																																										
EB-02	4/14/25	1835		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	2																																																																																										
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																																																																																																	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:																																																																																																	
Empty Kit Relinquished by:		Method of Shipment:																																																																																																	
Relinquished by: <i>Emil Blaj</i>		Received by: <i>UPS</i>																																																																																																	
Relinquished by: <i>UPS</i>		Date/Time: 04-23-2025 1430																																																																																																	
Relinquished by:		Date/Time: 4/25/25 1205																																																																																																	
Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Custody Seal No.:																																																																																																	
Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:																																																																																																	



Login Sample Receipt Checklist

Client: Consumers Energy

Job Number: 160-57887-1

Login Number: 57887

List Source: Eurofins St. Louis

List Number: 1

Creator: Worthington, Sierra M

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?	False	The samplers name is not listed on the COC.
There are no discrepancies between the containers received and the COC.	False	The time for sample 1 does not match.
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.	False	No time on COC or sample containers for sample 6
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-57887-1

Qualifiers

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 Summary

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-57887-1

Method	Method Description	Protocol	Laboratory
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
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



Sample Summary

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-57887-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-57887-1	JHC-MW-15006	Water	04/14/25 17:36	04/25/25 12:05
160-57887-2	JHC-MW-15007R	Water	04/14/25 16:41	04/25/25 12:05
160-57887-3	JHC-MW-15008R	Water	04/14/25 15:16	04/25/25 12:05
160-57887-4	JHC-MW-15009R	Water	04/14/25 14:01	04/25/25 12:05
160-57887-5	JHC-MW-15011R	Water	04/14/25 18:16	04/25/25 12:05
160-57887-6	DUP-02	Water	04/14/25 00:00	04/25/25 12:05
160-57887-7	FB-02	Water	04/14/25 18:43	04/25/25 12:05
160-57887-8	EB-02	Water	04/14/25 18:35	04/25/25 12:05

1

2

3

4

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Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-57887-1

Client Sample ID: JHC-MW-15006

Lab Sample ID: 160-57887-1

Date Collected: 04/14/25 17:36

Matrix: Water

Date Received: 04/25/25 12:05

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	0.130	U	0.128	0.129	1.00	0.203	pCi/L	04/29/25 08:46	05/27/25 16:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.7		30 - 110					04/29/25 08:46	05/27/25 16:54	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	0.330	U	0.352	0.353	1.00	0.571	pCi/L	04/29/25 08:49	05/24/25 10:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.7		30 - 110					04/29/25 08:49	05/24/25 10:28	1
Y Carrier	71.4		30 - 110					04/29/25 08:49	05/24/25 10:28	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.459	U	0.375	0.376	5.00	0.571	pCi/L		05/28/25 10:53	1

Client Sample ID: JHC-MW-15007R

Lab Sample ID: 160-57887-2

Date Collected: 04/14/25 16:41

Matrix: Water

Date Received: 04/25/25 12:05

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	0.435		0.171	0.176	1.00	0.191	pCi/L	04/29/25 08:46	05/27/25 16:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.9		30 - 110					04/29/25 08:46	05/27/25 16:54	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	0.925		0.483	0.490	1.00	0.686	pCi/L	04/29/25 08:49	05/24/25 10:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.9		30 - 110					04/29/25 08:49	05/24/25 10:28	1
Y Carrier	70.7		30 - 110					04/29/25 08:49	05/24/25 10:28	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-57887-1

Client Sample ID: JHC-MW-15007R

Lab Sample ID: 160-57887-2

Date Collected: 04/14/25 16:41

Matrix: Water

Date Received: 04/25/25 12:05

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.36		0.512	0.521	5.00	0.686	pCi/L		05/28/25 10:53	1

Client Sample ID: JHC-MW-15008R

Lab Sample ID: 160-57887-3

Date Collected: 04/14/25 15:16

Matrix: Water

Date Received: 04/25/25 12:05

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	0.146	U	0.117	0.118	1.00	0.175	pCi/L	04/29/25 08:46	05/27/25 16:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.6		30 - 110					04/29/25 08:46	05/27/25 16:54	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	0.920		0.442	0.450	1.00	0.616	pCi/L	04/29/25 08:49	05/24/25 10:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.6		30 - 110					04/29/25 08:49	05/24/25 10:28	1
Y Carrier	74.0		30 - 110					04/29/25 08:49	05/24/25 10:28	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.07		0.457	0.465	5.00	0.616	pCi/L		05/28/25 10:53	1

Client Sample ID: JHC-MW-15009R

Lab Sample ID: 160-57887-4

Date Collected: 04/14/25 14:01

Matrix: Water

Date Received: 04/25/25 12:05

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	0.176		0.117	0.118	1.00	0.157	pCi/L	04/29/25 08:46	05/27/25 16:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.9		30 - 110					04/29/25 08:46	05/27/25 16:54	1

Client Sample Results

Client: Consumers Energy
 Project/Site: JH Campbell Pond A Wells

Job ID: 160-57887-1

Client Sample ID: JHC-MW-15009R

Lab Sample ID: 160-57887-4

Date Collected: 04/14/25 14:01

Matrix: Water

Date Received: 04/25/25 12:05

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	0.646		0.429	0.433	1.00	0.643	pCi/L	04/29/25 08:49	05/24/25 10:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.9		30 - 110					04/29/25 08:49	05/24/25 10:28	1
Y Carrier	72.9		30 - 110					04/29/25 08:49	05/24/25 10:28	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.823		0.445	0.449	5.00	0.643	pCi/L		05/28/25 10:53	1

Client Sample ID: JHC-MW-15011R

Lab Sample ID: 160-57887-5

Date Collected: 04/14/25 18:16

Matrix: Water

Date Received: 04/25/25 12:05

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	0.381		0.144	0.148	1.00	0.141	pCi/L	04/29/25 08:46	05/27/25 16:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		30 - 110					04/29/25 08:46	05/27/25 16:54	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	1.55		0.476	0.497	1.00	0.558	pCi/L	04/29/25 08:49	05/24/25 10:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		30 - 110					04/29/25 08:49	05/24/25 10:29	1
Y Carrier	75.1		30 - 110					04/29/25 08:49	05/24/25 10:29	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.93		0.497	0.519	5.00	0.558	pCi/L		05/28/25 10:53	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-57887-1

Client Sample ID: DUP-02

Lab Sample ID: 160-57887-6

Date Collected: 04/14/25 00:00

Matrix: Water

Date Received: 04/25/25 12:05

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	0.120	U	0.0971	0.0977	1.00	0.139	pCi/L	04/29/25 08:46	05/27/25 16:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.0		30 - 110					04/29/25 08:46	05/27/25 16:54	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	0.722		0.404	0.410	1.00	0.574	pCi/L	04/29/25 08:49	05/24/25 10:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.0		30 - 110					04/29/25 08:49	05/24/25 10:30	1
Y Carrier	71.4		30 - 110					04/29/25 08:49	05/24/25 10:30	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.842		0.416	0.421	5.00	0.574	pCi/L		05/28/25 10:53	1

Client Sample ID: FB-02

Lab Sample ID: 160-57887-7

Date Collected: 04/14/25 18:43

Matrix: Water

Date Received: 04/25/25 12:05

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	-0.00119	U	0.112	0.112	1.00	0.220	pCi/L	04/29/25 08:46	05/27/25 16:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.3		30 - 110					04/29/25 08:46	05/27/25 16:54	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	-0.181	U	0.359	0.359	1.00	0.703	pCi/L	04/29/25 08:49	05/24/25 10:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.3		30 - 110					04/29/25 08:49	05/24/25 10:30	1
Y Carrier	72.1		30 - 110					04/29/25 08:49	05/24/25 10:30	1

Client Sample Results

Client: Consumers Energy
 Project/Site: JH Campbell Pond A Wells

Job ID: 160-57887-1

Client Sample ID: FB-02

Lab Sample ID: 160-57887-7

Date Collected: 04/14/25 18:43

Matrix: Water

Date Received: 04/25/25 12:05

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.182	U	0.376	0.376	5.00	0.703	pCi/L		05/28/25 10:53	1

Client Sample ID: EB-02

Lab Sample ID: 160-57887-8

Date Collected: 04/14/25 18:35

Matrix: Water

Date Received: 04/25/25 12:05

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	0.0379	U	0.0809	0.0810	1.00	0.148	pCi/L	04/29/25 08:46	05/27/25 16:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.2		30 - 110					04/29/25 08:46	05/27/25 16:54	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	0.718		0.427	0.432	1.00	0.622	pCi/L	04/29/25 08:49	05/24/25 10:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.2		30 - 110					04/29/25 08:49	05/24/25 10:30	1
Y Carrier	71.4		30 - 110					04/29/25 08:49	05/24/25 10:30	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.755		0.435	0.440	5.00	0.622	pCi/L		05/28/25 10:53	1

QC Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-57887-1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-715206/1-A
Matrix: Water
Analysis Batch: 719413

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 715206

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.001125	U	0.0708	0.0708	1.00	0.150	pCi/L	04/29/25 08:46	05/27/25 16:53	1
Carrier	MB		Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	%Yield	MB Qualifier	30 - 110					04/29/25 08:46	05/27/25 16:53	1
	88.0									

Lab Sample ID: LCS 160-715206/2-A
Matrix: Water
Analysis Batch: 719413

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 715206

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	9.58	8.851		1.02	1.00	0.164	pCi/L	92	75 - 125
Carrier	LCS	LCS	Limits						
Ba Carrier	%Yield	LCS Qualifier	30 - 110						
	89.3								

Lab Sample ID: 160-57888-A-10-A DU
Matrix: Water
Analysis Batch: 719412

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 715206

Analyte	Sample		DU	DU	Total	RL	MDC	Unit	RER	RER
	Result	Sample Qual	Result	Qual	Uncert. (2σ+/-)					Limit
Radium-226	0.0482	U	-0.01872	U	0.0618	1.00	0.145	pCi/L	0.44	1
Carrier	DU	DU	Limits							
Ba Carrier	%Yield	DU Qualifier	30 - 110							
	85.9									

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-715208/1-A
Matrix: Water
Analysis Batch: 719058

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 715208

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.5178	U	0.388	0.391	1.00	0.595	pCi/L	04/29/25 08:49	05/24/25 10:28	1
Carrier	MB		Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	%Yield	MB Qualifier	30 - 110					04/29/25 08:49	05/24/25 10:28	1
Y Carrier	74.4		30 - 110					04/29/25 08:49	05/24/25 10:28	1

QC Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-57887-1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-715208/2-A
Matrix: Water
Analysis Batch: 719058

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 715208

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	9.42	11.80		1.54	1.00	0.552	pCi/L	125	75 - 125
LCS LCS									
Carrier	%Yield	Qualifier	Limits						
Ba Carrier	89.3		30 - 110						
Y Carrier	76.3		30 - 110						

Lab Sample ID: 160-57888-A-10-B DU
Matrix: Water
Analysis Batch: 719073

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 715208

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	1.58		1.215		0.499	1.00	0.633	pCi/L	0.37	1
DU DU										
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	85.9		30 - 110							
Y Carrier	72.9		30 - 110							

QC Association Summary

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-57887-1

Rad

Prep Batch: 715206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-57887-1	JHC-MW-15006	Total/NA	Water	PrecSep-21	
160-57887-2	JHC-MW-15007R	Total/NA	Water	PrecSep-21	
160-57887-3	JHC-MW-15008R	Total/NA	Water	PrecSep-21	
160-57887-4	JHC-MW-15009R	Total/NA	Water	PrecSep-21	
160-57887-5	JHC-MW-15011R	Total/NA	Water	PrecSep-21	
160-57887-6	DUP-02	Total/NA	Water	PrecSep-21	
160-57887-7	FB-02	Total/NA	Water	PrecSep-21	
160-57887-8	EB-02	Total/NA	Water	PrecSep-21	
MB 160-715206/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-715206/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-57888-A-10-A DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 715208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-57887-1	JHC-MW-15006	Total/NA	Water	PrecSep_0	
160-57887-2	JHC-MW-15007R	Total/NA	Water	PrecSep_0	
160-57887-3	JHC-MW-15008R	Total/NA	Water	PrecSep_0	
160-57887-4	JHC-MW-15009R	Total/NA	Water	PrecSep_0	
160-57887-5	JHC-MW-15011R	Total/NA	Water	PrecSep_0	
160-57887-6	DUP-02	Total/NA	Water	PrecSep_0	
160-57887-7	FB-02	Total/NA	Water	PrecSep_0	
160-57887-8	EB-02	Total/NA	Water	PrecSep_0	
MB 160-715208/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-715208/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-57888-A-10-B DU	Duplicate	Total/NA	Water	PrecSep_0	

Tracer/Carrier Summary

Client: Consumers Energy
 Project/Site: JH Campbell Pond A Wells

Job ID: 160-57887-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (30-110)
160-57887-1	JHC-MW-15006	88.7
160-57887-2	JHC-MW-15007R	84.9
160-57887-3	JHC-MW-15008R	93.6
160-57887-4	JHC-MW-15009R	85.9
160-57887-5	JHC-MW-15011R	94.1
160-57887-6	DUP-02	91.0
160-57887-7	FB-02	89.3
160-57887-8	EB-02	88.2
160-57888-A-10-A DU	Duplicate	85.9
LCS 160-715206/2-A	Lab Control Sample	89.3
MB 160-715206/1-A	Method Blank	88.0

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
160-57887-1	JHC-MW-15006	88.7	71.4
160-57887-2	JHC-MW-15007R	84.9	70.7
160-57887-3	JHC-MW-15008R	93.6	74.0
160-57887-4	JHC-MW-15009R	85.9	72.9
160-57887-5	JHC-MW-15011R	94.1	75.1
160-57887-6	DUP-02	91.0	71.4
160-57887-7	FB-02	89.3	72.1
160-57887-8	EB-02	88.2	71.4
160-57888-A-10-B DU	Duplicate	85.9	72.9
LCS 160-715208/2-A	Lab Control Sample	89.3	76.3
MB 160-715208/1-A	Method Blank	88.0	74.4

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Emil Blaj
Consumers Energy
135 W Trail Street
Jackson, Michigan 49201

Generated 5/23/2025 5:22:52 PM

JOB DESCRIPTION

JH Campbell Supplemental Wells

JOB NUMBER

160-57886-1

Eurofins St. Louis

Job Notes

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Case Narrative

Client: Consumers Energy
Project: JH Campbell Supplemental Wells

Job ID: 160-57886-1

Job ID: 160-57886-1

Eurofins St. Louis

CASE NARRATIVE

Client: Consumers Energy

Project: JH Campbell CCR Groundwater Testing

Report Number: 160-57886-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition, all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method.

Eurofins Environment Testing attests to the validity of the laboratory data generated by Eurofins facilities reported herein. All analyses performed by Eurofins Environment Testing facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins Environment Testing's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Calculations are performed before rounding to avoid round-off errors in calculated results.

Proper preservation was noted for the methods performed on these samples, unless otherwise detailed below.

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.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

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

Receipt

The samples were received on 4/25/2025 12:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved. The temperatures of the 4 coolers at receipt time were 20.8°C, 21.4°C, 22.3°C and 22.4°C.

Receipt Exceptions

The following sample was received at the laboratory without a sample collection time or sample collector name documented on the chain of custody: DUP-07 (160-57886-7). A time of 12:00am was used to log the sample.

Method 903.0 - Radium-226 (GFPC)

Samples MW-14S (160-57886-1), PZ-23S (160-57886-2), PZ-24S (160-57886-3), PZ-40S (160-57886-4), TW-19-05 (160-57886-5), TW-19-06A (160-57886-6) and DUP-07 (160-57886-7) were analyzed for Radium-226 (GFPC). The samples were prepared on 4/29/2025 and analyzed on 5/22/2025.

Method 904.0 - Radium-228 (GFPC)

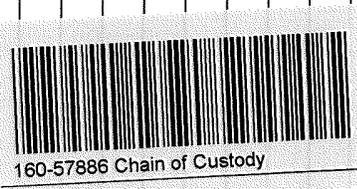
Samples MW-14S (160-57886-1), PZ-23S (160-57886-2), PZ-24S (160-57886-3), PZ-40S (160-57886-4), TW-19-05 (160-57886-5), TW-19-06A (160-57886-6) and DUP-07 (160-57886-7) were analyzed for Radium-228 (GFPC). The samples were prepared on 4/29/2025 and analyzed on 5/22/2025.

Method Ra226_Ra228 - Combined Radium-226 and Radium-228

Samples MW-14S (160-57886-1), PZ-23S (160-57886-2), PZ-24S (160-57886-3), PZ-40S (160-57886-4), TW-19-05 (160-57886-5), TW-19-06A (160-57886-6) and DUP-07 (160-57886-7) were analyzed for Combined Radium-226 and Radium-228. The samples were analyzed on 5/23/2025.

Eurofins St. Louis

Chain of Custody Record

Client Information Client Contact: Emil Blaj Company: Consumers Energy Address: 135 W Trail Street City: Jackson State: MI, Zip: 49201 Phone: 517-788-5888 Email: emil.blaj@cmsenergy.com Project Name: JH Campbell Supplemental Wells Site:		Lab PM: Korrinhizer, Micha L E-Mail: Micha.Korrinhizer@et.eurofinsus.com Carrier Tracking No(s): State of Origin:		COC No: 160-11904-5895.1 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): 22 BD Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No PO #: PR #25040377 / PO4400131557 WO #: 25-0226 Project #: 24-0226 SSOW#:		Analysis Requested			
Matrix (W=water, S=solid, O=waste/oil, BT=titus, A=air) Sample Type (C=comp, G=grab) Sample Date Sample Time Preservation Code		Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> 903.0 - Radium-226 (GFC) <input checked="" type="checkbox"/> D <input checked="" type="checkbox"/> N 904.0 - Radium-228 (GFC) <input checked="" type="checkbox"/> D <input checked="" type="checkbox"/> N Ra226/Ra228 GFC - Combined Ra-226/Ra-228 calculation <input checked="" type="checkbox"/>			
Sample Identification MW-14S PZ-23S PZ-24S PZ-40S TW-19-05 TW-19-06A DUP-07		Total Number of containers 2 2 2 2 2 2 2			
Special Instructions/Note: 					
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)					
Empty Kit Relinquished by: _____ Date: _____ Relinquished by: <i>Emil Blaj</i> Date/Time: 04-23-2025 1430 Company: Consumers Energy Relinquished by: <i>JPS</i> Date/Time: 04-23-2025 1205 Company: Eurofins Relinquished by: _____ Date/Time: _____ Company: _____ Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Cooler Temperature(s) °C and Other Remarks:					



Login Sample Receipt Checklist

Client: Consumers Energy

Job Number: 160-57886-1

Login Number: 57886

List Source: Eurofins St. Louis

List Number: 1

Creator: Worthington, Sierra M

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?	False	The samplers name is not listed on the COC.
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.	False	No time on COC or sample containers for sample 7
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Consumers Energy
Project/Site: JH Campbell Supplemental Wells

Job ID: 160-57886-1

Qualifiers

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 Summary

Client: Consumers Energy
Project/Site: JH Campbell Supplemental Wells

Job ID: 160-57886-1

Method	Method Description	Protocol	Laboratory
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
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



Sample Summary

Client: Consumers Energy
Project/Site: JH Campbell Supplemental Wells

Job ID: 160-57886-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-57886-1	MW-14S	Water	04/15/25 18:41	04/25/25 12:05
160-57886-2	PZ-23S	Water	04/15/25 17:56	04/25/25 12:05
160-57886-3	PZ-24S	Water	04/15/25 15:22	04/25/25 12:05
160-57886-4	PZ-40S	Water	04/15/25 12:51	04/25/25 12:05
160-57886-5	TW-19-05	Water	04/15/25 15:36	04/25/25 12:05
160-57886-6	TW-19-06A	Water	04/15/25 17:01	04/25/25 12:05
160-57886-7	DUP-07	Water	04/15/25 00:00	04/25/25 12:05

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Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Supplemental Wells

Job ID: 160-57886-1

Client Sample ID: MW-14S

Lab Sample ID: 160-57886-1

Date Collected: 04/15/25 18:41

Matrix: Water

Date Received: 04/25/25 12:05

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	0.0522	U	0.220	0.220	1.00	0.416	pCi/L	04/29/25 08:50	05/22/25 19:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.9		30 - 110					04/29/25 08:50	05/22/25 19:28	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	0.176	U	0.378	0.378	1.00	0.658	pCi/L	04/29/25 08:56	05/22/25 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.9		30 - 110					04/29/25 08:56	05/22/25 11:59	1
Y Carrier	77.8		30 - 110					04/29/25 08:56	05/22/25 11:59	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.228	U	0.437	0.437	5.00	0.658	pCi/L		05/23/25 12:40	1

Client Sample ID: PZ-23S

Lab Sample ID: 160-57886-2

Date Collected: 04/15/25 17:56

Matrix: Water

Date Received: 04/25/25 12:05

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	0.0180	U	0.156	0.156	1.00	0.315	pCi/L	04/29/25 08:50	05/22/25 19:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.9		30 - 110					04/29/25 08:50	05/22/25 19:28	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	0.322	U	0.352	0.353	1.00	0.573	pCi/L	04/29/25 08:56	05/22/25 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.9		30 - 110					04/29/25 08:56	05/22/25 11:59	1
Y Carrier	77.4		30 - 110					04/29/25 08:56	05/22/25 11:59	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Supplemental Wells

Job ID: 160-57886-1

Client Sample ID: PZ-23S

Date Collected: 04/15/25 17:56

Date Received: 04/25/25 12:05

Lab Sample ID: 160-57886-2

Matrix: Water

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.339	U	0.385	0.386	5.00	0.573	pCi/L		05/23/25 12:40	1

Client Sample ID: PZ-24S

Date Collected: 04/15/25 15:22

Date Received: 04/25/25 12:05

Lab Sample ID: 160-57886-3

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	0.0413	U	0.185	0.185	1.00	0.356	pCi/L	04/29/25 08:50	05/22/25 19:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		30 - 110					04/29/25 08:50	05/22/25 19:28	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	-0.0579	U	0.248	0.248	1.00	0.488	pCi/L	04/29/25 08:56	05/22/25 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		30 - 110					04/29/25 08:56	05/22/25 11:59	1
Y Carrier	84.9		30 - 110					04/29/25 08:56	05/22/25 11:59	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0167	U	0.309	0.309	5.00	0.488	pCi/L		05/23/25 15:26	1

Client Sample ID: PZ-40S

Date Collected: 04/15/25 12:51

Date Received: 04/25/25 12:05

Lab Sample ID: 160-57886-4

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	0.115	U	0.152	0.153	1.00	0.255	pCi/L	04/29/25 08:50	05/22/25 19:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.1		30 - 110					04/29/25 08:50	05/22/25 19:28	1

Client Sample Results

Client: Consumers Energy
 Project/Site: JH Campbell Supplemental Wells

Job ID: 160-57886-1

Client Sample ID: PZ-40S

Lab Sample ID: 160-57886-4

Date Collected: 04/15/25 12:51

Matrix: Water

Date Received: 04/25/25 12:05

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	0.0900	U	0.290	0.290	1.00	0.518	pCi/L	04/29/25 08:56	05/22/25 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.1		30 - 110					04/29/25 08:56	05/22/25 11:59	1
Y Carrier	83.7		30 - 110					04/29/25 08:56	05/22/25 11:59	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.205	U	0.327	0.328	5.00	0.518	pCi/L		05/23/25 15:26	1

Client Sample ID: TW-19-05

Lab Sample ID: 160-57886-5

Date Collected: 04/15/25 15:36

Matrix: Water

Date Received: 04/25/25 12:05

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	0.315	U	0.234	0.236	1.00	0.337	pCi/L	04/29/25 08:50	05/22/25 19:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.7		30 - 110					04/29/25 08:50	05/22/25 19:28	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	0.339	U	0.362	0.364	1.00	0.589	pCi/L	04/29/25 08:56	05/22/25 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.7		30 - 110					04/29/25 08:56	05/22/25 11:59	1
Y Carrier	80.4		30 - 110					04/29/25 08:56	05/22/25 11:59	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.654		0.431	0.434	5.00	0.589	pCi/L		05/23/25 15:26	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Supplemental Wells

Job ID: 160-57886-1

Client Sample ID: TW-19-06A

Lab Sample ID: 160-57886-6

Date Collected: 04/15/25 17:01

Matrix: Water

Date Received: 04/25/25 12:05

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	0.100	U	0.253	0.253	1.00	0.455	pCi/L	04/29/25 08:50	05/22/25 19:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.6		30 - 110					04/29/25 08:50	05/22/25 19:28	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	-0.119	U	0.387	0.388	1.00	0.750	pCi/L	04/29/25 08:56	05/22/25 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.6		30 - 110					04/29/25 08:56	05/22/25 11:59	1
Y Carrier	76.6		30 - 110					04/29/25 08:56	05/22/25 11:59	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0190	U	0.462	0.463	5.00	0.750	pCi/L		05/23/25 15:26	1

Client Sample ID: DUP-07

Lab Sample ID: 160-57886-7

Date Collected: 04/15/25 00:00

Matrix: Water

Date Received: 04/25/25 12:05

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	-0.0514	U	0.200	0.200	1.00	0.415	pCi/L	04/29/25 08:50	05/22/25 19:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.9		30 - 110					04/29/25 08:50	05/22/25 19:28	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	-0.471	U	0.231	0.235	1.00	0.567	pCi/L	04/29/25 08:56	05/22/25 12:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.9		30 - 110					04/29/25 08:56	05/22/25 12:00	1
Y Carrier	86.0		30 - 110					04/29/25 08:56	05/22/25 12:00	1

Eurofins St. Louis

Client Sample Results

Client: Consumers Energy
 Project/Site: JH Campbell Supplemental Wells

Job ID: 160-57886-1

Client Sample ID: DUP-07
Date Collected: 04/15/25 00:00
Date Received: 04/25/25 12:05

Lab Sample ID: 160-57886-7
Matrix: Water

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.523	U	0.306	0.309	5.00	0.567	pCi/L		05/23/25 15:26	1



QC Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Supplemental Wells

Job ID: 160-57886-1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-715210/1-A
Matrix: Water
Analysis Batch: 718789

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 715210

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.2361	U	0.204	0.205	1.00	0.302	pCi/L	04/29/25 08:50	05/22/25 17:13	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	93.4		30 - 110			04/29/25 08:50	05/22/25 17:13	1		

Lab Sample ID: LCS 160-715210/2-A
Matrix: Water
Analysis Batch: 718789

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 715210

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	9.58	9.305		1.25	1.00	0.282	pCi/L	97	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Ba Carrier	89.5		30 - 110						

Lab Sample ID: 160-57886-7 DU
Matrix: Water
Analysis Batch: 718790

Client Sample ID: DUP-07
Prep Type: Total/NA
Prep Batch: 715210

Analyte	Sample Sample		DU	DU	Total	RL	MDC	Unit	RER	RER
	Result	Qual	Result	Qual	Uncert. (2σ+/-)					Limit
Radium-226	-0.0514	U	-0.02099	U	0.153	1.00	0.324	pCi/L		0.09
Carrier	DU %Yield	DU Qualifier	Limits			Prepared	Analyzed	Dil Fac		
Ba Carrier	88.2		30 - 110							

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-715212/1-A
Matrix: Water
Analysis Batch: 718787

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 715212

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	-0.1080	U	0.271	0.272	1.00	0.541	pCi/L	04/29/25 08:56	05/22/25 11:53	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	93.4		30 - 110			04/29/25 08:56	05/22/25 11:53	1		
Y Carrier	82.6		30 - 110			04/29/25 08:56	05/22/25 11:53	1		

QC Sample Results

Client: Consumers Energy
 Project/Site: JH Campbell Supplemental Wells

Job ID: 160-57886-1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-715212/2-A
Matrix: Water
Analysis Batch: 718787

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 715212

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	
Radium-228	9.42	8.822		1.25	1.00	0.564	pCi/L	94	75 - 125	
LCS LCS										
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	89.5		30 - 110							
Y Carrier	80.7		30 - 110							

Lab Sample ID: 160-57886-7 DU
Matrix: Water
Analysis Batch: 718789

Client Sample ID: DUP-07
Prep Type: Total/NA
Prep Batch: 715212

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
										1
Radium-228	-0.471	U	-0.01681	U	0.303	1.00	0.574	pCi/L	0.84	1
DU DU										
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	88.2		30 - 110							
Y Carrier	80.7		30 - 110							

QC Association Summary

Client: Consumers Energy
 Project/Site: JH Campbell Supplemental Wells

Job ID: 160-57886-1

Rad

Prep Batch: 715210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-57886-1	MW-14S	Total/NA	Water	PrecSep-21	
160-57886-2	PZ-23S	Total/NA	Water	PrecSep-21	
160-57886-3	PZ-24S	Total/NA	Water	PrecSep-21	
160-57886-4	PZ-40S	Total/NA	Water	PrecSep-21	
160-57886-5	TW-19-05	Total/NA	Water	PrecSep-21	
160-57886-6	TW-19-06A	Total/NA	Water	PrecSep-21	
160-57886-7	DUP-07	Total/NA	Water	PrecSep-21	
MB 160-715210/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-715210/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-57886-7 DU	DUP-07	Total/NA	Water	PrecSep-21	

Prep Batch: 715212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-57886-1	MW-14S	Total/NA	Water	PrecSep_0	
160-57886-2	PZ-23S	Total/NA	Water	PrecSep_0	
160-57886-3	PZ-24S	Total/NA	Water	PrecSep_0	
160-57886-4	PZ-40S	Total/NA	Water	PrecSep_0	
160-57886-5	TW-19-05	Total/NA	Water	PrecSep_0	
160-57886-6	TW-19-06A	Total/NA	Water	PrecSep_0	
160-57886-7	DUP-07	Total/NA	Water	PrecSep_0	
MB 160-715212/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-715212/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-57886-7 DU	DUP-07	Total/NA	Water	PrecSep_0	

Tracer/Carrier Summary

Client: Consumers Energy
 Project/Site: JH Campbell Supplemental Wells

Job ID: 160-57886-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (30-110)
160-57886-1	MW-14S	83.9
160-57886-2	PZ-23S	82.9
160-57886-3	PZ-24S	92.6
160-57886-4	PZ-40S	95.1
160-57886-5	TW-19-05	87.7
160-57886-6	TW-19-06A	80.6
160-57886-7	DUP-07	93.9
160-57886-7 DU	DUP-07	88.2
LCS 160-715210/2-A	Lab Control Sample	89.5
MB 160-715210/1-A	Method Blank	93.4

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
160-57886-1	MW-14S	83.9	77.8
160-57886-2	PZ-23S	82.9	77.4
160-57886-3	PZ-24S	92.6	84.9
160-57886-4	PZ-40S	95.1	83.7
160-57886-5	TW-19-05	87.7	80.4
160-57886-6	TW-19-06A	80.6	76.6
160-57886-7	DUP-07	93.9	86.0
160-57886-7 DU	DUP-07	88.2	80.7
LCS 160-715212/2-A	Lab Control Sample	89.5	80.7
MB 160-715212/1-A	Method Blank	93.4	82.6

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

To: JFirlit, JH Campbell Complex

From: EBlaj, T-258

Date: October 24, 2025

Subject: JH CAMPBELL SOLID WASTE DISPOSAL AREA – GROUNDWATER MONITORING
4th Quarter, 2025 – Background Wells

CC: HDRegister, P22-521
ADSantini, P20-215B-REM

Sarah Holmstrom, Project Manager
TRC Companies, Inc.
1540 Eisenhower Place
Ann Arbor, MI 48108

Chemistry Project: 25-0769

CE Laboratory Services conducted groundwater monitoring at the JH Campbell Solid Waste Disposal Area during the week of 10/06/2025, for the 4th Quarter requirement, as specified in the Hydrogeological Monitoring Plan for the site. The samples were received for analysis by the Chemistry department on 10/09/2025.

Samples for Radium analysis have been subcontracted to Eurofins/TestAmerica, Inc. and their results are being reported separately. Please note that the subcontracted work is not reported under the CE laboratory scope of accreditation.

The report that follows presents the results of the requested analytical testing; the results apply only to the samples, as received. All samples have been analyzed in accordance with the 2016 TNI Standard and the applicable A2LA accreditation scope for Laboratory Services. Any exceptions to applicable test method criteria and standard compliance are noted in the Case Narrative or flagged with applicable qualifiers in the analytical results section.

Reviewed and approved by:

Emil Blaj
Sr. Technical Analyst
Project Lead



Testing performed in accordance with the A2LA scope of accreditation specified in the listed certificate. The information contained in this report is the sole property of Consumers Energy. It cannot be reproduced except in full, and with consent from Consumers Energy, or the customer for which this report was issued.

CASE NARRATIVE

I. Sample Receipt

All samples were received within hold time and in good conditions; no anomalies were noted on the Sample Log-In Shipment Inspection Form during sample check-in. Identification of all samples included in the work order/project is provided in the sample summary section. Sample preservation upon receipt was verified by the sample custodian and confirmed to meet method requirements.

II. Methodology

Unless otherwise indicated, sample preparation and analysis was performed in accordance with the corresponding test methods from “Methods for the Determination of Inorganic Substances in Environmental Samples (EPA/600/R-93/100); SW-846, “Test Methods for Evaluating Solid Waste – Physical/Chemical Methods”, USEPA (latest revisions), and Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WPCF, 22nd Edition, 2012.

III. Results/Quality Control

Analytical results for this report are presented by laboratory sample ID, container & aliquot number. Results for the field blanks, field duplicates, and percent recoveries of the field matrix spike & matrix spike duplicate samples are included in the results section. Unless specifically noted in the case narrative, all method quality control requirements have been met. If any results are qualified, the corresponding data flags/qualifiers are listed on the last page of the results section. Any additional information on method performance, when applicable, is presented in this section of the case narrative. When data flags are not needed, the qualifiers text box on the last page is left blank, and a statement confirms that no exceptions occurred.

DEFINITIONS / QUALIFIERS

The following qualifiers and/or acronyms are used in the report where applicable:

<u>Acronym</u>	<u>Description</u>
RL	Reporting Limit
ND	Result not detected or below Reporting Limit
NT	Not a TNI Analyte
LCS	Laboratory Control Sample
LRB	Laboratory Reagent Blank (also referred to as Method Blank)
DUP	Duplicate
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
TDL	Target Detection Limit
SM	Standard Methods Compendium

<u>Qualifier</u>	<u>Description</u>
*	Generic data flag, applicable description added in the corresponding notes section
B	The analyte was detected in the LRB at a level which is significant relative to sample result

D	Reporting limit elevated due to dilution
E	Estimated due to result exceeding the linear range of the analyzer
H	The maximum recommended hold time was exceeded
I	Dilution required due to matrix interference; reporting limit elevated
J	Estimated due to result found above MDL but below PQL (or RL)
K	Reporting limit raised due to matrix interference
M	The precision for duplicate analysis was not met; RPD outside acceptance criteria
N	Non-homogeneous sample made analysis questionable
PI	Possible interference may have affected the accuracy of the laboratory result
Q	Matrix Spike or Matrix Spike Duplicate recovery outside acceptance criteria
R	Result confirmed by new sample preparation and reanalysis
X	Other notation required; comment listed in sample notes and/or case narrative

Customer Name: JH Campbell Complex
Work Order ID: Q4-2025 JHC Background Wells
Date Received: 10/9/2025
Chemistry Project: 25-0769

<u>Sample #</u>	<u>Field Sample ID</u>	<u>Matrix</u>	<u>Sample Date</u>	<u>Site</u>
25-0769-01	JHC-MW-15023	Groundwater	10/07/2025 16:31	JHC GW Monitoring - Background Wells
25-0769-02	JHC-MW-15024	Groundwater	10/07/2025 18:36	JHC GW Monitoring - Background Wells
25-0769-03	JHC-MW-15025	Groundwater	10/08/2025 10:06	JHC GW Monitoring - Background Wells
25-0769-04	JHC-MW-15026	Groundwater	10/08/2025 11:21	JHC GW Monitoring - Background Wells
25-0769-05	JHC-MW-15027	Groundwater	10/08/2025 12:51	JHC GW Monitoring - Background Wells
25-0769-06	JHC-MW-15028	Groundwater	10/08/2025 13:56	JHC GW Monitoring - Background Wells
25-0769-07	DUP-01	Groundwater	10/08/2025 00:00	JHC GW Monitoring - Background Wells
25-0769-08	FB-01	Water	10/08/2025 14:15	JHC GW Monitoring - Background Wells
25-0769-09	EB-01	Water	10/08/2025 14:30	JHC GW Monitoring - Background Wells
25-0769-10	JHC-MW-15025 Field MS	Groundwater	10/08/2025 11:21	JHC GW Monitoring - Background Wells
25-0769-11	JHC-MW-15025 Field MSD	Groundwater	10/08/2025 11:21	JHC GW Monitoring - Background Wells

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15023**
 Lab Sample ID: 25-0769-01
 Matrix: Groundwater

Laboratory Project: **25-0769**
 Collect Date: 10/07/2025
 Collect Time: 04:31 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0769-01-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/09/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0769-01-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	19		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	38		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	18400		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	1		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	21		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	ND		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	6500		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	2		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	1380		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	4910		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0769-01-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	5310		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	11000		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0769-01-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	111		mg/L	10.0	10/09/2025	AB25-1009-01



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
Field Sample ID: **JHC-MW-15023**
Lab Sample ID: 25-0769-01
Matrix: Groundwater

Laboratory Project: **25-0769**
Collect Date: 10/07/2025
Collect Time: 04:31 PM

Alkalinity by SM 2320B

Aliquot #: 25-0769-01-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	57000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Bicarbonate	57000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Carbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15024**
 Lab Sample ID: 25-0769-02
 Matrix: Groundwater

Laboratory Project: **25-0769**
 Collect Date: 10/07/2025
 Collect Time: 06:36 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0769-02-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/09/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0769-02-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	19		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	27		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	33000		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	2		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	27		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	ND		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	8700		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	1250		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	1		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	13000		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0769-02-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	21100		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	6570		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C

Aliquot #: 25-0769-02-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	181		mg/L	10.0	10/09/2025	AB25-1009-01



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
Field Sample ID: **JHC-MW-15024**
Lab Sample ID: 25-0769-02
Matrix: Groundwater

Laboratory Project: **25-0769**
Collect Date: 10/07/2025
Collect Time: 06:36 PM

Alkalinity by SM 2320B

Aliquot #: 25-0769-02-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	108000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Bicarbonate	108000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Carbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15025**
 Lab Sample ID: 25-0769-03
 Matrix: Groundwater

Laboratory Project: **25-0769**
 Collect Date: 10/08/2025
 Collect Time: 10:06 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0769-03-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/09/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0769-03-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	8		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	24		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	31100		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	1		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	1		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	ND		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	ND		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	8770		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	1430		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	34600		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0769-03-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	35700		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	8100		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0769-03-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	217		mg/L	10.0	10/09/2025	AB25-1009-01



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
Field Sample ID: **JHC-MW-15025**
Lab Sample ID: 25-0769-03
Matrix: Groundwater

Laboratory Project: **25-0769**
Collect Date: 10/08/2025
Collect Time: 10:06 AM

Alkalinity by SM 2320B

Aliquot #: 25-0769-03-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	120000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Bicarbonate	120000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Carbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15026**
 Lab Sample ID: 25-0769-04
 Matrix: Groundwater

Laboratory Project: **25-0769**
 Collect Date: 10/08/2025
 Collect Time: 11:21 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0769-04-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/09/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0769-04-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	9		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	ND		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	3930		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	39		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	ND		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	ND		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	522		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	4950		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0769-04-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	4230		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	7390		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0769-04-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	59		mg/L	10.0	10/09/2025	AB25-1009-01



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
Field Sample ID: **JHC-MW-15026**
Lab Sample ID: 25-0769-04
Matrix: Groundwater

Laboratory Project: **25-0769**
Collect Date: 10/08/2025
Collect Time: 11:21 AM

Alkalinity by SM 2320B

Aliquot #: 25-0769-04-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	ND		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Bicarbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Carbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15027**
 Lab Sample ID: 25-0769-05
 Matrix: Groundwater

Laboratory Project: **25-0769**
 Collect Date: 10/08/2025
 Collect Time: 12:51 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0769-05-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/09/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0769-05-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	13		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	29		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	29700		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	1		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	1		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	103		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	ND		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	7310		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	472		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	2310		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0769-05-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	1170		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	5500		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0769-05-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	139		mg/L	10.0	10/09/2025	AB25-1009-01



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
Field Sample ID: **JHC-MW-15027**
Lab Sample ID: 25-0769-05
Matrix: Groundwater

Laboratory Project: **25-0769**
Collect Date: 10/08/2025
Collect Time: 12:51 PM

Alkalinity by SM 2320B

Aliquot #: 25-0769-05-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	95400		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Bicarbonate	95400		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Carbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15028**
 Lab Sample ID: 25-0769-06
 Matrix: Groundwater

Laboratory Project: **25-0769**
 Collect Date: 10/08/2025
 Collect Time: 01:56 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0769-06-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/09/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0769-06-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	6		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	ND		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	19600		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	1		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	ND		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	ND		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	4450		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	371		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	1260		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0769-06-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	5620		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0769-06-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	88		mg/L	10.0	10/09/2025	AB25-1009-01



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
Field Sample ID: **JHC-MW-15028**
Lab Sample ID: 25-0769-06
Matrix: Groundwater

Laboratory Project: **25-0769**
Collect Date: 10/08/2025
Collect Time: 01:56 PM

Alkalinity by SM 2320B

Aliquot #: 25-0769-06-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	63100		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Bicarbonate	60000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Carbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **DUP-01**
 Lab Sample ID: 25-0769-07
 Matrix: Groundwater

Laboratory Project: **25-0769**
 Collect Date: 10/08/2025
 Collect Time: 12:00 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0769-07-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/09/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0769-07-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	9		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	ND		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	3860		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	1		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	40		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	ND		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	ND		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	515		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	4870		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0769-07-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	4340		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	7200		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0769-07-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	53		mg/L	10.0	10/09/2025	AB25-1009-01



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
Field Sample ID: **DUP-01**
Lab Sample ID: 25-0769-07
Matrix: Groundwater

Laboratory Project: **25-0769**
Collect Date: 10/08/2025
Collect Time: 12:00 AM

Alkalinity by SM 2320B

Aliquot #: 25-0769-07-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	ND		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Bicarbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Carbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **FB-01**
 Lab Sample ID: 25-0769-08
 Matrix: Water

Laboratory Project: **25-0769**
 Collect Date: 10/08/2025
 Collect Time: 02:15 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0769-08-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0769-08-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	ND		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	ND		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	ND		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	ND		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	ND		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	ND		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	ND		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0769-08-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	ND		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0769-08-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	ND		mg/L	10.0	10/09/2025	AB25-1009-01

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **EB-01**
 Lab Sample ID: 25-0769-09
 Matrix: Water

Laboratory Project: **25-0769**
 Collect Date: 10/08/2025
 Collect Time: 02:30 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0769-09-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0769-09-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	ND		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	ND		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	2		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	ND		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	ND		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	ND		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	ND		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	ND		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0769-09-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	ND		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0769-09-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	ND		mg/L	10.0	10/09/2025	AB25-1009-01



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15025 Field MS**
 Lab Sample ID: 25-0769-10
 Matrix: Groundwater

Laboratory Project: **25-0769**
 Collect Date: 10/08/2025
 Collect Time: 11:21 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0769-10-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	98.0		%	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0769-10-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	109		%	1.0	10/13/2025	AB25-1013-03
Arsenic	106		%	1.0	10/13/2025	AB25-1013-03
Barium	108		%	5.0	10/13/2025	AB25-1013-03
Beryllium	102		%	1.0	10/13/2025	AB25-1013-03
Boron	108		%	20.0	10/13/2025	AB25-1013-03
Cadmium	106		%	0.2	10/13/2025	AB25-1013-03
Calcium	89.1		%	1000.0	10/13/2025	AB25-1013-03
Chromium	98		%	1.0	10/13/2025	AB25-1013-03
Cobalt	98		%	6.0	10/13/2025	AB25-1013-03
Copper	100		%	1.0	10/13/2025	AB25-1013-03
Iron	105		%	20.0	10/13/2025	AB25-1013-03
Lead	102		%	1.0	10/13/2025	AB25-1013-03
Lithium	100		%	10.0	10/13/2025	AB25-1013-03
Magnesium	107		%	1000.0	10/13/2025	AB25-1013-03
Molybdenum	110		%	5.0	10/13/2025	AB25-1013-03
Nickel	98		%	2.0	10/13/2025	AB25-1013-03
Potassium	105		%	100.0	10/13/2025	AB25-1013-03
Selenium	105		%	1.0	10/13/2025	AB25-1013-03
Silver	101		%	0.2	10/13/2025	AB25-1013-03
Sodium	104		%	1000.0	10/13/2025	AB25-1013-03
Thallium	106		%	2.0	10/13/2025	AB25-1013-03
Vanadium	103		%	2.0	10/13/2025	AB25-1013-03
Zinc	99		%	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0769-10-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	104		%	1000.0	10/10/2025	AB25-1010-02
Fluoride	92		%	1000.0	10/10/2025	AB25-1010-02
Sulfate	94		%	1000.0	10/10/2025	AB25-1010-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Background Wells (395496)**
 Field Sample ID: **JHC-MW-15025 Field MSD**
 Lab Sample ID: 25-0769-11
 Matrix: Groundwater

Laboratory Project: **25-0769**
 Collect Date: 10/08/2025
 Collect Time: 11:21 AM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0769-11-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	100.0		%	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0769-11-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	108		%	1.0	10/13/2025	AB25-1013-03
Arsenic	107		%	1.0	10/13/2025	AB25-1013-03
Barium	106		%	5.0	10/13/2025	AB25-1013-03
Beryllium	102		%	1.0	10/13/2025	AB25-1013-03
Boron	107		%	20.0	10/13/2025	AB25-1013-03
Cadmium	106		%	0.2	10/13/2025	AB25-1013-03
Calcium	106		%	1000.0	10/13/2025	AB25-1013-03
Chromium	99		%	1.0	10/13/2025	AB25-1013-03
Cobalt	99		%	6.0	10/13/2025	AB25-1013-03
Copper	96		%	1.0	10/13/2025	AB25-1013-03
Iron	107		%	20.0	10/13/2025	AB25-1013-03
Lead	102		%	1.0	10/13/2025	AB25-1013-03
Lithium	101		%	10.0	10/13/2025	AB25-1013-03
Magnesium	107		%	1000.0	10/13/2025	AB25-1013-03
Molybdenum	110		%	5.0	10/13/2025	AB25-1013-03
Nickel	98		%	2.0	10/13/2025	AB25-1013-03
Potassium	103		%	100.0	10/13/2025	AB25-1013-03
Selenium	106		%	1.0	10/13/2025	AB25-1013-03
Silver	101		%	0.2	10/13/2025	AB25-1013-03
Sodium	107		%	1000.0	10/13/2025	AB25-1013-03
Thallium	107		%	2.0	10/13/2025	AB25-1013-03
Vanadium	102		%	2.0	10/13/2025	AB25-1013-03
Zinc	98		%	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0769-11-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	105		%	1000.0	10/10/2025	AB25-1010-02
Fluoride	92		%	1000.0	10/10/2025	AB25-1010-02
Sulfate	95		%	1000.0	10/10/2025	AB25-1010-02



Analytical Report

Report Date: 10/24/25

Laboratory Services
A CENTURY OF EXCELLENCE

Data Qualifiers	Exception Summary
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No exceptions occurred.

TITLE: SAMPLE LOG-IN – SHIPMENT INSPECTION FORM

Project Number: 25-0769 Inspection Date: 10/09/25 Inspection By: CLE/FMW

Sample Origin/Project Name: Q4-2025 JHC Background

Shipment Delivered By: Enter the type of shipment carrier.

Inter-Company Mail _____ FedEx _____ UPS _____ USPS _____

Tracking Number: _____ Other Carry In (whom) CLE-Consumers

Shipping Containers: Enter the type and number of shipping containers received.

Cooler (1)+(1)-2 Cardboard Box _____ Custom Case _____ Envelope/Mailer _____

Loose/Unpackaged Containers _____ Other _____

Condition of Shipment: Enter the as-received condition of the shipment container.

Damaged Shipment Observed: None Dented _____ Leaking _____

Other _____

Shipment Security: Enter if any of the shipping containers were opened before receipt.

Shipping Containers Received: Opened _____ Sealed N/A _____

Enclosed Documents: Enter the type of documents enclosed with the shipment.

CoC Work Request _____ Air Data Sheet _____ Other _____

Temperature of Containers: Measure the temperature of several sample containers.

As-Received Temperature Range 3.8-4.2 °C Samples Received on Ice: Yes No _____

M&TE # and Expiration 15021723 / 7-7-26

Number and Type of Containers: Enter the type and total number of sample containers received.

Container Type	Water	Soil	Other	Broken	Leaking
VOA (40mL or <u>60mL</u>)	<u>14</u>	_____	_____	_____	_____
Quart/Liter (g <u>10</u>)	<u>18</u>	_____	_____	_____	_____
9-oz (amber glass jar)	_____	_____	_____	_____	_____
2-oz (amber glass)	_____	_____	_____	_____	_____
125 mL (plastic)	<u>20</u>	_____	_____	_____	_____
24 mL vial (glass)	_____	_____	_____	_____	_____
250 mL (plastic)	<u>9</u>	_____	_____	_____	_____
Other _____	_____	_____	_____	_____	_____

All sample pH meeting criteria? Yes No _____ N/A _____ pH paper lot # 210204 Exp. Date 12-1-26

Indicate if an Exception Report (Page 2 of 2) is needed: Yes _____ No

To: JFirlit, JH Campbell Complex

From: EBlaj, T-258

Date: October 24, 2025

Subject: JH CAMPBELL SOLID WASTE DISPOSAL AREA – GROUNDWATER MONITORING
4th Quarter, 2025 – Pond A Wells

CC: HDRegister, P22-521
ADSantini, P20-215B-REM

Sarah Holmstrom, Project Manager
TRC Companies, Inc.
1540 Eisenhower Place
Ann Arbor, MI 48108

Chemistry Project: 25-0770

CE Laboratory Services conducted groundwater monitoring at the JH Campbell Solid Waste Disposal Area during the week of 10/06/2025, for the 4th Quarter requirement, as specified in the Hydrogeological Monitoring Plan for the site. The samples were received for analysis by the Chemistry department on 10/09/2025.

Samples for Radium analysis have been subcontracted to Eurofins/TestAmerica, Inc. and their results are being reported separately. Please note that the subcontracted work is not reported under the CE laboratory scope of accreditation.

The report that follows presents the results of the requested analytical testing; the results apply only to the samples, as received. All samples have been analyzed in accordance with the 2016 TNI Standard and the applicable A2LA accreditation scope for Laboratory Services. Any exceptions to applicable test method criteria and standard compliance are noted in the Case Narrative or flagged with applicable qualifiers in the analytical results section.

Reviewed and approved by:

Emil Blaj
Sr. Technical Analyst
Project Lead



Testing performed in accordance with the A2LA scope of accreditation specified in the listed certificate. The information contained in this report is the sole property of Consumers Energy. It cannot be reproduced except in full, and with consent from Consumers Energy, or the customer for which this report was issued.

CASE NARRATIVE

I. Sample Receipt

All samples were received within hold time and in good conditions; no anomalies were noted on the Sample Log-In Shipment Inspection Form during sample check-in. Identification of all samples included in the work order/project is provided in the sample summary section. Sample preservation upon receipt was verified by the sample custodian and confirmed to meet method requirements.

II. Methodology

Unless otherwise indicated, sample preparation and analysis was performed in accordance with the corresponding test methods from “Methods for the Determination of Inorganic Substances in Environmental Samples (EPA/600/R-93/100); SW-846, “Test Methods for Evaluating Solid Waste – Physical/Chemical Methods”, USEPA (latest revisions), and Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WPCF, 22nd Edition, 2012.

III. Results/Quality Control

Analytical results for this report are presented by laboratory sample ID, container & aliquot number. Results for the field blanks, field duplicates, and percent recoveries of the field matrix spike & matrix spike duplicate samples are included in the results section. Unless specifically noted in the case narrative, all method quality control requirements have been met. If any results are qualified, the corresponding data flags/qualifiers are listed on the last page of the results section. Any additional information on method performance, when applicable, is presented in this section of the case narrative. When data flags are not needed, the qualifiers text box on the last page is left blank, and a statement confirms that no exceptions occurred.

DEFINITIONS / QUALIFIERS

The following qualifiers and/or acronyms are used in the report where applicable:

<u>Acronym</u>	<u>Description</u>
RL	Reporting Limit
ND	Result not detected or below Reporting Limit
NT	Not a TNI Analyte
LCS	Laboratory Control Sample
LRB	Laboratory Reagent Blank (also referred to as Method Blank)
DUP	Duplicate
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
TDL	Target Detection Limit
SM	Standard Methods Compendium

<u>Qualifier</u>	<u>Description</u>
*	Generic data flag, applicable description added in the corresponding notes section
B	The analyte was detected in the LRB at a level which is significant relative to sample result

D	Reporting limit elevated due to dilution
E	Estimated due to result exceeding the linear range of the analyzer
H	The maximum recommended hold time was exceeded
I	Dilution required due to matrix interference; reporting limit elevated
J	Estimated due to result found above MDL but below PQL (or RL)
K	Reporting limit raised due to matrix interference
M	The precision for duplicate analysis was not met; RPD outside acceptance criteria
N	Non-homogeneous sample made analysis questionable
PI	Possible interference may have affected the accuracy of the laboratory result
Q	Matrix Spike or Matrix Spike Duplicate recovery outside acceptance criteria
R	Result confirmed by new sample preparation and reanalysis
X	Other notation required; comment listed in sample notes and/or case narrative

Work Order Sample Summary

Customer Name: JH Campbell Complex
Work Order ID: Q4-2025 Pond A Wells
Date Received: 10/9/2025
Chemistry Project: 25-0770

<u>Sample #</u>	<u>Field Sample ID</u>	<u>Matrix</u>	<u>Sample Date</u>	<u>Site</u>
25-0770-01	JHC-MW-15006	Groundwater	10/08/2025 10:46	JHC GW Monitoring - Pond A Wells
25-0770-02	JHC-MW-15007R	Groundwater	10/08/2025 09:56	JHC GW Monitoring - Pond A Wells
25-0770-03	JHC-MW-15008R	Groundwater	10/07/2025 16:36	JHC GW Monitoring - Pond A Wells
25-0770-04	JHC-MW-15009R	Groundwater	10/07/2025 15:36	JHC GW Monitoring - Pond A Wells
25-0770-05	JHC-MW-15011R	Groundwater	10/08/2025 11:51	JHC GW Monitoring - Pond A Wells
25-0770-06	DUP-02	Groundwater	10/07/2025 00:00	JHC GW Monitoring - Pond A Wells
25-0770-07	FB-02	Water	10/08/2025 09:33	JHC GW Monitoring - Pond A Wells
25-0770-08	EB-02	Water	10/07/2025 20:38	JHC GW Monitoring - Pond A Wells
25-0770-09	JHC-MW-15007R MS	Groundwater	10/08/2025 09:56	JHC GW Monitoring - Pond A Wells
25-0770-10	JHC-MW-15007R MSD	Groundwater	10/08/2025 09:56	JHC GW Monitoring - Pond A Wells

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **JHC-MW-15006**
 Lab Sample ID: 25-0770-01
 Matrix: Groundwater

Laboratory Project: **25-0770**
 Collect Date: 10/08/2025
 Collect Time: 10:46 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0770-01-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0770-01-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Arsenic	12		ug/L	1.0	10/16/2025	AB25-1017-02
Barium	152		ug/L	5.0	10/16/2025	AB25-1017-02
Beryllium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Boron	609		ug/L	20.0	10/16/2025	AB25-1017-02
Cadmium	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Calcium	69100		ug/L	1000.0	10/16/2025	AB25-1017-02
Chromium	1		ug/L	1.0	10/16/2025	AB25-1017-02
Cobalt	ND		ug/L	6.0	10/16/2025	AB25-1017-02
Copper	2		ug/L	1.0	10/16/2025	AB25-1017-02
Iron	ND		ug/L	20.0	10/16/2025	AB25-1017-02
Lead	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Lithium	15		ug/L	10.0	10/16/2025	AB25-1017-02
Magnesium	42400		ug/L	1000.0	10/16/2025	AB25-1017-02
Molybdenum	16		ug/L	5.0	10/16/2025	AB25-1017-02
Nickel	4		ug/L	2.0	10/16/2025	AB25-1017-02
Potassium	6460		ug/L	100.0	10/16/2025	AB25-1017-02
Selenium	21		ug/L	1.0	10/16/2025	AB25-1017-02
Silver	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Sodium	14800		ug/L	1000.0	10/16/2025	AB25-1017-02
Thallium	ND		ug/L	2.0	10/16/2025	AB25-1017-02
Vanadium	16		ug/L	2.0	10/16/2025	AB25-1017-02
Zinc	ND		ug/L	10.0	10/16/2025	AB25-1017-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0770-01-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	14000		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	81500		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0770-01-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	415		mg/L	10.0	10/09/2025	AB25-1009-01



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
Field Sample ID: **JHC-MW-15006**
Lab Sample ID: 25-0770-01
Matrix: Groundwater

Laboratory Project: **25-0770**
Collect Date: 10/08/2025
Collect Time: 10:46 AM

Alkalinity by SM 2320B

Aliquot #: 25-0770-01-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	266000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Bicarbonate	266000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Carbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **JHC-MW-15007R**
 Lab Sample ID: 25-0770-02
 Matrix: Groundwater

Laboratory Project: **25-0770**
 Collect Date: 10/08/2025
 Collect Time: 09:56 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0770-02-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0770-02-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Arsenic	6		ug/L	1.0	10/16/2025	AB25-1017-02
Barium	252		ug/L	5.0	10/16/2025	AB25-1017-02
Beryllium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Boron	1260		ug/L	20.0	10/16/2025	AB25-1017-02
Cadmium	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Calcium	73600		ug/L	1000.0	10/16/2025	AB25-1017-02
Chromium	1		ug/L	1.0	10/16/2025	AB25-1017-02
Cobalt	ND		ug/L	6.0	10/16/2025	AB25-1017-02
Copper	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Iron	39		ug/L	20.0	10/16/2025	AB25-1017-02
Lead	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Lithium	15		ug/L	10.0	10/16/2025	AB25-1017-02
Magnesium	39100		ug/L	1000.0	10/16/2025	AB25-1017-02
Molybdenum	21		ug/L	5.0	10/16/2025	AB25-1017-02
Nickel	4		ug/L	2.0	10/16/2025	AB25-1017-02
Potassium	4340		ug/L	100.0	10/16/2025	AB25-1017-02
Selenium	7		ug/L	1.0	10/16/2025	AB25-1017-02
Silver	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Sodium	14600		ug/L	1000.0	10/16/2025	AB25-1017-02
Thallium	ND		ug/L	2.0	10/16/2025	AB25-1017-02
Vanadium	14		ug/L	2.0	10/16/2025	AB25-1017-02
Zinc	ND		ug/L	10.0	10/16/2025	AB25-1017-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0770-02-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	13400		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	83600		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0770-02-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	431		mg/L	10.0	10/09/2025	AB25-1009-01



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
Field Sample ID: **JHC-MW-15007R**
Lab Sample ID: 25-0770-02
Matrix: Groundwater

Laboratory Project: **25-0770**
Collect Date: 10/08/2025
Collect Time: 09:56 AM

Alkalinity by SM 2320B

Aliquot #: 25-0770-02-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	259000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Bicarbonate	259000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Carbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **JHC-MW-15008R**
 Lab Sample ID: 25-0770-03
 Matrix: Groundwater

Laboratory Project: **25-0770**
 Collect Date: 10/07/2025
 Collect Time: 04:36 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0770-03-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0770-03-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	1		ug/L	1.0	10/16/2025	AB25-1017-02
Arsenic	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Barium	138		ug/L	5.0	10/16/2025	AB25-1017-02
Beryllium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Boron	1220		ug/L	20.0	10/16/2025	AB25-1017-02
Cadmium	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Calcium	72800		ug/L	1000.0	10/16/2025	AB25-1017-02
Chromium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Cobalt	ND		ug/L	6.0	10/16/2025	AB25-1017-02
Copper	2		ug/L	1.0	10/16/2025	AB25-1017-02
Iron	ND		ug/L	20.0	10/16/2025	AB25-1017-02
Lead	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Lithium	20		ug/L	10.0	10/16/2025	AB25-1017-02
Magnesium	30500		ug/L	1000.0	10/16/2025	AB25-1017-02
Molybdenum	20		ug/L	5.0	10/16/2025	AB25-1017-02
Nickel	4		ug/L	2.0	10/16/2025	AB25-1017-02
Potassium	2060		ug/L	100.0	10/16/2025	AB25-1017-02
Selenium	24		ug/L	1.0	10/16/2025	AB25-1017-02
Silver	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Sodium	14300		ug/L	1000.0	10/16/2025	AB25-1017-02
Thallium	ND		ug/L	2.0	10/16/2025	AB25-1017-02
Vanadium	ND		ug/L	2.0	10/16/2025	AB25-1017-02
Zinc	ND		ug/L	10.0	10/16/2025	AB25-1017-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0770-03-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	10400		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	57000		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0770-03-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	386		mg/L	10.0	10/09/2025	AB25-1009-01



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
Field Sample ID: **JHC-MW-15008R**
Lab Sample ID: 25-0770-03
Matrix: Groundwater

Laboratory Project: **25-0770**
Collect Date: 10/07/2025
Collect Time: 04:36 PM

Alkalinity by SM 2320B

Aliquot #: 25-0770-03-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	251000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Bicarbonate	251000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Carbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **JHC-MW-15009R**
 Lab Sample ID: 25-0770-04
 Matrix: Groundwater

Laboratory Project: **25-0770**
 Collect Date: 10/07/2025
 Collect Time: 03:36 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0770-04-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0770-04-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Arsenic	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Barium	240		ug/L	5.0	10/16/2025	AB25-1017-02
Beryllium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Boron	1890		ug/L	20.0	10/16/2025	AB25-1017-02
Cadmium	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Calcium	74400		ug/L	1000.0	10/16/2025	AB25-1017-02
Chromium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Cobalt	ND		ug/L	6.0	10/16/2025	AB25-1017-02
Copper	2		ug/L	1.0	10/16/2025	AB25-1017-02
Iron	93		ug/L	20.0	10/16/2025	AB25-1017-02
Lead	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Lithium	13		ug/L	10.0	10/16/2025	AB25-1017-02
Magnesium	14900		ug/L	1000.0	10/16/2025	AB25-1017-02
Molybdenum	17		ug/L	5.0	10/16/2025	AB25-1017-02
Nickel	4		ug/L	2.0	10/16/2025	AB25-1017-02
Potassium	4290		ug/L	100.0	10/16/2025	AB25-1017-02
Selenium	106		ug/L	1.0	10/16/2025	AB25-1017-02
Silver	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Sodium	9220		ug/L	1000.0	10/16/2025	AB25-1017-02
Thallium	ND		ug/L	2.0	10/16/2025	AB25-1017-02
Vanadium	6		ug/L	2.0	10/16/2025	AB25-1017-02
Zinc	ND		ug/L	10.0	10/16/2025	AB25-1017-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0770-04-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	12900		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	37800		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C

Aliquot #: 25-0770-04-C03-A01

Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	331		mg/L	10.0	10/09/2025	AB25-1009-01



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
Field Sample ID: **JHC-MW-15009R**
Lab Sample ID: 25-0770-04
Matrix: Groundwater

Laboratory Project: **25-0770**
Collect Date: 10/07/2025
Collect Time: 03:36 PM

Alkalinity by SM 2320B

Aliquot #: 25-0770-04-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	209000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Bicarbonate	209000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Carbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **JHC-MW-15011R**
 Lab Sample ID: 25-0770-05
 Matrix: Groundwater

Laboratory Project: **25-0770**
 Collect Date: 10/08/2025
 Collect Time: 11:51 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0770-05-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0770-05-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Arsenic	5		ug/L	1.0	10/16/2025	AB25-1017-02
Barium	348		ug/L	5.0	10/16/2025	AB25-1017-02
Beryllium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Boron	5040		ug/L	20.0	10/16/2025	AB25-1017-02
Cadmium	0.3		ug/L	0.2	10/16/2025	AB25-1017-02
Calcium	79300		ug/L	1000.0	10/16/2025	AB25-1017-02
Chromium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Cobalt	ND		ug/L	6.0	10/16/2025	AB25-1017-02
Copper	2		ug/L	1.0	10/16/2025	AB25-1017-02
Iron	ND		ug/L	20.0	10/16/2025	AB25-1017-02
Lead	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Lithium	21		ug/L	10.0	10/16/2025	AB25-1017-02
Magnesium	17400		ug/L	1000.0	10/16/2025	AB25-1017-02
Molybdenum	9		ug/L	5.0	10/16/2025	AB25-1017-02
Nickel	6		ug/L	2.0	10/16/2025	AB25-1017-02
Potassium	4740		ug/L	100.0	10/16/2025	AB25-1017-02
Selenium	145		ug/L	1.0	10/16/2025	AB25-1017-02
Silver	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Sodium	9910		ug/L	1000.0	10/16/2025	AB25-1017-02
Thallium	ND		ug/L	2.0	10/16/2025	AB25-1017-02
Vanadium	10		ug/L	2.0	10/16/2025	AB25-1017-02
Zinc	ND		ug/L	10.0	10/16/2025	AB25-1017-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0770-05-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	3380		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	124000		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0770-05-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	385		mg/L	10.0	10/09/2025	AB25-1009-01



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
Field Sample ID: **JHC-MW-15011R**
Lab Sample ID: 25-0770-05
Matrix: Groundwater

Laboratory Project: **25-0770**
Collect Date: 10/08/2025
Collect Time: 11:51 AM

Alkalinity by SM 2320B

Aliquot #: 25-0770-05-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	165000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Bicarbonate	165000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Carbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **DUP-02**
 Lab Sample ID: 25-0770-06
 Matrix: Groundwater

Laboratory Project: **25-0770**
 Collect Date: 10/07/2025
 Collect Time: 12:00 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0770-06-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0770-06-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Arsenic	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Barium	244		ug/L	5.0	10/16/2025	AB25-1017-02
Beryllium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Boron	1890		ug/L	20.0	10/16/2025	AB25-1017-02
Cadmium	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Calcium	75100		ug/L	1000.0	10/16/2025	AB25-1017-02
Chromium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Cobalt	ND		ug/L	6.0	10/16/2025	AB25-1017-02
Copper	2		ug/L	1.0	10/16/2025	AB25-1017-02
Iron	80		ug/L	20.0	10/16/2025	AB25-1017-02
Lead	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Lithium	14		ug/L	10.0	10/16/2025	AB25-1017-02
Magnesium	15100		ug/L	1000.0	10/16/2025	AB25-1017-02
Molybdenum	16		ug/L	5.0	10/16/2025	AB25-1017-02
Nickel	4		ug/L	2.0	10/16/2025	AB25-1017-02
Potassium	4310		ug/L	100.0	10/16/2025	AB25-1017-02
Selenium	110		ug/L	1.0	10/16/2025	AB25-1017-02
Silver	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Sodium	9350		ug/L	1000.0	10/16/2025	AB25-1017-02
Thallium	ND		ug/L	2.0	10/16/2025	AB25-1017-02
Vanadium	6		ug/L	2.0	10/16/2025	AB25-1017-02
Zinc	ND		ug/L	10.0	10/16/2025	AB25-1017-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0770-06-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	13300		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	37800		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0770-06-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	363		mg/L	10.0	10/09/2025	AB25-1009-01



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
Field Sample ID: **DUP-02**
Lab Sample ID: 25-0770-06
Matrix: Groundwater

Laboratory Project: **25-0770**
Collect Date: 10/07/2025
Collect Time: 12:00 AM

Alkalinity by SM 2320B

Aliquot #: 25-0770-06-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	209000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Bicarbonate	209000		ug/L	10000.0	10/13/2025	AB25-1013-02
Alkalinity, Carbonate	ND		ug/L	10000.0	10/13/2025	AB25-1013-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **FB-02**
 Lab Sample ID: 25-0770-07
 Matrix: Water

Laboratory Project: **25-0770**
 Collect Date: 10/08/2025
 Collect Time: 09:33 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0770-07-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0770-07-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Arsenic	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Barium	ND		ug/L	5.0	10/16/2025	AB25-1017-02
Beryllium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Boron	ND		ug/L	20.0	10/16/2025	AB25-1017-02
Cadmium	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Calcium	ND		ug/L	1000.0	10/16/2025	AB25-1017-02
Chromium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Cobalt	ND		ug/L	6.0	10/16/2025	AB25-1017-02
Copper	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Iron	ND		ug/L	20.0	10/16/2025	AB25-1017-02
Lead	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Lithium	ND		ug/L	10.0	10/16/2025	AB25-1017-02
Magnesium	ND		ug/L	1000.0	10/16/2025	AB25-1017-02
Molybdenum	ND		ug/L	5.0	10/16/2025	AB25-1017-02
Nickel	ND		ug/L	2.0	10/16/2025	AB25-1017-02
Potassium	ND		ug/L	100.0	10/16/2025	AB25-1017-02
Selenium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Silver	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Sodium	ND		ug/L	1000.0	10/16/2025	AB25-1017-02
Thallium	ND		ug/L	2.0	10/16/2025	AB25-1017-02
Vanadium	ND		ug/L	2.0	10/16/2025	AB25-1017-02
Zinc	ND		ug/L	10.0	10/16/2025	AB25-1017-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0770-07-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	ND		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0770-07-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	ND		mg/L	10.0	10/09/2025	AB25-1009-01

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **EB-02**
 Lab Sample ID: 25-0770-08
 Matrix: Water

Laboratory Project: **25-0770**
 Collect Date: 10/07/2025
 Collect Time: 08:38 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0770-08-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0770-08-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Arsenic	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Barium	ND		ug/L	5.0	10/16/2025	AB25-1017-02
Beryllium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Boron	ND		ug/L	20.0	10/16/2025	AB25-1017-02
Cadmium	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Calcium	ND		ug/L	1000.0	10/16/2025	AB25-1017-02
Chromium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Cobalt	ND		ug/L	6.0	10/16/2025	AB25-1017-02
Copper	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Iron	ND		ug/L	20.0	10/16/2025	AB25-1017-02
Lead	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Lithium	ND		ug/L	10.0	10/16/2025	AB25-1017-02
Magnesium	ND		ug/L	1000.0	10/16/2025	AB25-1017-02
Molybdenum	ND		ug/L	5.0	10/16/2025	AB25-1017-02
Nickel	ND		ug/L	2.0	10/16/2025	AB25-1017-02
Potassium	ND		ug/L	100.0	10/16/2025	AB25-1017-02
Selenium	ND		ug/L	1.0	10/16/2025	AB25-1017-02
Silver	ND		ug/L	0.2	10/16/2025	AB25-1017-02
Sodium	ND		ug/L	1000.0	10/16/2025	AB25-1017-02
Thallium	ND		ug/L	2.0	10/16/2025	AB25-1017-02
Vanadium	ND		ug/L	2.0	10/16/2025	AB25-1017-02
Zinc	ND		ug/L	10.0	10/16/2025	AB25-1017-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0770-08-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	ND		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0770-08-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	ND		mg/L	10.0	10/09/2025	AB25-1009-01

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **JHC-MW-15007R MS**
 Lab Sample ID: 25-0770-09
 Matrix: Groundwater

Laboratory Project: **25-0770**
 Collect Date: 10/08/2025
 Collect Time: 09:56 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0770-09-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	99.0		%	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0770-09-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	112		%	1.0	10/16/2025	AB25-1017-02
Arsenic	111		%	1.0	10/16/2025	AB25-1017-02
Barium	104		%	5.0	10/16/2025	AB25-1017-02
Beryllium	114		%	1.0	10/16/2025	AB25-1017-02
Boron	108		%	20.0	10/16/2025	AB25-1017-02
Cadmium	110		%	0.2	10/16/2025	AB25-1017-02
Calcium	109		%	1000.0	10/16/2025	AB25-1017-02
Chromium	104		%	1.0	10/16/2025	AB25-1017-02
Cobalt	103		%	6.0	10/16/2025	AB25-1017-02
Copper	101		%	1.0	10/16/2025	AB25-1017-02
Iron	101		%	20.0	10/16/2025	AB25-1017-02
Lead	103		%	1.0	10/16/2025	AB25-1017-02
Lithium	113		%	10.0	10/16/2025	AB25-1017-02
Magnesium	112		%	1000.0	10/16/2025	AB25-1017-02
Molybdenum	113		%	5.0	10/16/2025	AB25-1017-02
Nickel	101		%	2.0	10/16/2025	AB25-1017-02
Potassium	110		%	100.0	10/16/2025	AB25-1017-02
Selenium	109		%	1.0	10/16/2025	AB25-1017-02
Silver	102		%	0.2	10/16/2025	AB25-1017-02
Sodium	109		%	1000.0	10/16/2025	AB25-1017-02
Thallium	108		%	2.0	10/16/2025	AB25-1017-02
Vanadium	105		%	2.0	10/16/2025	AB25-1017-02
Zinc	104		%	10.0	10/16/2025	AB25-1017-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0770-09-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	99		%	1000.0	10/10/2025	AB25-1010-02
Fluoride	91		%	1000.0	10/10/2025	AB25-1010-02
Sulfate	102		%	1000.0	10/10/2025	AB25-1010-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Pond A Wells (395496)**
 Field Sample ID: **JHC-MW-15007R MSD**
 Lab Sample ID: 25-0770-10
 Matrix: Groundwater

Laboratory Project: **25-0770**
 Collect Date: 10/08/2025
 Collect Time: 09:56 AM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0770-10-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	100.0		%	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0770-10-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	108		%	1.0	10/16/2025	AB25-1017-02
Arsenic	107		%	1.0	10/16/2025	AB25-1017-02
Barium	99		%	5.0	10/16/2025	AB25-1017-02
Beryllium	109		%	1.0	10/16/2025	AB25-1017-02
Boron	109		%	20.0	10/16/2025	AB25-1017-02
Cadmium	107		%	0.2	10/16/2025	AB25-1017-02
Calcium	110		%	1000.0	10/16/2025	AB25-1017-02
Chromium	100		%	1.0	10/16/2025	AB25-1017-02
Cobalt	99		%	6.0	10/16/2025	AB25-1017-02
Copper	96		%	1.0	10/16/2025	AB25-1017-02
Iron	94		%	20.0	10/16/2025	AB25-1017-02
Lead	100		%	1.0	10/16/2025	AB25-1017-02
Lithium	109		%	10.0	10/16/2025	AB25-1017-02
Magnesium	105		%	1000.0	10/16/2025	AB25-1017-02
Molybdenum	109		%	5.0	10/16/2025	AB25-1017-02
Nickel	96		%	2.0	10/16/2025	AB25-1017-02
Potassium	110		%	100.0	10/16/2025	AB25-1017-02
Selenium	107		%	1.0	10/16/2025	AB25-1017-02
Silver	99.3		%	0.2	10/16/2025	AB25-1017-02
Sodium	106		%	1000.0	10/16/2025	AB25-1017-02
Thallium	106		%	2.0	10/16/2025	AB25-1017-02
Vanadium	102		%	2.0	10/16/2025	AB25-1017-02
Zinc	100		%	10.0	10/16/2025	AB25-1017-02

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0770-10-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	99		%	1000.0	10/10/2025	AB25-1010-02
Fluoride	93		%	1000.0	10/10/2025	AB25-1010-02
Sulfate	100		%	1000.0	10/10/2025	AB25-1010-02

Data Qualifiers	Exception Summary
-----------------	-------------------

No exceptions occurred.

TITLE: SAMPLE LOG-IN – SHIPMENT INSPECTION FORM

Project Number: 25-0770 Inspection Date: 10/09/25 Inspection By: CIE/fmw

Sample Origin/Project Name: 04-2025 JHC Pond A

Shipment Delivered By: Enter the type of shipment carrier.

Inter-Company Mail _____ FedEx _____ UPS _____ USPS _____

Tracking Number: _____ Other/Carry In (whom) CIE-CONSUMERS

Shipping Containers: Enter the type and number of shipping containers received.

Cooler (2) Cardboard Box _____ Custom Case _____ Envelope/Mailer _____

Loose/Unpackaged Containers _____ Other _____

Condition of Shipment: Enter the as-received condition of the shipment container.

Damaged Shipment Observed: None Dented _____ Leaking _____

Other _____

Shipment Security: Enter if any of the shipping containers were opened before receipt.

Shipping Containers Received: Opened _____ Sealed N/A _____

Enclosed Documents: Enter the type of documents enclosed with the shipment.

CoC Work Request _____ Air Data Sheet _____ Other _____

Temperature of Containers: Measure the temperature of several sample containers.

As-Received Temperature Range 4.8-6.0 °C Samples Received on Ice: Yes No _____

M&TE # and Expiration LS027728 / 7-7-26

Number and Type of Containers: Enter the type and total number of sample containers received.

Container Type	Water	Soil	Other	Broken	Leaking
VOA (40mL or 60mL)	<u>12</u>	_____	_____	_____	_____
Quart/Liter (g/p)	<u>14</u>	_____	_____	_____	_____
9-oz (amber glass jar)	_____	_____	_____	_____	_____
2-oz (amber glass)	_____	_____	_____	_____	_____
125 mL (plastic)	<u>20</u>	_____	_____	_____	_____
24 mL vial (glass)	_____	_____	_____	_____	_____
250 mL (plastic)	<u>8</u>	_____	_____	_____	_____
Other	_____	_____	_____	_____	_____

All sample pH meeting criteria? Yes No _____ N/A _____ pH paper lot # 216224 Exp. Date 12-1-26

Indicate if an Exception Report (Page 2 of 2) is needed: Yes _____ No

CHAIN OF CUSTODY



CONSUMERS ENERGY COMPANY – LABORATORY SERVICES

135 WEST TRAIL ST., JACKSON, MI 49201 • (517) 788-1251

SAMPLING SITE / CUSTOMER: JHC Q4-2025 Pond A Wells			PROJECT NUMBER: 25-0770		SAP CC or WO#: REQUESTER: JR Register		ANALYSIS REQUESTED (Attach List if More Space is Needed)						QA REQUIREMENT: <input type="checkbox"/> NPDES <input checked="" type="checkbox"/> TNI <input type="checkbox"/> ISO 17025 <input type="checkbox"/> 10 CFR 50 APP. B <input type="checkbox"/> INTERNAL INFO <input type="checkbox"/> OTHER _____																						
SAMPLING TEAM: C. Ehlert			TURNAROUND TIME REQUIRED: <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 3 DAYS <input type="checkbox"/> STANDARD <input checked="" type="checkbox"/> OTHER _____																																
SEND REPORT TO: Joseph Firlit		email:		phone:		<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td rowspan="2">Total Metals</td> <td rowspan="2">Anions</td> <td rowspan="2">TDS</td> <td rowspan="2">Alkalinity</td> <td rowspan="2">Radium 226</td> <td rowspan="2">Radium 228</td> <td colspan="8"></td> </tr> <tr> <td colspan="8"></td> </tr> </table>						Total Metals	Anions	TDS	Alkalinity	Radium 226	Radium 228																	REMARKS	
Total Metals	Anions	TDS	Alkalinity	Radium 226	Radium 228																														
COPY TO: JR Register		MATRIX CODES:		CONTAINERS		<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td rowspan="2">TOTAL #</td> <td rowspan="2">None</td> <td rowspan="2">HNO₃</td> <td rowspan="2">H₂SO₄</td> <td rowspan="2">NaOH</td> <td rowspan="2">HCl</td> <td rowspan="2">MeOH</td> <td rowspan="2">Other</td> <td colspan="8"></td> </tr> <tr> <td colspan="8"></td> </tr> </table>						TOTAL #	None	HNO ₃	H ₂ SO ₄	NaOH	HCl	MeOH	Other																
TOTAL #	None	HNO ₃	H ₂ SO ₄	NaOH	HCl															MeOH	Other														
TRC		GW = Groundwater OX = Other WW = Wastewater SL = Sludge W = Water / Aqueous Liquid A = Air S = Soil / General Solid WP = Wipe O = Oil WT = General Waste																																	
LAB SAMPLE ID	SAMPLE COLLECTION		MATRIX	FIELD SAMPLE ID / LOCATION																															
	DATE	TIME																																	

RELINQUISHED BY: <i>OK Seward</i>		DATE/TIME: 10-09-25 0745		RECEIVED BY: <i>Tim R...</i>		COMMENTS: Received on Ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No M&TE #: <u>LS02T23</u> Temperature: <u>4-8.60</u> °C Cal. Due Date: <u>7-7-26</u>					
RELINQUISHED BY:		DATE/TIME:		RECEIVED BY:							

To: JFirlit, JH Campbell Complex

From: EBlaj, T-258

Date: October 30, 2025

Subject: JH CAMPBELL SOLID WASTE DISPOSAL AREA – GROUNDWATER MONITORING
4th Quarter, 2025 – Supplemental and GSI Wells

CC: HDRegister, P22-521
ADSantini, P20-215B-REM

Sarah Holmstrom, Project Manager
TRC Companies, Inc.
1540 Eisenhower Place
Ann Arbor, MI 48108

Chemistry Project: 25-0773

CE Laboratory Services conducted groundwater monitoring at the JH Campbell Solid Waste Disposal Area during the week of 10/06/2025, for the 4th Quarter requirement, as specified in the Hydrogeological Monitoring Plan for the site. Samples were not collected from MW-13; the well was dry. All other samples were received for analysis by the Chemistry department on 10/09/2025. Please note that samples collected from PZ-24S were not valid due to insufficient purge volume and field stabilization criteria not being met.

Samples for Radium analysis have been subcontracted to Eurofins/TestAmerica, Inc. and their results are being reported separately. Please note that the subcontracted work is not reported under the CE laboratory scope of accreditation.

The report that follows presents the results of the requested analytical testing; the results apply only to the samples, as received. All samples have been analyzed in accordance with the 2016 TNI Standard and the applicable A2LA accreditation scope for Laboratory Services. Any exceptions to applicable test method criteria and standard compliance are noted in the Case Narrative or flagged with applicable qualifiers in the analytical results section.

Reviewed and approved by:

Emil Blaj
Sr. Technical Analyst
Project Lead



Testing performed in accordance with the A2LA scope of accreditation specified in the listed certificate. The information contained in this report is the sole property of Consumers Energy. It cannot be reproduced except in full, and with consent from Consumers Energy, or the customer for which this report was issued.

CASE NARRATIVE

I. Sample Receipt

All samples were received within hold time and in good condition; no anomalies were noted on the Sample Log-In Shipment Inspection Form during sample check-in. Identification of all samples included in the work order/project is provided in the sample summary section. Sample preservation upon receipt was verified by the sample custodian and confirmed to meet method requirements.

II. Methodology

Unless otherwise indicated, sample preparation and analysis was performed in accordance with the corresponding test methods from “Methods for the Determination of Inorganic Substances in Environmental Samples (EPA/600/R-93/100); SW-846, “Test Methods for Evaluating Solid Waste – Physical/Chemical Methods”, USEPA (latest revisions), and Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WPCF, 22nd Edition, 2012.

III. Results/Quality Control

Analytical results for this report are presented by laboratory sample ID, container & aliquot number. Results for the field blanks, field duplicates, and percent recoveries of the field matrix spike & matrix spike duplicate samples are included in the results section. Unless specifically noted in the case narrative, all method quality control requirements have been met. If any results are qualified, the corresponding data flags/qualifiers are listed on the last page of the results section. Any additional information on method performance, when applicable, is presented in this section of the case narrative. When data flags are not needed, the qualifiers text box on the last page is left blank, and a statement confirms that no exceptions occurred.

DEFINITIONS / QUALIFIERS

The following qualifiers and/or acronyms are used in the report where applicable:

<u>Acronym</u>	<u>Description</u>
RL	Reporting Limit
ND	Result not detected or below Reporting Limit
NT	Not a TNI Analyte
LCS	Laboratory Control Sample
LRB	Laboratory Reagent Blank (also referred to as Method Blank)
DUP	Duplicate
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
TDL	Target Detection Limit
SM	Standard Methods Compendium

<u>Qualifier</u>	<u>Description</u>
*	Generic data flag, applicable description added in the corresponding notes section
B	The analyte was detected in the LRB at a level which is significant relative to sample result

D	Reporting limit elevated due to dilution
E	Estimated due to result exceeding the linear range of the analyzer
H	The maximum recommended hold time was exceeded
I	Dilution required due to matrix interference; reporting limit elevated
J	Estimated due to result found above MDL but below PQL (or RL)
K	Reporting limit raised due to matrix interference
M	The precision for duplicate analysis was not met; RPD outside acceptance criteria
N	Non-homogeneous sample made analysis questionable
PI	Possible interference may have affected the accuracy of the laboratory result
Q	Matrix Spike or Matrix Spike Duplicate recovery outside acceptance criteria
R	Result confirmed by new sample preparation and reanalysis
X	Other notation required; comment listed in sample notes and/or case narrative

Customer Name: JH Campbell Complex
Work Order ID: Q4-2025 Supplemental Wells
Date Received: 10/9/2025
Chemistry Project: 25-0773

<u>Sample #</u>	<u>Field Sample ID</u>	<u>Matrix</u>	<u>Sample Date</u>	<u>Site</u>
25-0773-01	MW-14S	Groundwater	10/07/2025 19:20	JHC GW Monitoring - Supplemental Wells
25-0773-02	PZ-23S	Groundwater	10/08/2025 11:14	JHC GW Monitoring - Supplemental Wells
25-0773-03	PZ-24S	Not Valid		
25-0773-05	PZ-40S	Groundwater	10/07/2025 15:55	JHC GW Monitoring - Supplemental Wells
25-0773-07	TW-19-05	Groundwater	10/08/2025 09:08	JHC GW Monitoring - Supplemental Wells
25-0773-08	TW-19-06A	Groundwater	10/08/2025 10:07	JHC GW Monitoring - Supplemental Wells
25-0773-09	DUP-07	Groundwater	10/07/2025 00:00	JHC GW Monitoring - Supplemental Wells
25-0773-10	TW-19-06A MS	Groundwater	10/08/2025 10:07	JHC GW Monitoring - Supplemental Wells
25-0773-11	TW-19-06A MSD	Groundwater	10/08/2025 10:07	JHC GW Monitoring - Supplemental Wells

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **MW-14S**
 Lab Sample ID: 25-0773-01
 Matrix: Groundwater

Laboratory Project: **25-0773**
 Collect Date: 10/07/2025
 Collect Time: 07:20 PM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0773-01-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0773-01-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	16		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	52		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	12100		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	1		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	45		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	ND		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	4000		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	24		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	316		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	13		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	2090		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0773-01-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	1430		ug/L	1000.0	10/10/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/10/2025	AB25-1010-02
Sulfate	11500		ug/L	1000.0	10/10/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0773-01-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	95		mg/L	10.0	10/09/2025	AB25-1009-01

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **MW-14S**
 Lab Sample ID: 25-0773-01
 Matrix: Groundwater

Laboratory Project: **25-0773**
 Collect Date: 10/07/2025
 Collect Time: 07:20 PM

Alkalinity by SM 2320B

Aliquot #: 25-0773-01-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	33900		ug/L	10000.0	10/14/2025	AB25-1014-01
Alkalinity, Bicarbonate	33900		ug/L	10000.0	10/14/2025	AB25-1014-01
Alkalinity, Carbonate	ND		ug/L	10000.0	10/14/2025	AB25-1014-01

Groundwater Metals by EPA 6020A, Dissolved, JHC List

Aliquot #: 25-0773-01-C08-A01

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/15/2025	AB25-1016-02
Arsenic	ND		ug/L	1.0	10/15/2025	AB25-1016-02
Chromium	ND		ug/L	1.0	10/15/2025	AB25-1016-02
Lithium	ND		ug/L	10.0	10/15/2025	AB25-1016-02
Molybdenum	24		ug/L	5.0	10/15/2025	AB25-1016-02
Nickel	ND		ug/L	2.0	10/15/2025	AB25-1016-02
Selenium	13		ug/L	1.0	10/15/2025	AB25-1016-02
Vanadium	ND		ug/L	2.0	10/15/2025	AB25-1016-02
Boron	51		ug/L	20.0	10/15/2025	AB25-1016-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **PZ-23S**
 Lab Sample ID: 25-0773-02
 Matrix: Groundwater

Laboratory Project: **25-0773**
 Collect Date: 10/08/2025
 Collect Time: 11:14 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0773-02-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0773-02-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	25		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	7160		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	33		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	ND		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	1660		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	942		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	1230		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0773-02-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	1150		ug/L	1000.0	10/11/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/11/2025	AB25-1010-02
Sulfate	2780		ug/L	1000.0	10/11/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0773-02-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	55		mg/L	10.0	10/09/2025	AB25-1009-01

Laboratory Services
A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **PZ-23S**
 Lab Sample ID: 25-0773-02
 Matrix: Groundwater

Laboratory Project: **25-0773**
 Collect Date: 10/08/2025
 Collect Time: 11:14 AM

Alkalinity by SM 2320B

Aliquot #: 25-0773-02-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	24600		ug/L	10000.0	10/14/2025	AB25-1014-01
Alkalinity, Bicarbonate	24600		ug/L	10000.0	10/14/2025	AB25-1014-01
Alkalinity, Carbonate	ND		ug/L	10000.0	10/14/2025	AB25-1014-01

Groundwater Metals by EPA 6020A, Dissolved, JHC List

Aliquot #: 25-0773-02-C08-A01

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/15/2025	AB25-1016-02
Arsenic	ND		ug/L	1.0	10/15/2025	AB25-1016-02
Chromium	ND		ug/L	1.0	10/15/2025	AB25-1016-02
Lithium	ND		ug/L	10.0	10/15/2025	AB25-1016-02
Molybdenum	ND		ug/L	5.0	10/15/2025	AB25-1016-02
Nickel	ND		ug/L	2.0	10/15/2025	AB25-1016-02
Selenium	ND		ug/L	1.0	10/15/2025	AB25-1016-02
Vanadium	ND		ug/L	2.0	10/15/2025	AB25-1016-02
Boron	22		ug/L	20.0	10/15/2025	AB25-1016-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **PZ-40S**
 Lab Sample ID: 25-0773-05
 Matrix: Groundwater

Laboratory Project: **25-0773**
 Collect Date: 10/07/2025
 Collect Time: 03:55 PM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0773-05-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0773-05-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	34		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	51		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	2190		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	2		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	3		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	164		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	ND		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	ND		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	297		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	2750		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0773-05-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	1970		ug/L	1000.0	10/11/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/11/2025	AB25-1010-02
Sulfate	6210		ug/L	1000.0	10/11/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C

Aliquot #: 25-0773-05-C03-A01

Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	48		mg/L	10.0	10/09/2025	AB25-1009-06

Laboratory Services
A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **PZ-40S**
 Lab Sample ID: 25-0773-05
 Matrix: Groundwater

Laboratory Project: **25-0773**
 Collect Date: 10/07/2025
 Collect Time: 03:55 PM

Alkalinity by SM 2320B

Aliquot #: 25-0773-05-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	ND		ug/L	10000.0	10/14/2025	AB25-1014-01
Alkalinity, Bicarbonate	ND		ug/L	10000.0	10/14/2025	AB25-1014-01
Alkalinity, Carbonate	ND		ug/L	10000.0	10/14/2025	AB25-1014-01

Groundwater Metals by EPA 6020A, Dissolved, JHC List

Aliquot #: 25-0773-05-C08-A01

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/15/2025	AB25-1016-02
Arsenic	ND		ug/L	1.0	10/15/2025	AB25-1016-02
Chromium	1		ug/L	1.0	10/15/2025	AB25-1016-02
Lithium	ND		ug/L	10.0	10/15/2025	AB25-1016-02
Molybdenum	ND		ug/L	5.0	10/15/2025	AB25-1016-02
Nickel	ND		ug/L	2.0	10/15/2025	AB25-1016-02
Selenium	ND		ug/L	1.0	10/15/2025	AB25-1016-02
Vanadium	ND		ug/L	2.0	10/15/2025	AB25-1016-02
Boron	47		ug/L	20.0	10/15/2025	AB25-1016-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **TW-19-05**
 Lab Sample ID: 25-0773-07
 Matrix: Groundwater

Laboratory Project: **25-0773**
 Collect Date: 10/08/2025
 Collect Time: 09:08 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0773-07-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0773-07-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	2		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	43		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	105		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	55000		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	3		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	195		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	33		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	17100		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	ND		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	4		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	12900		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	4		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	1490		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0773-07-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	10/11/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/11/2025	AB25-1010-02
Sulfate	6400		ug/L	1000.0	10/11/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0773-07-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	237		mg/L	10.0	10/09/2025	AB25-1009-06



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
Field Sample ID: **TW-19-05**
Lab Sample ID: 25-0773-07
Matrix: Groundwater

Laboratory Project: **25-0773**
Collect Date: 10/08/2025
Collect Time: 09:08 AM

Alkalinity by SM 2320B

Aliquot #: 25-0773-07-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	214000		ug/L	10000.0	10/14/2025	AB25-1014-01
Alkalinity, Bicarbonate	214000		ug/L	10000.0	10/14/2025	AB25-1014-01
Alkalinity, Carbonate	ND		ug/L	10000.0	10/14/2025	AB25-1014-01

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **TW-19-06A**
 Lab Sample ID: 25-0773-08
 Matrix: Groundwater

Laboratory Project: **25-0773**
 Collect Date: 10/08/2025
 Collect Time: 10:07 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0773-08-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0773-08-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	9		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	68		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	23500		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	2		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	22		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	ND		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	5040		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	8		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	1870		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	150		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	ND		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	4		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0773-08-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	ND		ug/L	1000.0	10/11/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/11/2025	AB25-1010-02
Sulfate	6060		ug/L	1000.0	10/11/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0773-08-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	103		mg/L	10.0	10/09/2025	AB25-1009-06



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
Field Sample ID: **TW-19-06A**
Lab Sample ID: 25-0773-08
Matrix: Groundwater

Laboratory Project: **25-0773**
Collect Date: 10/08/2025
Collect Time: 10:07 AM

Alkalinity by SM 2320B

Aliquot #: 25-0773-08-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	72300		ug/L	10000.0	10/14/2025	AB25-1014-01
Alkalinity, Bicarbonate	72300		ug/L	10000.0	10/14/2025	AB25-1014-01
Alkalinity, Carbonate	ND		ug/L	10000.0	10/14/2025	AB25-1014-01

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **DUP-07**
 Lab Sample ID: 25-0773-09
 Matrix: Groundwater

Laboratory Project: **25-0773**
 Collect Date: 10/07/2025
 Collect Time: 12:00 AM

Mercury by EPA 7470A, Total, Aqueous Aliquot #: 25-0773-09-C01-A01 Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	ND		ug/L	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp Aliquot #: 25-0773-09-C01-A02 Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Arsenic	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Barium	16		ug/L	5.0	10/13/2025	AB25-1013-03
Beryllium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Boron	49		ug/L	20.0	10/13/2025	AB25-1013-03
Cadmium	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Calcium	12200		ug/L	1000.0	10/13/2025	AB25-1013-03
Chromium	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Cobalt	ND		ug/L	6.0	10/13/2025	AB25-1013-03
Copper	1		ug/L	1.0	10/13/2025	AB25-1013-03
Iron	47		ug/L	20.0	10/13/2025	AB25-1013-03
Lead	ND		ug/L	1.0	10/13/2025	AB25-1013-03
Lithium	ND		ug/L	10.0	10/13/2025	AB25-1013-03
Magnesium	3940		ug/L	1000.0	10/13/2025	AB25-1013-03
Molybdenum	24		ug/L	5.0	10/13/2025	AB25-1013-03
Nickel	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Potassium	339		ug/L	100.0	10/13/2025	AB25-1013-03
Selenium	13		ug/L	1.0	10/13/2025	AB25-1013-03
Silver	ND		ug/L	0.2	10/13/2025	AB25-1013-03
Sodium	2040		ug/L	1000.0	10/13/2025	AB25-1013-03
Thallium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Vanadium	ND		ug/L	2.0	10/13/2025	AB25-1013-03
Zinc	ND		ug/L	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous Aliquot #: 25-0773-09-C02-A01 Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	1470		ug/L	1000.0	10/11/2025	AB25-1010-02
Fluoride	ND		ug/L	1000.0	10/11/2025	AB25-1010-02
Sulfate	11300		ug/L	1000.0	10/11/2025	AB25-1010-02

Total Dissolved Solids by SM 2540C Aliquot #: 25-0773-09-C03-A01 Analyst: N/A

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Total Dissolved Solids	83		mg/L	10.0	10/09/2025	AB25-1009-06



Analytical Report

Report Date: 10/24/25

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
Field Sample ID: **DUP-07**
Lab Sample ID: 25-0773-09
Matrix: Groundwater

Laboratory Project: **25-0773**
Collect Date: 10/07/2025
Collect Time: 12:00 AM

Alkalinity by SM 2320B

Aliquot #: 25-0773-09-C04-A01

Analyst: DLS

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Alkalinity, Total	35400		ug/L	10000.0	10/14/2025	AB25-1014-01
Alkalinity, Bicarbonate	35400		ug/L	10000.0	10/14/2025	AB25-1014-01
Alkalinity, Carbonate	ND		ug/L	10000.0	10/14/2025	AB25-1014-01

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **TW-19-06A MS**
 Lab Sample ID: 25-0773-10
 Matrix: Groundwater

Laboratory Project: **25-0773**
 Collect Date: 10/08/2025
 Collect Time: 10:07 AM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0773-10-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	99.0		%	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0773-10-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	109		%	1.0	10/13/2025	AB25-1013-03
Arsenic	107		%	1.0	10/13/2025	AB25-1013-03
Barium	107		%	5.0	10/13/2025	AB25-1013-03
Beryllium	107		%	1.0	10/13/2025	AB25-1013-03
Boron	101		%	20.0	10/13/2025	AB25-1013-03
Cadmium	107		%	0.2	10/13/2025	AB25-1013-03
Calcium	103		%	1000.0	10/13/2025	AB25-1013-03
Chromium	102		%	1.0	10/13/2025	AB25-1013-03
Cobalt	100		%	6.0	10/13/2025	AB25-1013-03
Copper	100		%	1.0	10/13/2025	AB25-1013-03
Iron	107		%	20.0	10/13/2025	AB25-1013-03
Lead	105		%	1.0	10/13/2025	AB25-1013-03
Lithium	106		%	10.0	10/13/2025	AB25-1013-03
Magnesium	111		%	1000.0	10/13/2025	AB25-1013-03
Molybdenum	107		%	5.0	10/13/2025	AB25-1013-03
Nickel	102		%	2.0	10/13/2025	AB25-1013-03
Potassium	110		%	100.0	10/13/2025	AB25-1013-03
Selenium	107		%	1.0	10/13/2025	AB25-1013-03
Silver	100		%	0.2	10/13/2025	AB25-1013-03
Sodium	109		%	1000.0	10/13/2025	AB25-1013-03
Thallium	108		%	2.0	10/13/2025	AB25-1013-03
Vanadium	105		%	2.0	10/13/2025	AB25-1013-03
Zinc	101		%	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0773-10-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	95		%	1000.0	10/11/2025	AB25-1010-02
Fluoride	93		%	1000.0	10/11/2025	AB25-1010-02
Sulfate	94		%	1000.0	10/11/2025	AB25-1010-02

Laboratory Services

A CENTURY OF EXCELLENCE

Sample Site: **JHC GW Monitoring - Supplemental Wells (395496)**
 Field Sample ID: **TW-19-06A MSD**
 Lab Sample ID: 25-0773-11
 Matrix: Groundwater

Laboratory Project: **25-0773**
 Collect Date: 10/08/2025
 Collect Time: 10:07 AM

Mercury by EPA 7470A, Total, Aqueous

Aliquot #: 25-0773-11-C01-A01

Analyst: CLE

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Mercury	101		%	0.2	10/10/2025	AB25-1009-03

Metals by EPA 6020B: CCR Rule Appendix III-IV Total Metals Exp

Aliquot #: 25-0773-11-C01-A02

Analyst: EB

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Antimony	107		%	1.0	10/13/2025	AB25-1013-03
Arsenic	107		%	1.0	10/13/2025	AB25-1013-03
Barium	104		%	5.0	10/13/2025	AB25-1013-03
Beryllium	105		%	1.0	10/13/2025	AB25-1013-03
Boron	112		%	20.0	10/13/2025	AB25-1013-03
Cadmium	108		%	0.2	10/13/2025	AB25-1013-03
Calcium	112		%	1000.0	10/13/2025	AB25-1013-03
Chromium	104		%	1.0	10/13/2025	AB25-1013-03
Cobalt	99		%	6.0	10/13/2025	AB25-1013-03
Copper	100		%	1.0	10/13/2025	AB25-1013-03
Iron	106		%	20.0	10/13/2025	AB25-1013-03
Lead	104		%	1.0	10/13/2025	AB25-1013-03
Lithium	103		%	10.0	10/13/2025	AB25-1013-03
Magnesium	108		%	1000.0	10/13/2025	AB25-1013-03
Molybdenum	107		%	5.0	10/13/2025	AB25-1013-03
Nickel	100		%	2.0	10/13/2025	AB25-1013-03
Potassium	106		%	100.0	10/13/2025	AB25-1013-03
Selenium	108		%	1.0	10/13/2025	AB25-1013-03
Silver	101		%	0.2	10/13/2025	AB25-1013-03
Sodium	111		%	1000.0	10/13/2025	AB25-1013-03
Thallium	106		%	2.0	10/13/2025	AB25-1013-03
Vanadium	105		%	2.0	10/13/2025	AB25-1013-03
Zinc	102		%	10.0	10/13/2025	AB25-1013-03

Anions by EPA 300.0 CCR Rule Analyte List, Cl, F, SO4, Aqueous

Aliquot #: 25-0773-11-C02-A01

Analyst: KDR

Parameter(s)	Result	Flag	Units	RL	Analysis Date	Tracking
Chloride	96		%	1000.0	10/11/2025	AB25-1010-02
Fluoride	94		%	1000.0	10/11/2025	AB25-1010-02
Sulfate	95		%	1000.0	10/11/2025	AB25-1010-02



Analytical Report

Report Date: 10/24/25

Laboratory Services
A CENTURY OF EXCELLENCE

Data Qualifiers	Exception Summary
-----------------	-------------------

No exceptions occurred.

TITLE: SAMPLE LOG-IN – SHIPMENT INSPECTION FORM

Project Number: 25-0773 Inspection Date: 10/09/25 Inspection By: ck/fmw

Sample Origin/Project Name: Q4-2025 JHC Supplemental

Shipment Delivered By: Enter the type of shipment carrier.

Inter-Company Mail _____ FedEx _____ UPS _____ USPS _____

Tracking Number: _____ Other/Carry In (whom) CIF-Consumers

Shipping Containers: Enter the type and number of shipping containers received.

Cooler (2) Cardboard Box _____ Custom Case _____ Envelope/Mailer _____

Loose/Unpackaged Containers _____ Other _____

Condition of Shipment: Enter the as-received condition of the shipment container.

Damaged Shipment Observed: None Dented _____ Leaking _____

Other _____

Shipment Security: Enter if any of the shipping containers were opened before receipt.

Shipping Containers Received: Opened _____ Sealed N/A _____

Enclosed Documents: Enter the type of documents enclosed with the shipment.

CoC Work Request _____ Air Data Sheet _____ Other _____

Temperature of Containers: Measure the temperature of several sample containers.

As-Received Temperature Range 2.1-4.8 °C Samples Received on Ice: Yes No _____

M&TE # and Expiration LS027723 / 7.7.26

Number and Type of Containers: Enter the type and total number of sample containers received.

Container Type	Water	Soil	Other	Broken	Leaking
VOA (40mL or 60mL)	<u>14</u>	_____	_____	_____	_____
Quart/Liter (g/p)	<u>14</u>	_____	_____	_____	_____
9-oz (amber glass jar)	_____	_____	_____	_____	_____
2-oz (amber glass)	_____	_____	_____	_____	_____
125 mL (plastic)	<u>22</u>	_____	_____	_____	_____
24 mL vial (glass)	_____	_____	_____	_____	_____
250 mL (plastic)	<u>7</u>	_____	_____	_____	_____
Other	_____	_____	_____	_____	_____

All sample pH meeting criteria? Yes No _____ N/A _____ pH paper lot # 210224 Exp. Date 12.1.24

Indicate if an Exception Report (Page 2 of 2) is needed: Yes _____ No

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Emil Blaj
Consumers Energy
135 W Trail Street
Jackson, Michigan 49201

Generated 11/18/2025 4:06:59 PM

JOB DESCRIPTION

JH Campbell Background Wells

JOB NUMBER

160-60010-1

Eurofins St. Louis

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 TestAmerica Project Manager.

Authorization



Generated
11/18/2025 4:06:59 PM

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Case Narrative

Client: Consumers Energy
Project: JH Campbell Background Wells

Job ID: 160-60010-1

Job ID: 160-60010-1

Eurofins St. Louis

Job Narrative 160-60010-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition, all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method.

Eurofins Environment Testing attests to the validity of the laboratory data generated by Eurofins facilities reported herein. All analyses performed by Eurofins Environment Testing facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins Environment Testing's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Calculations are performed before rounding to avoid round-off errors in calculated results.

Proper preservation was noted for the methods performed on these samples, unless otherwise detailed below.

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.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

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

Receipt

The samples were received on 10/17/2025 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved. The temperature of the cooler at receipt time was 23.0°C.

Receipt Exceptions

The following samples were received at the laboratory without a sample collection time documented on the chain of custody: DUP-07 (160-60008-6), DUP-02 (160-60009-6), DUP-01 (160-60010-7) and DUP-03 (160-60012-8). The collection time used was 12:00am.

Method 903.0 - Radium-226 (GFPC)

Samples JHC-MW-15023 (160-60010-1), JHC-MW-15024 (160-60010-2), JHC-MW-15025 (160-60010-3), JHC-MW-15026 (160-60010-4), JHC-MW-15027 (160-60010-5), JHC-MW-15028 (160-60010-6), DUP-01 (160-60010-7), FB-01 (160-60010-8) and EB-01 (160-60010-9) were analyzed for Radium-226 (GFPC). The samples were prepared on 10/22/2025 and analyzed on 11/16/2025 and 11/17/2025.

Method 904.0 - Radium-228 (GFPC)

Samples JHC-MW-15023 (160-60010-1), JHC-MW-15024 (160-60010-2), JHC-MW-15025 (160-60010-3), JHC-MW-15026 (160-60010-4), JHC-MW-15027 (160-60010-5), JHC-MW-15028 (160-60010-6), DUP-01 (160-60010-7), FB-01 (160-60010-8) and EB-01 (160-60010-9) were analyzed for Radium-228 (GFPC). The samples were prepared on 10/22/2025 and analyzed on 11/16/2025 and 11/17/2025.

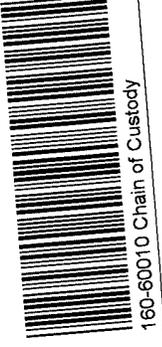
Method Ra226_Ra228 - Combined Radium-226 and Radium-228

Samples JHC-MW-15023 (160-60010-1), JHC-MW-15024 (160-60010-2), JHC-MW-15025 (160-60010-3), JHC-MW-15026 (160-60010-4), JHC-MW-15027 (160-60010-5), JHC-MW-15028 (160-60010-6), DUP-01 (160-60010-7), FB-01 (160-60010-8) and EB-01 (160-60010-9) were analyzed for Combined Radium-226 and Radium-228. The samples were analyzed on 11/17/2025 and 11/18/2025.

Eurofins St. Louis

Chain of Custody Record



Client Information		Lab PM: Korrihizer, Micha L		Carrier Tracking No(s): 160-11904-5895.1	
Company: Consumers Energy		E-Mail: Micha.Korrihizer@et.eurofins.com		State of Origin:	
Address: 135 W. Trail Street		City: Jackson		COC No: 160-11904-5895.1	
State, Zip: MI, 49201		TAT Requested (days): 22 BD		Page: Page 1 of 1	
Phone: 517-788-5888		Compliance Project: Δ Yes Δ No		Job #: 160-60010 Chain of Custody	
Email: emil.blaj@cmsenergy.com		PO #: PR #25100953 / PO4400131557		Preservation Codes: D - HNO3 N - None	
Project Name: JH Campbell Background Wells		MO #: 25-0769			
Site: JH Campbell Background Wells		Project #: 25-0769			
SSOW#:		Due Date Requested:		Analysis Requested	
		Sample Date		Field Filtered Sample (Yes or No)	
		Sample Time		Perform MS/MSD (Yes or No)	
		Sample Type (C=Comp, G=grab)		903.0 - Radium-226 (GFC)	
		Matrix (W=water, S=solid, O=wastewat, BT=Tissue, A=Air)		904.0 - Radium-228 (GFC)	
		Preservation Code:		Radium-226/228 GFC - Combined Ra-226/Ra-228 calculation	
		Sample Date		Total Number of Cont	
		Sample Time		Other:	
		Sample Type		Special Instructions/Note:	
		Matrix			
		Preservation Code:			
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Login Sample Receipt Checklist

Client: Consumers Energy

Job Number: 160-60010-1

Login Number: 60010

List Source: Eurofins St. Louis

List Number: 1

Creator: Pinette, Meadow L

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?	False	Samplers name is not on the COC
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.	False	No time on COC or sample container for sample 7
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-60010-1

Qualifiers

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 Summary

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-60010-1

Method	Method Description	Protocol	Laboratory
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
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



Sample Summary

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-60010-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
160-60010-1	JHC-MW-15023	Water	10/07/25 16:31	10/17/25 10:35	Michigan
160-60010-2	JHC-MW-15024	Water	10/07/25 18:36	10/17/25 10:35	Michigan
160-60010-3	JHC-MW-15025	Water	10/08/25 10:06	10/17/25 10:35	Michigan
160-60010-4	JHC-MW-15026	Water	10/08/25 11:21	10/17/25 10:35	Michigan
160-60010-5	JHC-MW-15027	Water	10/08/25 12:51	10/17/25 10:35	Michigan
160-60010-6	JHC-MW-15028	Water	10/08/25 13:56	10/17/25 10:35	Michigan
160-60010-7	DUP-01	Water	10/08/25 00:00	10/17/25 10:35	Michigan
160-60010-8	FB-01	Water	10/08/25 14:15	10/17/25 10:35	Michigan
160-60010-9	EB-01	Water	10/08/25 14:36	10/17/25 10:35	Michigan

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Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-60010-1

Client Sample ID: JHC-MW-15023

Lab Sample ID: 160-60010-1

Date Collected: 10/07/25 16:31

Matrix: Water

Date Received: 10/17/25 10:35

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	0.415	U	0.301	0.303	1.00	0.436	pCi/L	10/22/25 07:43	11/16/25 13:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.6		30 - 110					10/22/25 07:43	11/16/25 13:48	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	0.266	U	0.347	0.347	1.00	0.578	pCi/L	10/22/25 07:46	11/16/25 10:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.6		30 - 110					10/22/25 07:46	11/16/25 10:50	1
Y Carrier	80.0		30 - 110					10/22/25 07:46	11/16/25 10:50	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.681		0.459	0.461	5.00	0.578	pCi/L		11/17/25 13:44	1

Client Sample ID: JHC-MW-15024

Lab Sample ID: 160-60010-2

Date Collected: 10/07/25 18:36

Matrix: Water

Date Received: 10/17/25 10:35

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	0.217	U	0.225	0.225	1.00	0.355	pCi/L	10/22/25 07:43	11/16/25 13:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.9		30 - 110					10/22/25 07:43	11/16/25 13:48	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	1.05		0.430	0.441	1.00	0.559	pCi/L	10/22/25 07:46	11/16/25 10:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.9		30 - 110					10/22/25 07:46	11/16/25 10:50	1
Y Carrier	83.4		30 - 110					10/22/25 07:46	11/16/25 10:50	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-60010-1

Client Sample ID: JHC-MW-15024

Lab Sample ID: 160-60010-2

Date Collected: 10/07/25 18:36

Matrix: Water

Date Received: 10/17/25 10:35

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.27		0.485	0.495	5.00	0.559	pCi/L		11/17/25 13:44	1

Client Sample ID: JHC-MW-15025

Lab Sample ID: 160-60010-3

Date Collected: 10/08/25 10:06

Matrix: Water

Date Received: 10/17/25 10:35

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	0.267	U	0.278	0.279	1.00	0.443	pCi/L	10/22/25 07:43	11/16/25 13:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	75.1		30 - 110					10/22/25 07:43	11/16/25 13:49	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	1.30		0.525	0.538	1.00	0.686	pCi/L	10/22/25 07:46	11/16/25 10:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	75.1		30 - 110					10/22/25 07:46	11/16/25 10:51	1
Y Carrier	79.6		30 - 110					10/22/25 07:46	11/16/25 10:51	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.56		0.594	0.606	5.00	0.686	pCi/L		11/17/25 13:44	1

Client Sample ID: JHC-MW-15026

Lab Sample ID: 160-60010-4

Date Collected: 10/08/25 11:21

Matrix: Water

Date Received: 10/17/25 10:35

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	0.180	U	0.279	0.279	1.00	0.476	pCi/L	10/22/25 07:43	11/16/25 13:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.3		30 - 110					10/22/25 07:43	11/16/25 13:49	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-60010-1

Client Sample ID: JHC-MW-15026

Lab Sample ID: 160-60010-4

Date Collected: 10/08/25 11:21

Matrix: Water

Date Received: 10/17/25 10:35

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	1.02		0.419	0.429	1.00	0.537	pCi/L	10/22/25 07:46	11/16/25 10:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.3		30 - 110					10/22/25 07:46	11/16/25 10:51	1
Y Carrier	78.1		30 - 110					10/22/25 07:46	11/16/25 10:51	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.20		0.503	0.512	5.00	0.537	pCi/L		11/17/25 13:44	1

Client Sample ID: JHC-MW-15027

Lab Sample ID: 160-60010-5

Date Collected: 10/08/25 12:51

Matrix: Water

Date Received: 10/17/25 10:35

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	0.176	U	0.334	0.335	1.00	0.586	pCi/L	10/22/25 07:43	11/16/25 13:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	70.2		30 - 110					10/22/25 07:43	11/16/25 13:49	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	0.837		0.511	0.517	1.00	0.756	pCi/L	10/22/25 07:46	11/16/25 10:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	70.2		30 - 110					10/22/25 07:46	11/16/25 10:51	1
Y Carrier	81.9		30 - 110					10/22/25 07:46	11/16/25 10:51	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.01		0.610	0.616	5.00	0.756	pCi/L		11/17/25 13:44	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-60010-1

Client Sample ID: JHC-MW-15028

Lab Sample ID: 160-60010-6

Date Collected: 10/08/25 13:56

Matrix: Water

Date Received: 10/17/25 10:35

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	-0.0338	U	0.169	0.169	1.00	0.365	pCi/L	10/22/25 07:47	11/17/25 15:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.4		30 - 110					10/22/25 07:47	11/17/25 15:16	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	-0.179	U	0.319	0.320	1.00	0.649	pCi/L	10/22/25 07:50	11/17/25 10:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.4		30 - 110					10/22/25 07:50	11/17/25 10:03	1
Y Carrier	77.0		30 - 110					10/22/25 07:50	11/17/25 10:03	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.212	U	0.361	0.362	5.00	0.649	pCi/L		11/18/25 10:47	1

Client Sample ID: DUP-01

Lab Sample ID: 160-60010-7

Date Collected: 10/08/25 00:00

Matrix: Water

Date Received: 10/17/25 10:35

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	-0.00696	U	0.162	0.162	1.00	0.339	pCi/L	10/22/25 07:47	11/17/25 15:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.5		30 - 110					10/22/25 07:47	11/17/25 15:16	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	0.339	U	0.353	0.355	1.00	0.572	pCi/L	10/22/25 07:50	11/17/25 10:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.5		30 - 110					10/22/25 07:50	11/17/25 10:04	1
Y Carrier	76.3		30 - 110					10/22/25 07:50	11/17/25 10:04	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-60010-1

Client Sample ID: DUP-01

Lab Sample ID: 160-60010-7

Date Collected: 10/08/25 00:00

Matrix: Water

Date Received: 10/17/25 10:35

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.332	U	0.388	0.390	5.00	0.572	pCi/L		11/18/25 10:47	1

Client Sample ID: FB-01

Lab Sample ID: 160-60010-8

Date Collected: 10/08/25 14:15

Matrix: Water

Date Received: 10/17/25 10:35

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	0.146	U	0.257	0.258	1.00	0.450	pCi/L	10/22/25 07:47	11/17/25 15:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	72.1		30 - 110					10/22/25 07:47	11/17/25 15:16	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	0.382	U	0.438	0.440	1.00	0.719	pCi/L	10/22/25 07:50	11/17/25 10:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	72.1		30 - 110					10/22/25 07:50	11/17/25 10:04	1
Y Carrier	74.8		30 - 110					10/22/25 07:50	11/17/25 10:04	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.528	U	0.508	0.510	5.00	0.719	pCi/L		11/18/25 10:47	1

Client Sample ID: EB-01

Lab Sample ID: 160-60010-9

Date Collected: 10/08/25 14:36

Matrix: Water

Date Received: 10/17/25 10:35

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	0.0442	U	0.237	0.237	1.00	0.452	pCi/L	10/22/25 07:47	11/17/25 15:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	74.6		30 - 110					10/22/25 07:47	11/17/25 15:16	1

Client Sample Results

Client: Consumers Energy
 Project/Site: JH Campbell Background Wells

Job ID: 160-60010-1

Client Sample ID: EB-01

Lab Sample ID: 160-60010-9

Date Collected: 10/08/25 14:36

Matrix: Water

Date Received: 10/17/25 10:35

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	0.708	U	0.502	0.506	1.00	0.760	pCi/L	10/22/25 07:50	11/17/25 10:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	74.6		30 - 110					10/22/25 07:50	11/17/25 10:04	1
Y Carrier	71.4		30 - 110					10/22/25 07:50	11/17/25 10:04	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.752	U	0.555	0.559	5.00	0.760	pCi/L		11/18/25 10:47	1

QC Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-60010-1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-741695/1-A
Matrix: Water
Analysis Batch: 745429

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 741695

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.2307	U	0.216	0.217	1.00	0.330	pCi/L	10/22/25 07:43	11/16/25 13:36	1
Carrier	MB		Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	%Yield	MB Qualifier	30 - 110					10/22/25 07:43	11/16/25 13:36	1
	89.1									

Lab Sample ID: LCS 160-741695/2-A
Matrix: Water
Analysis Batch: 745429

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 741695

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits		
				Uncert. (2σ+/-)							
Radium-226	9.57	7.842		1.12	1.00	0.347	pCi/L	82	75 - 125		
Carrier	LCS	LCS									
Ba Carrier	%Yield	Qualifier	Limits								
	89.6		30 - 110								

Lab Sample ID: 160-60009-B-6-C DU
Matrix: Water
Analysis Batch: 745440

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 741695

Analyte	Sample		DU	DU	Total	RL	MDC	Unit	RER	RER Limit	
	Result	Sample Qual	Result	Qual	Uncert. (2σ+/-)						
Radium-226	0.583		0.2640	U	0.244	1.00	0.371	pCi/L	0.58	1	
Carrier	DU	DU									
Ba Carrier	%Yield	Qualifier	Limits								
	80.1		30 - 110								

Lab Sample ID: MB 160-741697/1-A
Matrix: Water
Analysis Batch: 745605

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 741697

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-0.03555	U	0.166	0.166	1.00	0.360	pCi/L	10/22/25 07:47	11/17/25 15:00	1
Carrier	MB		Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	%Yield	MB Qualifier	30 - 110					10/22/25 07:47	11/17/25 15:00	1
	82.2									

Lab Sample ID: LCS 160-741697/2-A
Matrix: Water
Analysis Batch: 745609

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 741697

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	9.57	11.07		1.43	1.00	0.326	pCi/L	116	75 - 125

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QC Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-60010-1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-741697/2-A
Matrix: Water
Analysis Batch: 745609

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 741697

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	86.1		30 - 110

Lab Sample ID: 160-60011-B-7-A DU
Matrix: Water
Analysis Batch: 745609

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 741697

Analyte	Sample		DU		Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual						
Radium-226	0.103	U	0.1357	U	0.219	1.00	0.377	pCi/L	0.08	1

	DU	DU	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	85.8		30 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-741696/1-A
Matrix: Water
Analysis Batch: 745429

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 741696

Analyte	MB		Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier								
Radium-228	-0.3333	U	0.336	0.337	1.00	0.686	pCi/L	10/22/25 07:46	11/16/25 10:33	1

	MB	MB	Limits	Prepared	Analyzed	Dil Fac
Carrier	%Yield	Qualifier				
Ba Carrier	89.1		30 - 110	10/22/25 07:46	11/16/25 10:33	1
Y Carrier	82.6		30 - 110	10/22/25 07:46	11/16/25 10:33	1

Lab Sample ID: LCS 160-741696/2-A
Matrix: Water
Analysis Batch: 745429

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 741696

Analyte	Spike Added	LCS		Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
		Result	Qual						
Radium-228	7.93	9.370		1.28	1.00	0.493	pCi/L	118	75 - 125

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	89.6		30 - 110
Y Carrier	80.7		30 - 110

Lab Sample ID: 160-60009-B-6-D DU
Matrix: Water
Analysis Batch: 745429

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 741696

Analyte	Sample		DU		Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual						
Radium-228	0.958		1.728		0.572	1.00	0.637	pCi/L	0.77	1

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QC Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-60010-1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: 160-60009-B-6-D DU
Matrix: Water
Analysis Batch: 745429

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 741696

	DU	DU	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	80.1		30 - 110
Y Carrier	74.4		30 - 110

Lab Sample ID: MB 160-741698/1-A
Matrix: Water
Analysis Batch: 745610

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 741698

Analyte	MB MB		Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier								
Radium-228	0.1856	U	0.356	0.356	1.00	0.617	pCi/L	10/22/25 07:50	11/17/25 10:03	1

Carrier	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Yield	Qualifier				
Ba Carrier	82.2		30 - 110	10/22/25 07:50	11/17/25 10:03	1
Y Carrier	76.3		30 - 110	10/22/25 07:50	11/17/25 10:03	1

Lab Sample ID: LCS 160-741698/2-A
Matrix: Water
Analysis Batch: 745610

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 741698

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits

Carrier	LCS	LCS	Limits
	%Yield	Qualifier	
Ba Carrier	86.1		30 - 110
Y Carrier	83.4		30 - 110

Lab Sample ID: 160-60011-B-7-B DU
Matrix: Water
Analysis Batch: 745605

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 741698

Analyte	Sample Sample		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
	Result	Qual								
Radium-228	0.283	U	0.3865	U	0.455	1.00	0.747	pCi/L	0.11	1

Carrier	DU	DU	Limits
	%Yield	Qualifier	
Ba Carrier	85.8		30 - 110
Y Carrier	73.6		30 - 110

QC Association Summary

Client: Consumers Energy
Project/Site: JH Campbell Background Wells

Job ID: 160-60010-1

Rad

Prep Batch: 741695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-60010-1	JHC-MW-15023	Total/NA	Water	PrecSep-21	
160-60010-2	JHC-MW-15024	Total/NA	Water	PrecSep-21	
160-60010-3	JHC-MW-15025	Total/NA	Water	PrecSep-21	
160-60010-4	JHC-MW-15026	Total/NA	Water	PrecSep-21	
160-60010-5	JHC-MW-15027	Total/NA	Water	PrecSep-21	
MB 160-741695/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-741695/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-60009-B-6-C DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 741696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-60010-1	JHC-MW-15023	Total/NA	Water	PrecSep_0	
160-60010-2	JHC-MW-15024	Total/NA	Water	PrecSep_0	
160-60010-3	JHC-MW-15025	Total/NA	Water	PrecSep_0	
160-60010-4	JHC-MW-15026	Total/NA	Water	PrecSep_0	
160-60010-5	JHC-MW-15027	Total/NA	Water	PrecSep_0	
MB 160-741696/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-741696/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-60009-B-6-D DU	Duplicate	Total/NA	Water	PrecSep_0	

Prep Batch: 741697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-60010-6	JHC-MW-15028	Total/NA	Water	PrecSep-21	
160-60010-7	DUP-01	Total/NA	Water	PrecSep-21	
160-60010-8	FB-01	Total/NA	Water	PrecSep-21	
160-60010-9	EB-01	Total/NA	Water	PrecSep-21	
MB 160-741697/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-741697/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-60011-B-7-A DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 741698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-60010-6	JHC-MW-15028	Total/NA	Water	PrecSep_0	
160-60010-7	DUP-01	Total/NA	Water	PrecSep_0	
160-60010-8	FB-01	Total/NA	Water	PrecSep_0	
160-60010-9	EB-01	Total/NA	Water	PrecSep_0	
MB 160-741698/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-741698/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-60011-B-7-B DU	Duplicate	Total/NA	Water	PrecSep_0	

Tracer/Carrier Summary

Client: Consumers Energy
 Project/Site: JH Campbell Background Wells

Job ID: 160-60010-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)			
Lab Sample ID	Client Sample ID	Ba (30-110)			
160-60009-B-6-C DU	Duplicate	80.1			
160-60010-1	JHC-MW-15023	86.6			
160-60010-2	JHC-MW-15024	86.9			
160-60010-3	JHC-MW-15025	75.1			
160-60010-4	JHC-MW-15026	89.3			
160-60010-5	JHC-MW-15027	70.2			
160-60010-6	JHC-MW-15028	81.4			
160-60010-7	DUP-01	85.5			
160-60010-8	FB-01	72.1			
160-60010-9	EB-01	74.6			
160-60011-B-7-A DU	Duplicate	85.8			
LCS 160-741695/2-A	Lab Control Sample	89.6			
LCS 160-741697/2-A	Lab Control Sample	86.1			
MB 160-741695/1-A	Method Blank	89.1			
MB 160-741697/1-A	Method Blank	82.2			

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)			
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)		
160-60009-B-6-D DU	Duplicate	80.1	74.4		
160-60010-1	JHC-MW-15023	86.6	80.0		
160-60010-2	JHC-MW-15024	86.9	83.4		
160-60010-3	JHC-MW-15025	75.1	79.6		
160-60010-4	JHC-MW-15026	89.3	78.1		
160-60010-5	JHC-MW-15027	70.2	81.9		
160-60010-6	JHC-MW-15028	81.4	77.0		
160-60010-7	DUP-01	85.5	76.3		
160-60010-8	FB-01	72.1	74.8		
160-60010-9	EB-01	74.6	71.4		
160-60011-B-7-B DU	Duplicate	85.8	73.6		
LCS 160-741696/2-A	Lab Control Sample	89.6	80.7		
LCS 160-741698/2-A	Lab Control Sample	86.1	83.4		
MB 160-741696/1-A	Method Blank	89.1	82.6		
MB 160-741698/1-A	Method Blank	82.2	76.3		

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Emil Blaj
Consumers Energy
135 W Trail Street
Jackson, Michigan 49201

Generated 11/17/2025 3:04:03 PM

JOB DESCRIPTION

JH Campbell Pond A Wells

JOB NUMBER

160-60009-1

Eurofins St. Louis

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 TestAmerica Project Manager.

Authorization



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11/17/2025 3:04:03 PM

Authorized for release by
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Case Narrative

Client: Consumers Energy
Project: JH Campbell Pond A Wells

Job ID: 160-60009-1

Job ID: 160-60009-1

Eurofins St. Louis

Job Narrative 160-60009-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition, all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method.

Eurofins Environment Testing attests to the validity of the laboratory data generated by Eurofins facilities reported herein. All analyses performed by Eurofins Environment Testing facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins Environment Testing's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Calculations are performed before rounding to avoid round-off errors in calculated results.

Proper preservation was noted for the methods performed on these samples, unless otherwise detailed below.

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.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

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

Receipt

The samples were received on 10/17/2025 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved. The temperature of the cooler at receipt time was 22.6°C.

Receipt Exceptions

The following samples were received at the laboratory without a sample collection time documented on the chain of custody: DUP-07 (160-60008-6), DUP-02 (160-60009-6), DUP-01 (160-60010-7) and DUP-03 (160-60012-8). The collection time used was 12:00am.

Method 903.0 - Radium-226 (GFPC)

Samples JHC-MW-15006 (160-60009-1), JHC-MW-15007R (160-60009-2), JHC-MW-15008R (160-60009-3), JHC-MW-15009R (160-60009-4), JHC-MW-15011R (160-60009-5), DUP-02 (160-60009-6), FB-02 (160-60009-7) and EB-02 (160-60009-8) were analyzed for Radium-226 (GFPC). The samples were prepared on 10/21/2025 and 10/22/2025 and analyzed on 11/16/2025.

Method 904.0 - Radium-228 (GFPC)

Samples JHC-MW-15006 (160-60009-1), JHC-MW-15007R (160-60009-2), JHC-MW-15008R (160-60009-3), JHC-MW-15009R (160-60009-4), JHC-MW-15011R (160-60009-5), DUP-02 (160-60009-6), FB-02 (160-60009-7) and EB-02 (160-60009-8) were analyzed for Radium-228 (GFPC). The samples were prepared on 10/21/2025 and 10/22/2025 and analyzed on 11/16/2025.

Method Ra226_Ra228 - Combined Radium-226 and Radium-228

Samples JHC-MW-15006 (160-60009-1), JHC-MW-15007R (160-60009-2), JHC-MW-15008R (160-60009-3), JHC-MW-15009R (160-60009-4), JHC-MW-15011R (160-60009-5), DUP-02 (160-60009-6), FB-02 (160-60009-7) and EB-02 (160-60009-8) were analyzed for Combined Radium-226 and Radium-228. The samples were analyzed on 11/17/2025.

Eurofins St. Louis

Chain of Custody Record



Client Information		Sampler: Lab PM: Carrier Tracking No(s):		COC No: 160-11904-5895.1	
Client Contact: Korrinhizer, Micha L		State of Origin:		Page: Page 1 of 1	
Emil Blaj		E-Mail: Micha.Korrinhizer@et.eurofins.com		Job #:	
Company: Consumers Energy		PWSID:		Preservation Codes: D - HNO3 N - None	
Address: 135 W Trail Street		Due Date Requested:		<div style="text-align: center;">  160-60009 Chain of Custody </div>	
City: Jackson		TAT Requested (days): 22 BD			
State, Zip: MI, 49201		Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Phone: 517-788-5888		PO #: PR #25100953 / PO4400131557			
Email: emil.blaj@cmsenergy.com		WO #: 25-0770			
Project Name: JH Campbell Pond A Wells		Project #: 25-0770			
Site:		SSOW#:		Other:	

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Solid, Sewage, Oil, etc.)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0 - Radium-226 (GFC)	904.0 - Radium-228 (GFC)	Ra226Ra228 GFC - Combined Ra-226/Ra-228 calculation	Total Number of Cont.	Special Instructions/Note:
JHC-MW-15006	10/8/25	1046	Water	Water	D	X	X	X	X	X	2	
JHC-MW-15007R	10/8/25	0956	Water	Water	D	X	X	X	X	X	2	
JHC-MW-15008R	10/7/25	1636	Water	Water	D	X	X	X	X	X	2	
JHC-MW-15009R	10/7/25	1536	Water	Water	D	X	X	X	X	X	2	
JHC-MW-15011R	10/8/25	1151	Water	Water	D	X	X	X	X	X	2	
DUP-02	10/7/25	-	Water	Water	D	X	X	X	X	X	2	
FB-02	10/8/25	0933	Water	Water	D	X	X	X	X	X	2	
EB-02	10/7/25	2038	Water	Water	D	X	X	X	X	X	2	

Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological	
Deliverable Requested: I, II, III, IV, Other (specify)	
EQUS EDD for TRC	
Empty Kit Relinquished by:	Time:
Relinquished by: <i>f</i>	Date: 10/15/25 14:30
Relinquished by: <i>M. Pinette</i>	Date/Time: 10/17/2025 10:35
Relinquished by: Meadow Pinette	Date/Time:
Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:	



Login Sample Receipt Checklist

Client: Consumers Energy

Job Number: 160-60009-1

Login Number: 60009

List Source: Eurofins St. Louis

List Number: 1

Creator: Pinette, Meadow L

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?	False	Samplers name is not on the COC
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.	False	No time on COC or sample container for sample 6
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-60009-1

Qualifiers

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 Summary

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-60009-1

Method	Method Description	Protocol	Laboratory
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
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



Sample Summary

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-60009-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
160-60009-1	JHC-MW-15006	Water	10/08/25 10:46	10/17/25 10:35	Michigan
160-60009-2	JHC-MW-15007R	Water	10/08/25 09:56	10/17/25 10:35	Michigan
160-60009-3	JHC-MW-15008R	Water	10/07/25 16:36	10/17/25 10:35	Michigan
160-60009-4	JHC-MW-15009R	Water	10/07/25 15:36	10/17/25 10:35	Michigan
160-60009-5	JHC-MW-15011R	Water	10/08/25 11:51	10/17/25 10:35	Michigan
160-60009-6	DUP-02	Water	10/07/25 00:00	10/17/25 10:35	Michigan
160-60009-7	FB-02	Water	10/08/25 09:33	10/17/25 10:35	Michigan
160-60009-8	EB-02	Water	10/07/25 20:38	10/17/25 10:35	Michigan

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-60009-1

Client Sample ID: JHC-MW-15006

Lab Sample ID: 160-60009-1

Date Collected: 10/08/25 10:46

Matrix: Water

Date Received: 10/17/25 10:35

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	0.0195	U	0.244	0.244	1.00	0.468	pCi/L	10/21/25 08:00	11/16/25 15:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.5		30 - 110					10/21/25 08:00	11/16/25 15:42	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	0.300	U	0.357	0.358	1.00	0.589	pCi/L	10/21/25 08:03	11/16/25 10:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.5		30 - 110					10/21/25 08:03	11/16/25 10:57	1
Y Carrier	82.6		30 - 110					10/21/25 08:03	11/16/25 10:57	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.320	U	0.432	0.433	5.00	0.589	pCi/L		11/17/25 13:44	1

Client Sample ID: JHC-MW-15007R

Lab Sample ID: 160-60009-2

Date Collected: 10/08/25 09:56

Matrix: Water

Date Received: 10/17/25 10:35

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	0.164	U	0.230	0.230	1.00	0.388	pCi/L	10/21/25 08:00	11/16/25 15:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.3		30 - 110					10/21/25 08:00	11/16/25 15:40	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	0.617		0.366	0.370	1.00	0.530	pCi/L	10/21/25 08:03	11/16/25 10:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.3		30 - 110					10/21/25 08:03	11/16/25 10:58	1
Y Carrier	85.2		30 - 110					10/21/25 08:03	11/16/25 10:58	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-60009-1

Client Sample ID: JHC-MW-15007R

Lab Sample ID: 160-60009-2

Date Collected: 10/08/25 09:56

Matrix: Water

Date Received: 10/17/25 10:35

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.781		0.432	0.436	5.00	0.530	pCi/L		11/17/25 13:44	1

Client Sample ID: JHC-MW-15008R

Lab Sample ID: 160-60009-3

Date Collected: 10/07/25 16:36

Matrix: Water

Date Received: 10/17/25 10:35

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	0.112	U	0.190	0.191	1.00	0.333	pCi/L	10/21/25 08:00	11/16/25 15:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.8		30 - 110					10/21/25 08:00	11/16/25 15:40	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	0.898		0.434	0.442	1.00	0.605	pCi/L	10/21/25 08:03	11/16/25 10:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.8		30 - 110					10/21/25 08:03	11/16/25 10:58	1
Y Carrier	86.4		30 - 110					10/21/25 08:03	11/16/25 10:58	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.01		0.474	0.482	5.00	0.605	pCi/L		11/17/25 13:44	1

Client Sample ID: JHC-MW-15009R

Lab Sample ID: 160-60009-4

Date Collected: 10/07/25 15:36

Matrix: Water

Date Received: 10/17/25 10:35

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	0.436		0.294	0.297	1.00	0.416	pCi/L	10/22/25 07:43	11/16/25 13:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.7		30 - 110					10/22/25 07:43	11/16/25 13:49	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-60009-1

Client Sample ID: JHC-MW-15009R

Lab Sample ID: 160-60009-4

Date Collected: 10/07/25 15:36

Matrix: Water

Date Received: 10/17/25 10:35

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	1.30		0.483	0.497	1.00	0.610	pCi/L	10/22/25 07:46	11/16/25 10:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.7		30 - 110					10/22/25 07:46	11/16/25 10:41	1
Y Carrier	79.3		30 - 110					10/22/25 07:46	11/16/25 10:41	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.74		0.565	0.579	5.00	0.610	pCi/L		11/17/25 13:44	1

Client Sample ID: JHC-MW-15011R

Lab Sample ID: 160-60009-5

Date Collected: 10/08/25 11:51

Matrix: Water

Date Received: 10/17/25 10:35

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	0.329	U	0.253	0.255	1.00	0.365	pCi/L	10/22/25 07:43	11/16/25 13:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.5		30 - 110					10/22/25 07:43	11/16/25 13:48	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	0.954		0.430	0.438	1.00	0.566	pCi/L	10/22/25 07:46	11/16/25 10:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.5		30 - 110					10/22/25 07:46	11/16/25 10:41	1
Y Carrier	78.5		30 - 110					10/22/25 07:46	11/16/25 10:41	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.28		0.499	0.507	5.00	0.566	pCi/L		11/17/25 13:44	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-60009-1

Client Sample ID: DUP-02

Lab Sample ID: 160-60009-6

Date Collected: 10/07/25 00:00

Matrix: Water

Date Received: 10/17/25 10:35

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	0.583		0.298	0.303	1.00	0.365	pCi/L	10/22/25 07:43	11/16/25 13:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.2		30 - 110					10/22/25 07:43	11/16/25 13:48	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	0.958		0.418	0.427	1.00	0.537	pCi/L	10/22/25 07:46	11/16/25 10:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.2		30 - 110					10/22/25 07:46	11/16/25 10:41	1
Y Carrier	75.1		30 - 110					10/22/25 07:46	11/16/25 10:41	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.54		0.513	0.524	5.00	0.537	pCi/L		11/17/25 13:44	1

Client Sample ID: FB-02

Lab Sample ID: 160-60009-7

Date Collected: 10/08/25 09:33

Matrix: Water

Date Received: 10/17/25 10:35

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	0.0181	U	0.242	0.242	1.00	0.468	pCi/L	10/22/25 07:43	11/16/25 13:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.0		30 - 110					10/22/25 07:43	11/16/25 13:48	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		0.453	0.460	1.00	0.645	pCi/L	10/22/25 07:46	11/16/25 10:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.0		30 - 110					10/22/25 07:46	11/16/25 10:50	1
Y Carrier	75.5		30 - 110					10/22/25 07:46	11/16/25 10:50	1

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-60009-1

Client Sample ID: FB-02

Date Collected: 10/08/25 09:33

Date Received: 10/17/25 10:35

Lab Sample ID: 160-60009-7

Matrix: Water

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.889		0.514	0.520	5.00	0.645	pCi/L		11/17/25 13:44	1

Client Sample ID: EB-02

Date Collected: 10/07/25 20:38

Date Received: 10/17/25 10:35

Lab Sample ID: 160-60009-8

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	0.263	U	0.226	0.228	1.00	0.340	pCi/L	10/22/25 07:43	11/16/25 13:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.3		30 - 110					10/22/25 07:43	11/16/25 13:48	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	1.15		0.453	0.465	1.00	0.594	pCi/L	10/22/25 07:46	11/16/25 10:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.3		30 - 110					10/22/25 07:46	11/16/25 10:50	1
Y Carrier	83.0		30 - 110					10/22/25 07:46	11/16/25 10:50	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.42		0.506	0.518	5.00	0.594	pCi/L		11/17/25 13:44	1

QC Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-60009-1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-741517/1-A
Matrix: Water
Analysis Batch: 745441

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 741517

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.1663	U	0.232	0.233	1.00	0.393	pCi/L	10/21/25 08:00	11/16/25 13:48	1
Carrier	MB MB		Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.6		30 - 110					10/21/25 08:00	11/16/25 13:48	1

Lab Sample ID: LCS 160-741517/2-A
Matrix: Water
Analysis Batch: 745441

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 741517

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec
				Uncert. (2σ+/-)					Limits
Radium-226	9.57	9.553		1.29	1.00	0.346	pCi/L	100	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	86.6		30 - 110						

Lab Sample ID: 480-233499-A-20-B MS
Matrix: Water
Analysis Batch: 745441

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 741517

Analyte	Sample	Sample	Spike Added	MS	MS	Total	RL	MDC	Unit	%Rec	%Rec
	Result	Qual		Result	Qual	Uncert. (2σ+/-)					Limits
Radium-226	0.354	U	9.53	9.170		1.25	1.00	0.358	pCi/L	93	60 - 140
Carrier	MS %Yield	MS Qualifier	Limits								
Ba Carrier	88.8		30 - 110								

Lab Sample ID: 480-233499-B-20-A MSD
Matrix: Water
Analysis Batch: 745441

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 741517

Analyte	Sample	Sample	Spike Added	MSD	MSD	Total	RL	MDC	Unit	%Rec	%Rec	RER	RER
	Result	Qual		Result	Qual	Uncert. (2σ+/-)					Limits	Limit	
Radium-226	0.354	U	9.55	8.988		1.24	1.00	0.444	pCi/L	90	60 - 140	0.07	1
Carrier	MSD %Yield	MSD Qualifier	Limits										
Ba Carrier	89.3		30 - 110										

Lab Sample ID: MB 160-741695/1-A
Matrix: Water
Analysis Batch: 745429

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 741695

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.2307	U	0.216	0.217	1.00	0.330	pCi/L	10/22/25 07:43	11/16/25 13:36	1

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QC Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-60009-1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-741695/1-A
Matrix: Water
Analysis Batch: 745429

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 741695

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	89.1		30 - 110	10/22/25 07:43	11/16/25 13:36	1

Lab Sample ID: LCS 160-741695/2-A
Matrix: Water
Analysis Batch: 745429

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 741695

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	9.57	7.842		1.12	1.00	0.347	pCi/L	82	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	89.6		30 - 110

Lab Sample ID: 160-60009-6 DU
Matrix: Water
Analysis Batch: 745440

Client Sample ID: DUP-02
Prep Type: Total/NA
Prep Batch: 741695

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.583		0.2640	U	0.244	1.00	0.371	pCi/L	0.58	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	80.1		30 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-741518/1-A
Matrix: Water
Analysis Batch: 745440

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 741518

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4175	U	0.340	0.342	1.00	0.529	pCi/L	10/21/25 08:03	11/16/25 10:55	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	89.6		30 - 110	10/21/25 08:03	11/16/25 10:55	1
Y Carrier	84.1		30 - 110	10/21/25 08:03	11/16/25 10:55	1

Lab Sample ID: LCS 160-741518/2-A
Matrix: Water
Analysis Batch: 745440

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 741518

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	7.93	9.719		1.34	1.00	0.549	pCi/L	123	75 - 125

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QC Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-60009-1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-741518/2-A
Matrix: Water
Analysis Batch: 745440

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 741518

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	86.6		30 - 110
Y Carrier	81.5		30 - 110

Lab Sample ID: 480-233499-A-20-D MS
Matrix: Water
Analysis Batch: 745440

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 741518

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	0.394	U	7.89	9.912		1.36	1.00	0.632	pCi/L	121	60 - 140

	MS	MS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	88.8		30 - 110
Y Carrier	82.2		30 - 110

Lab Sample ID: 480-233499-B-20-B MSD
Matrix: Water
Analysis Batch: 745440

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 741518

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228	0.394	U	7.91	9.081		1.26	1.00	0.567	pCi/L	110	60 - 140	0.32	1

	MSD	MSD	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	89.3		30 - 110
Y Carrier	84.1		30 - 110

Lab Sample ID: MB 160-741696/1-A
Matrix: Water
Analysis Batch: 745429

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 741696

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.3333	U	0.336	0.337	1.00	0.686	pCi/L	10/22/25 07:46	11/16/25 10:33	1

	MB	MB		Prepared	Analyzed	Dil Fac
Carrier	%Yield	Qualifier	Limits			
Ba Carrier	89.1		30 - 110	10/22/25 07:46	11/16/25 10:33	1
Y Carrier	82.6		30 - 110	10/22/25 07:46	11/16/25 10:33	1

Lab Sample ID: LCS 160-741696/2-A
Matrix: Water
Analysis Batch: 745429

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 741696

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	7.93	9.370		1.28	1.00	0.493	pCi/L	118	75 - 125

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QC Sample Results

Client: Consumers Energy
 Project/Site: JH Campbell Pond A Wells

Job ID: 160-60009-1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-741696/2-A
Matrix: Water
Analysis Batch: 745429

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 741696

Carrier	LCS		Limits
	%Yield	Qualifier	
Ba Carrier	89.6		30 - 110
Y Carrier	80.7		30 - 110

Lab Sample ID: 160-60009-6 DU
Matrix: Water
Analysis Batch: 745429

Client Sample ID: DUP-02
Prep Type: Total/NA
Prep Batch: 741696

Analyte	Sample		DU		Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	Limit
	Result	Qual	Result	Qual						
Radium-228	0.958		1.728		0.572	1.00	0.637	pCi/L	0.77	1

Carrier	DU		Limits
	%Yield	Qualifier	
Ba Carrier	80.1		30 - 110
Y Carrier	74.4		30 - 110

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QC Association Summary

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-60009-1

Rad

Prep Batch: 741517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-60009-1	JHC-MW-15006	Total/NA	Water	PrecSep-21	
160-60009-2	JHC-MW-15007R	Total/NA	Water	PrecSep-21	
160-60009-3	JHC-MW-15008R	Total/NA	Water	PrecSep-21	
MB 160-741517/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-741517/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
480-233499-A-20-B MS	Matrix Spike	Total/NA	Water	PrecSep-21	
480-233499-B-20-A MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 741518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-60009-1	JHC-MW-15006	Total/NA	Water	PrecSep_0	
160-60009-2	JHC-MW-15007R	Total/NA	Water	PrecSep_0	
160-60009-3	JHC-MW-15008R	Total/NA	Water	PrecSep_0	
MB 160-741518/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-741518/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
480-233499-A-20-D MS	Matrix Spike	Total/NA	Water	PrecSep_0	
480-233499-B-20-B MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep_0	

Prep Batch: 741695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-60009-4	JHC-MW-15009R	Total/NA	Water	PrecSep-21	
160-60009-5	JHC-MW-15011R	Total/NA	Water	PrecSep-21	
160-60009-6	DUP-02	Total/NA	Water	PrecSep-21	
160-60009-7	FB-02	Total/NA	Water	PrecSep-21	
160-60009-8	EB-02	Total/NA	Water	PrecSep-21	
MB 160-741695/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-741695/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-60009-6 DU	DUP-02	Total/NA	Water	PrecSep-21	

Prep Batch: 741696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-60009-4	JHC-MW-15009R	Total/NA	Water	PrecSep_0	
160-60009-5	JHC-MW-15011R	Total/NA	Water	PrecSep_0	
160-60009-6	DUP-02	Total/NA	Water	PrecSep_0	
160-60009-7	FB-02	Total/NA	Water	PrecSep_0	
160-60009-8	EB-02	Total/NA	Water	PrecSep_0	
MB 160-741696/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-741696/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-60009-6 DU	DUP-02	Total/NA	Water	PrecSep_0	

Tracer/Carrier Summary

Client: Consumers Energy
Project/Site: JH Campbell Pond A Wells

Job ID: 160-60009-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (30-110)	
160-60009-1	JHC-MW-15006	88.5	
160-60009-2	JHC-MW-15007R	86.3	
160-60009-3	JHC-MW-15008R	85.8	
160-60009-4	JHC-MW-15009R	84.7	
160-60009-5	JHC-MW-15011R	82.5	
160-60009-6	DUP-02	85.2	
160-60009-6 DU	DUP-02	80.1	
160-60009-7	FB-02	88.0	
160-60009-8	EB-02	88.3	
480-233499-A-20-B MS	Matrix Spike	88.8	
480-233499-B-20-A MSD	Matrix Spike Duplicate	89.3	
LCS 160-741517/2-A	Lab Control Sample	86.6	
LCS 160-741695/2-A	Lab Control Sample	89.6	
MB 160-741517/1-A	Method Blank	89.6	
MB 160-741695/1-A	Method Blank	89.1	

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (30-110)	Y (30-110)
160-60009-1	JHC-MW-15006	88.5	82.6
160-60009-2	JHC-MW-15007R	86.3	85.2
160-60009-3	JHC-MW-15008R	85.8	86.4
160-60009-4	JHC-MW-15009R	84.7	79.3
160-60009-5	JHC-MW-15011R	82.5	78.5
160-60009-6	DUP-02	85.2	75.1
160-60009-6 DU	DUP-02	80.1	74.4
160-60009-7	FB-02	88.0	75.5
160-60009-8	EB-02	88.3	83.0
480-233499-A-20-D MS	Matrix Spike	88.8	82.2
480-233499-B-20-B MSD	Matrix Spike Duplicate	89.3	84.1
LCS 160-741518/2-A	Lab Control Sample	86.6	81.5
LCS 160-741696/2-A	Lab Control Sample	89.6	80.7
MB 160-741518/1-A	Method Blank	89.6	84.1
MB 160-741696/1-A	Method Blank	89.1	82.6

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Emil Blaj
Consumers Energy
135 W Trail Street
Jackson, Michigan 49201

Generated 11/17/2025 2:58:43 PM

JOB DESCRIPTION

JH Campbell Supplemental Wells

JOB NUMBER

160-60008-1

Eurofins St. Louis

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 TestAmerica Project Manager.

Authorization



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Case Narrative

Client: Consumers Energy
Project: JH Campbell Supplemental Wells

Job ID: 160-60008-1

Job ID: 160-60008-1

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Job Narrative 160-60008-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition, all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method.

Eurofins Environment Testing attests to the validity of the laboratory data generated by Eurofins facilities reported herein. All analyses performed by Eurofins Environment Testing facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins Environment Testing's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Calculations are performed before rounding to avoid round-off errors in calculated results.

Proper preservation was noted for the methods performed on these samples, unless otherwise detailed below.

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.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

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

Receipt

The samples were received on 10/17/2025 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved. The temperature of the cooler at receipt time was 22.6°C.

Receipt Exceptions

The following samples were received at the laboratory without a sample collection time documented on the chain of custody: DUP-07 (160-60008-6), DUP-02 (160-60009-6), DUP-01 (160-60010-7) and DUP-03 (160-60012-8). The collection time used was 12:00am.

Method 903.0 - Radium-226 (GFPC)

Samples MW-14S (160-60008-1), PZ-23S (160-60008-2), PZ-40S (160-60008-3), TW-19-05 (160-60008-4), TW-19-06A (160-60008-5) and DUP-07 (160-60008-6) were analyzed for Radium-226 (GFPC). The samples were prepared on 10/21/2025 and analyzed on 11/16/2025.

Method 904.0 - Radium-228 (GFPC)

Samples MW-14S (160-60008-1), PZ-23S (160-60008-2), PZ-40S (160-60008-3), TW-19-05 (160-60008-4), TW-19-06A (160-60008-5) and DUP-07 (160-60008-6) were analyzed for Radium-228 (GFPC). The samples were prepared on 10/21/2025 and analyzed on 11/16/2025.

Method Ra226_Ra228 - Combined Radium-226 and Radium-228

Samples MW-14S (160-60008-1), PZ-23S (160-60008-2), PZ-40S (160-60008-3), TW-19-05 (160-60008-4), TW-19-06A (160-60008-5) and DUP-07 (160-60008-6) were analyzed for Combined Radium-226 and Radium-228. The samples were analyzed on 11/17/2025.

Eurofins St. Louis

Chain of Custody Record

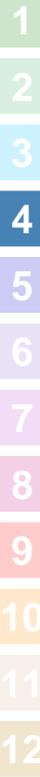
Client Information		Lab PM: Korrinizer, Micha L		Carrier Tracking No(s): 160-11904-5895.1	
Client Contact: Emil Blaj		E-Mail: Micha.Korrinizer@st.eurofins.com		State of Origin:	
Company: Consumers Energy		PWSID:		Job #:	
Address: 135 W Trail Street		Due Date Requested:		Preservation Codes: D - HNO3 N - None	
City: Jackson		TAT Requested (days): 22 BD		Other:	
State, Zip: MI, 49201		Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Phone: 517-788-5888		PO #:			
Email: emil.blaj@cmsenergy.com		PR #25100953 / PO4400131557			
Project Name: JH Campbell Supplemental Wells		WO #:			
Site:		25-0773			
		25-0773			
		SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, B=BIOTISSUE, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0 - Radium 226 (GFC)	904.0 - Radium 228 (GFC)	Ra226/Ra228 GFC - Combined Ra-226/Ra-228 calculation	Total Number of Containers	Special Instructions/Note:
MW-14S	10/7/25	1920	Water	Water	X	X	X	X		2	
PZ-23S	10/8/25	1114	Water	Water	X	X	X	X		2	
PZ-40S	10/7/25	1555	Water	Water	X	X	X	X		2	
TW-19-05	10/8/25	0908	Water	Water	X	X	X	X		2	
TW-19-06A	10/8/25	1007	Water	Water	X	X	X	X		2	
DUP-07	10/7/25	-	Water	Water	X	X	X	X		2	



160-60008 Chain of Custody

Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological	
Deliverable Requested: I, II, III, IV, Other (specify) _____ EquiS EDD for TRC _____	
Empty Kit Relinquished by: _____ Relinquished by: _____ Relinquished by: _____ Relinquished by: _____	Date/Time: 10/15/25 1430 Date/Time: _____ Date/Time: _____ Date/Time: _____
Method of Shipment: _____ Received by: UPS Received by: M. Pinette Received by: Meadow Pinette Date/Time: OCT 17 2025 1035 Date/Time: _____ Date/Time: _____	
Cooler Temperature(s) °C and Other Remarks: _____	



Login Sample Receipt Checklist

Client: Consumers Energy

Job Number: 160-60008-1

Login Number: 60008

List Source: Eurofins St. Louis

List Number: 1

Creator: Pinette, Meadow L

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?	False	Samplers name is not on the COC
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.	False	No time on COC or sample container for sample 6
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Consumers Energy
Project/Site: JH Campbell Supplemental Wells

Job ID: 160-60008-1

Qualifiers

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 Summary

Client: Consumers Energy
Project/Site: JH Campbell Supplemental Wells

Job ID: 160-60008-1

Method	Method Description	Protocol	Laboratory
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
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



Sample Summary

Client: Consumers Energy
Project/Site: JH Campbell Supplemental Wells

Job ID: 160-60008-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
160-60008-1	MW-14S	Water	10/07/25 19:20	10/17/25 10:35	Michigan
160-60008-2	PZ-23S	Water	10/08/25 11:14	10/17/25 10:35	Michigan
160-60008-3	PZ-40S	Water	10/07/25 15:55	10/17/25 10:35	Michigan
160-60008-4	TW-19-05	Water	10/08/25 09:08	10/17/25 10:35	Michigan
160-60008-5	TW-19-06A	Water	10/08/25 10:07	10/17/25 10:35	Michigan
160-60008-6	DUP-07	Water	10/07/25 00:00	10/17/25 10:35	Michigan

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

Client Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Supplemental Wells

Job ID: 160-60008-1

Client Sample ID: MW-14S

Lab Sample ID: 160-60008-1

Date Collected: 10/07/25 19:20

Matrix: Water

Date Received: 10/17/25 10:35

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	0.0437	U	0.246	0.246	1.00	0.467	pCi/L	10/21/25 08:00	11/16/25 15:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.4		30 - 110					10/21/25 08:00	11/16/25 15:42	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	0.365	U	0.375	0.377	1.00	0.606	pCi/L	10/21/25 08:03	11/16/25 10:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.4		30 - 110					10/21/25 08:03	11/16/25 10:56	1
Y Carrier	79.6		30 - 110					10/21/25 08:03	11/16/25 10:56	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.409	U	0.448	0.450	5.00	0.606	pCi/L		11/17/25 13:44	1

Client Sample ID: PZ-23S

Lab Sample ID: 160-60008-2

Date Collected: 10/08/25 11:14

Matrix: Water

Date Received: 10/17/25 10:35

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	0.0960	U	0.181	0.181	1.00	0.322	pCi/L	10/21/25 08:00	11/16/25 15:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.3		30 - 110					10/21/25 08:00	11/16/25 15:42	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	0.230	U	0.299	0.300	1.00	0.499	pCi/L	10/21/25 08:03	11/16/25 10:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.3		30 - 110					10/21/25 08:03	11/16/25 10:57	1
Y Carrier	83.0		30 - 110					10/21/25 08:03	11/16/25 10:57	1

Client Sample Results

Client: Consumers Energy
 Project/Site: JH Campbell Supplemental Wells

Job ID: 160-60008-1

Client Sample ID: PZ-23S

Date Collected: 10/08/25 11:14

Date Received: 10/17/25 10:35

Lab Sample ID: 160-60008-2

Matrix: Water

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.326	U	0.350	0.350	5.00	0.499	pCi/L		11/17/25 13:44	1

Client Sample ID: PZ-40S

Date Collected: 10/07/25 15:55

Date Received: 10/17/25 10:35

Lab Sample ID: 160-60008-3

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	-0.104	U	0.191	0.191	1.00	0.436	pCi/L	10/21/25 08:00	11/16/25 15:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.3		30 - 110					10/21/25 08:00	11/16/25 15:42	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	0.442	U	0.363	0.365	1.00	0.563	pCi/L	10/21/25 08:03	11/16/25 10:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.3		30 - 110					10/21/25 08:03	11/16/25 10:57	1
Y Carrier	83.0		30 - 110					10/21/25 08:03	11/16/25 10:57	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.339	U	0.410	0.412	5.00	0.563	pCi/L		11/17/25 13:44	1

Client Sample ID: TW-19-05

Date Collected: 10/08/25 09:08

Date Received: 10/17/25 10:35

Lab Sample ID: 160-60008-4

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	0.00232	U	0.169	0.169	1.00	0.346	pCi/L	10/21/25 08:00	11/16/25 15:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.5		30 - 110					10/21/25 08:00	11/16/25 15:42	1

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Client Sample Results

Client: Consumers Energy
 Project/Site: JH Campbell Supplemental Wells

Job ID: 160-60008-1

Client Sample ID: TW-19-05

Lab Sample ID: 160-60008-4

Date Collected: 10/08/25 09:08

Matrix: Water

Date Received: 10/17/25 10:35

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	0.943		0.431	0.440	1.00	0.583	pCi/L	10/21/25 08:03	11/16/25 10:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.5		30 - 110					10/21/25 08:03	11/16/25 10:57	1
Y Carrier	80.7		30 - 110					10/21/25 08:03	11/16/25 10:57	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.945		0.463	0.471	5.00	0.583	pCi/L		11/17/25 13:44	1

Client Sample ID: TW-19-06A

Lab Sample ID: 160-60008-5

Date Collected: 10/08/25 10:07

Matrix: Water

Date Received: 10/17/25 10:35

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	-0.0682	U	0.162	0.162	1.00	0.361	pCi/L	10/21/25 08:00	11/16/25 15:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.8		30 - 110					10/21/25 08:00	11/16/25 15:42	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	0.261	U	0.297	0.298	1.00	0.486	pCi/L	10/21/25 08:03	11/16/25 10:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.8		30 - 110					10/21/25 08:03	11/16/25 10:57	1
Y Carrier	82.2		30 - 110					10/21/25 08:03	11/16/25 10:57	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.193	U	0.338	0.339	5.00	0.486	pCi/L		11/17/25 13:44	1

Client Sample Results

Client: Consumers Energy
 Project/Site: JH Campbell Supplemental Wells

Job ID: 160-60008-1

Client Sample ID: DUP-07
Date Collected: 10/07/25 00:00
Date Received: 10/17/25 10:35

Lab Sample ID: 160-60008-6
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	0.134	U	0.272	0.272	1.00	0.478	pCi/L	10/21/25 08:00	11/16/25 15:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.2		30 - 110					10/21/25 08:00	11/16/25 15:42	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	0.339	U	0.379	0.381	1.00	0.620	pCi/L	10/21/25 08:03	11/16/25 10:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.2		30 - 110					10/21/25 08:03	11/16/25 10:57	1
Y Carrier	75.1		30 - 110					10/21/25 08:03	11/16/25 10:57	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.473	U	0.467	0.468	5.00	0.620	pCi/L		11/17/25 13:44	1

QC Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Supplemental Wells

Job ID: 160-60008-1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-741517/1-A
Matrix: Water
Analysis Batch: 745441

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 741517

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.1663	U	0.232	0.233	1.00	0.393	pCi/L	10/21/25 08:00	11/16/25 13:48	1
Carrier	MB		Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	%Yield	Qualifier	30 - 110					10/21/25 08:00	11/16/25 13:48	1
	89.6									

Lab Sample ID: LCS 160-741517/2-A
Matrix: Water
Analysis Batch: 745441

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 741517

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	9.57	9.553		1.29	1.00	0.346	pCi/L	100	75 - 125
Carrier	LCS	LCS	Limits						
Ba Carrier	%Yield	Qualifier	30 - 110						
	86.6								

Lab Sample ID: 480-233499-A-20-B MS
Matrix: Water
Analysis Batch: 745441

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 741517

Analyte	Sample	Sample	Spike Added	MS	MS	Total	RL	MDC	Unit	%Rec	%Rec Limits
	Result	Qual		Result	Qual	Uncert. (2σ+/-)					
Radium-226	0.354	U	9.53	9.170		1.25	1.00	0.358	pCi/L	93	60 - 140
Carrier	MS	MS	Limits								
Ba Carrier	%Yield	Qualifier	30 - 110								
	88.8										

Lab Sample ID: 480-233499-B-20-A MSD
Matrix: Water
Analysis Batch: 745441

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 741517

Analyte	Sample	Sample	Spike Added	MSD	MSD	Total	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
	Result	Qual		Result	Qual	Uncert. (2σ+/-)							
Radium-226	0.354	U	9.55	8.988		1.24	1.00	0.444	pCi/L	90	60 - 140	0.07	1
Carrier	MSD	MSD	Limits										
Ba Carrier	%Yield	Qualifier	30 - 110										
	89.3												

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-741518/1-A
Matrix: Water
Analysis Batch: 745440

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 741518

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.4175	U	0.340	0.342	1.00	0.529	pCi/L	10/21/25 08:03	11/16/25 10:55	1

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QC Sample Results

Client: Consumers Energy
Project/Site: JH Campbell Supplemental Wells

Job ID: 160-60008-1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Yield	Qualifier				
Ba Carrier	89.6		30 - 110	10/21/25 08:03	11/16/25 10:55	1
Y Carrier	84.1		30 - 110	10/21/25 08:03	11/16/25 10:55	1

Lab Sample ID: LCS 160-741518/2-A
Matrix: Water
Analysis Batch: 745440

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 741518

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits

Carrier	LCS LCS		Limits
	%Yield	Qualifier	
Ba Carrier	86.6		30 - 110
Y Carrier	81.5		30 - 110

Lab Sample ID: 480-233499-A-20-D MS
Matrix: Water
Analysis Batch: 745440

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 741518

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits

Carrier	MS MS		Limits
	%Yield	Qualifier	
Ba Carrier	88.8		30 - 110
Y Carrier	82.2		30 - 110

Lab Sample ID: 480-233499-B-20-B MSD
Matrix: Water
Analysis Batch: 745440

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 741518

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit

Carrier	MSD MSD		Limits
	%Yield	Qualifier	
Ba Carrier	89.3		30 - 110
Y Carrier	84.1		30 - 110

QC Association Summary

Client: Consumers Energy
 Project/Site: JH Campbell Supplemental Wells

Job ID: 160-60008-1

Rad

Prep Batch: 741517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-60008-1	MW-14S	Total/NA	Water	PrecSep-21	
160-60008-2	PZ-23S	Total/NA	Water	PrecSep-21	
160-60008-3	PZ-40S	Total/NA	Water	PrecSep-21	
160-60008-4	TW-19-05	Total/NA	Water	PrecSep-21	
160-60008-5	TW-19-06A	Total/NA	Water	PrecSep-21	
160-60008-6	DUP-07	Total/NA	Water	PrecSep-21	
MB 160-741517/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-741517/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
480-233499-A-20-B MS	Matrix Spike	Total/NA	Water	PrecSep-21	
480-233499-B-20-A MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 741518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-60008-1	MW-14S	Total/NA	Water	PrecSep_0	
160-60008-2	PZ-23S	Total/NA	Water	PrecSep_0	
160-60008-3	PZ-40S	Total/NA	Water	PrecSep_0	
160-60008-4	TW-19-05	Total/NA	Water	PrecSep_0	
160-60008-5	TW-19-06A	Total/NA	Water	PrecSep_0	
160-60008-6	DUP-07	Total/NA	Water	PrecSep_0	
MB 160-741518/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-741518/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
480-233499-A-20-D MS	Matrix Spike	Total/NA	Water	PrecSep_0	
480-233499-B-20-B MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep_0	

Tracer/Carrier Summary

Client: Consumers Energy
 Project/Site: JH Campbell Supplemental Wells

Job ID: 160-60008-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	
160-60008-1	MW-14S	84.4	
160-60008-2	PZ-23S	89.3	
160-60008-3	PZ-40S	83.3	
160-60008-4	TW-19-05	85.5	
160-60008-5	TW-19-06A	91.8	
160-60008-6	DUP-07	84.2	
480-233499-A-20-B MS	Matrix Spike	88.8	
480-233499-B-20-A MSD	Matrix Spike Duplicate	89.3	
LCS 160-741517/2-A	Lab Control Sample	86.6	
MB 160-741517/1-A	Method Blank	89.6	
Tracer/Carrier Legend			
Ba = Ba Carrier			

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
160-60008-1	MW-14S	84.4	79.6
160-60008-2	PZ-23S	89.3	83.0
160-60008-3	PZ-40S	83.3	83.0
160-60008-4	TW-19-05	85.5	80.7
160-60008-5	TW-19-06A	91.8	82.2
160-60008-6	DUP-07	84.2	75.1
480-233499-A-20-D MS	Matrix Spike	88.8	82.2
480-233499-B-20-B MSD	Matrix Spike Duplicate	89.3	84.1
LCS 160-741518/2-A	Lab Control Sample	86.6	81.5
MB 160-741518/1-A	Method Blank	89.6	84.1
Tracer/Carrier Legend			
Ba = Ba Carrier			
Y = Y Carrier			

Appendix B Field Data

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-MW-15023 Date 4.14.25 Control Number 25-0223-01,-07(DUP)
 Location JHC Background Wells Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailer
 Depth to Water Tape: Solinist S/N: LS030624
 QC SAMPLE: MS/MSD DUP-01 Sonde ID: 15H 19M 20M 21G 22I

Depth-to-water T/PVC (ft) 19.35 Depth-To-Bottom T/PVC (ft) 27.69 Completed by LMO

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1355	started pump						200	19.36	
1400	6.23	11.0	174.1	17.5	1.86	+179.9	200	19.36	3.55
1405	6.10	10.8	157.7	9.5	1.05	+185.2	200	19.36	3.80
1410	6.13	10.9	161.9	7.6	0.84	+186.3	200	19.36	3.33
1415	6.16	10.9	165.6	7.3	0.81	+186.5	200	19.36	3.66
1420	6.16	10.9	167.3	7.5	0.83	+186.6	200	19.36	3.41
1425	6.19	10.8	172.9	7.0	0.77	+185.1	200	19.36	3.27
1430	6.22	10.9	176.7	6.6	0.73	+183.9	200	19.36	2.91
1435	6.26	10.9	179.3	6.2	0.68	+181.9	200	19.36	2.67
1440	6.27	10.9	184.9	5.8	0.63	+180.1	200	19.36	2.34
1445	6.31	11.0	185.4	5.6	0.61	+178.7	200	19.36	2.30
1450	6.25	10.9	186.7	5.2	0.58	+181.6	200	19.36	2.14
1455	6.28	11.0	189.7	5.0	0.55	+179.2	200	19.36	2.11
1500	6.28	11.0	191.3	4.9	0.54	+178.2	200	19.36	2.10
1505	6.29	11.0	191.4	4.8	0.52	+177.7	200	19.36	2.07

Total Pump Time (min): ^{LMO 4.14.25} ~~70~~ 71 Total Purge Volume (gal): ~ 3.75 Review Date: 04-22-25

Weather: 55°F Review By: [Signature]

Comments: collected sample @ 1506 End @ 1550

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
2	125 mL	Plastic	B	N	4	1-L	Plastic	B	N
2	125 mL	Plastic	A	N					
2	250 mL	Plastic	A	N					
4	60 mL	VOA	A	N					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-mw-15024 Date 4-14-25 Control Number 25-0223-02
 Location JHC Background wells Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: 50 UNST S/N: LS030624
 QC SAMPLE: MS/MSD DUP Sonde ID: 15H 19M 20M 21G 22J

Depth-to-water T/PVC (ft) 15.25 Depth-To-Bottom T/PVC (ft) 19.92 Completed by umo

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	<0.33	+/- 10%

Stabilization parameters for the last three readings

1615	started pump						200	15.26	
1620	7.90	9.5	295.1	13.7	1.57	+121.9	200	15.26	8.07
1625	7.90	9.5	293.8	15.1	1.73	+121.7	200	15.26	6.79
1630	7.88	9.5	293.3	19.3	2.20	+123.2	200	15.26	4.73
1635	7.91	9.5	295.4	17.7	2.02	+123.6	200	15.26	2.99
1640	7.92	9.4	296.0	16.0	1.84	+124.1	200	15.26	2.62
1645	7.92	9.3	295.9	16.9	1.92	+124.8	200	15.26	2.26
1650	7.92	9.3	295.0	18.5	2.11	+125.9	200	15.26	2.05
1655	7.93	9.4	295.6	17.5	2.01	+126.7	200	15.26	2.00
1700	7.91	9.3	293.6	20.8	2.45	+128.3	200	15.26	2.02
1705	7.91	9.3	294.6	20.4	2.34	+129.4	200	15.26	1.97
1710	7.91	9.2	293.1	20.8	2.34	+130.6	200	15.26	1.91
1711	collected sample								
1725	End								

Total Pump Time (min): 56 Total Purge Volume (gal): ~30 Review Date: 04-22-25

Weather: 55°F Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Preservative Type	Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125mL	B	plastic	N	2	1-L	plastic	B	N
1	125mL	A	plastic	N					
1	250 mL	A	plastic	N					
2	100 mL	A	VOA	N					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-mw-15026 Date 4.14.25 Control Number 25-0223-04
 Location JHC Background Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: solinst S/N: LS030024

QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20M 21G 22J

Depth-to-water T/PVC (ft) 16.99 Depth-To-Bottom T/PVC (ft) 21.01 Completed by umo

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1845	started pump						200	17.01	
1850	5.88	8.8	36.0	75.5	8.79	+187.9	200	17.01	7.40
1855	5.86	8.8	39.3	72.1	8.37	+201.7	200	17.01	5.79
1900	5.90	8.8	42.1	69.4	8.06	+207.4	200	17.01	5.59
1905	5.90	8.8	42.9	67.6	7.84	+211.1	200	17.01	3.59
1910	5.91	8.8	43.4	67.0	7.80	+213.8	200	17.01	3.33
1915	5.92	8.7	44.3	66.3	7.72	+216.3	200	17.01	3.22
1920	5.92	8.7	43.3	67.0	7.81	+216.8	200	17.01	3.23
1921	collected sample								
1935	End								

Total Pump Time (min): 36 Total Purge Volume (gal): ~2.0 Review Date: 04-22-25

Weather: SS °F Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____								
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N	
1	125mL	Plastic	B	N	2	1-L	Plastic	B	N	
1	125mL	Plastic	A	N						
1	250mL	Plastic	A	N						
2	60mL	VOR	A	N						

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-MW-15027 Date 4.15.25 Control Number 25-0223-05
 Location JHC Background Wells Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: Solinst S/N: LS 030624

QC SAMPLE: MS/MSD DUP Sonde ID: 15H 19M 20M 21G 22J

Depth-to-water T/PVC (ft) 17.75 Depth-To-Bottom T/PVC (ft) 21.01 Completed by LMO

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

0930	Started pump						220	17.77	
0935	7.87	8.5	167.0	86.5	10.13	+188.7	220	17.78	24.54
0940	7.92	8.2	185.4	82.5	9.17	+185.8	220	17.78	13.90
0945	7.96	8.2	187.4	79.0	9.30	+183.7 LMO 4.15.25	220	17.78	9.85
0950	7.97	8.3	186.9	78.0	9.17	+182.5	220	17.78	7.31
0955	7.99	8.3	186.7	76.2	8.94	+181.2	220	17.78	6.90
1000	8.00	8.4	186.4	75.8	8.94	+180.5	220	17.78	5.09
1005	8.01	8.4	186.8	74.8	8.74	+179.7	220	17.78	3.68
1010	8.02	8.5	179.3	75.1	8.77	+179.3	220	17.78	3.50
1015	8.03	8.5	179.2	74.2	8.75 LMO 4.14.25	+179.2	220	17.78	2.70
1020	8.02	8.4	179.1	74.7	8.76	+179.2	220	17.78	2.40
1025	8.04	8.5	187.1	74.2	8.68	+178.8	220	17.78	2.37
1030	8.04	8.5	187.1	74.2	8.72	+178.5	220	17.78	2.36
1035	8.04	8.5	178.4	73.8	8.65	+178.4	220	17.78	2.16
1040	8.05	8.5	178.1	73.5	8.58	+178.2	220	17.78	2.14

Total Pump Time (min): Total Purge Volume (gal): ~4.58 LMO 4.15.25 Review Date: 04-22-25

Weather: 38°F rain Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125mL	Plastic	B	N	2	1-L	Plastic	B	N
1	125mL	Plastic	A	N					
1	250mL	Plastic	A	N					
2	60 mL	VGA	A	N					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-MW-15028 Date 4.15.25 Control Number 25-0223-06
 Location JHC Background wells Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailer
 Depth to Water Tape: 501inst S/N: LS030624

QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20M 21G 22I

Depth-to-water T/PVC (ft) 17.70 Depth-To-Bottom T/PVC (ft) 20.80 Completed by umo

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1205	Started pump						220	17.71		
1210	8.55	8.7	120.3	76.3	8.80	112.7	220	17.71	1.67	
1215	8.54	8.7	121.4	73.0	8.48	117.5	220	17.71	1.78	
1220	8.59	8.6	119.7	73.0	8.49	120.1	220	17.71	1.68	
1225	8.60	8.7	118.7	73.1	8.50	127.4	220	17.71	1.91	
1230	8.61	8.6	119.1	73.1	8.52	130.3	220	17.71	1.81	
1235	8.63	8.7	119.5	73.4	8.55	138.6	220	17.71	2.20	
1240	8.60	8.5	118.9	72.8	8.52	142.6	220	17.71	2.27	
1245	8.60	8.4	118.5	72.6	8.50	143.7	220	17.71	2.22	
1250	8.61	8.5	118.0	72.4	8.48	145.9	220	17.71	2.20	
1251	collected sample									
1307	End									

Total Pump Time (min): 46 Total Purge Volume (gal): ~2.75 Review Date: 04-22-25

Weather: 38°F cloudy Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125ml	Plastic	B	N	2	1-L	Plastic	B	N
1	125ml	Plastic	A	N					
1	250ml	Plastic	A	N					
2	60ml	VOA	A	N					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-MW-15006 Date 4-14-25 Control Number 25-0224-01
 Location JHC Pond A Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailer
 Depth to Water Tape: GeoTech S/N: 7371
 QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20M 21G 22J

Depth-to-water T/PVC (ft) 35.90 Depth-To-Bottom T/PVC (ft) 37.93 Completed by CIE

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	<0.33	+/- 10%

Stabilization parameters for the last three readings

1705	started pump						500	*	
1710	8.11	13.6	641	2.9	0.30	+39.0	500	*	1.61
1715	8.13	13.7	643	2.5	0.26	+35.0	500	*	1.49
1720	8.13	13.6	643	2.4	0.25	+22.8	500	*	1.30
1725	8.13	13.6	643	2.4	0.25	+17.4	500	*	1.33
1730	8.13	13.5	644	2.5	0.26	+16.0	500	*	1.26
1735	8.13	13.5	643	2.5	0.26	+15.7	500	*	1.25
1736	collected sample								
1743	end							35.90	

Total Pump Time (min): 31 Total Purge Volume (gal): 24.0 Review Date: 04-22-25

Weather: 55°F, partly cloudy, windy Review By: [Signature]

Comments: * water level below pump - can't measure.

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125mL	HDPE	B	N	2	1-L	HDPE	B	N
1	↓	↓	A	↓					
1	250mL	↓	A	↓					
2	60mL	VOA	A	↓					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-MW-15007R Date 4.14.25 Control Number 25-0224-02-^{ms}09, -^{ms}10
 Location JHC Pond A Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: GeoTech S/N: 7371

QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20M 21G 22J

Depth-to-water T/PVC (ft) 36.98 Depth-To-Bottom T/PVC (ft) 43.05 Completed by CIE

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	<0.33	+/- 10%

Stabilization parameters for the last three readings

1535	started pump						465	36.98	
1540	7.99	13.5	635	3.0	0.31	+130.8	465	36.98	6.51
1545	8.01	13.6	633	1.3	0.13	+96.7	465	36.98	3.21
1550	8.03	13.5	633	0.8	0.08	+73.4	465	36.98	2.54
1555	8.01	13.6	630	1.1	0.12	+36.4	465	36.98	1.94
1600	7.99	13.6	620	1.7	0.18	+16.4	465	36.98	1.78
1605	8.01	13.5	629	1.5	0.16	+10.7	465	36.98	1.73
1610	8.04	13.6	628	1.5	0.14	-7.7	465	36.98	1.42
1615	8.03	13.6	628	1.5	0.14	-8.8	465	36.98	1.42
1620	8.02	13.6	627	1.7	0.17	-9.6	465	36.98	1.38
1625	8.01	13.6	626	2.3	0.24	-13.9	465	36.98	1.36
1630	8.07	13.6	626	1.7	0.18	-21.0	465	36.98	1.29
1635	8.02	13.6	625	1.7	0.17	-21.2	465	36.98	1.29
1640	8.01	13.5	625	1.8	0.19	-21.1	465	36.98	1.30
1641	collected sample			end @ 1651					

Total Pump Time (min): 61 Total Purge Volume (gal): ~8.25 Review Date: 04-22-25

Weather: 60°F, sunny, windy Review By: [Signature]

Comments: collected ms/msd

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
3	125mL	HDPE	B	N	2	12liter	HDPE	B	N
3	↓	↓	A	↓					
1	250mL	↓	A	↓					
2	60mL	VOA	A	↓					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-MW-15008R Date 4-14-25 Control Number 15-0224-03
 Location JHC Pond A Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: Eicotech S/N: 7371

QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20M 21G 22J

Depth-to-water T/PVC (ft) 43.95 Depth-To-Bottom T/PVC (ft) 47.61 Completed by CIE

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	<0.33	+/- 10%

Stabilization parameters for the last three readings

1430	started pump						470			
1435	7.19	13.7	687	5.8	0.60	+159.2	470	43.97	6.57	
1440	7.18	13.8	680	7.7	0.80	+140.9	470	43.97	3.30	
1445	7.18	13.7	680	8.0	0.83	+137.4	470	43.97	2.55	
1450	7.18	13.8	677	8.5	0.88	+131.2	470	43.97	2.17	
1455	7.18	13.8	676	8.8	0.91	+128.3	470	43.97	1.90	
1500	7.18	13.7	674	9.5	0.98	+125.0	470	43.97	1.80	
1505	7.17	13.8	670	10.5	1.09	+123.4	470	43.97	1.66	
1510	7.18	13.8	669	10.7	1.10	+121.3	470	43.97	1.45	
1515	7.18	13.9	671	10.3	1.07	+120.1	470	43.97	1.41	
1516	collected sample									
1527	end									

Total Pump Time (min): 46 Total Purge Volume (gal): ~5.75 Review Date: 04-22-25

Weather: 60°F, sunny, windy Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125mL	HDPE	B	N	2	1-L	HDPE	B	N
1	↓	↓	A	↓					
1	250mL	↓	A	↓					
2	60mL	VOA	A	↓					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-mw-15009R Date 4.14.25 Control Number 25-0224-04, -06 DUP
 Location JHC Ponda Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailer
 Depth to Water Tape: Geotech S/N: 7371
 QC SAMPLE: MS/MSD DUP-02 Sonde ID: 15H 19M 20M 21G 22J

Depth-to-water T/PVC (ft) 44.13 Depth-To-Bottom T/PVC (ft) 50.80 Completed by CIE

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	<0.33	+/- 10%

Stabilization parameters for the last three readings

1315	started pump						470	44.46	
1320	6.79	13.4	492.5	4.4	0.46	+173.3	470	44.46	4.36
1325	6.75	13.5	491.6	4.5	0.47	+166.9	470	44.46	2.86
1330	6.75	13.4	489.2	4.3	0.45	+159.8	470	44.46	2.11
1335	6.76	13.4	488.6	3.4	0.35	+155.8	470	44.46	1.68
1340	6.76	13.4	488.5	2.7	0.29	+147.6	470	44.46	1.34
1345	6.76	13.5	487.7	2.4	0.25	+144.1	470	44.46	1.31
1350	6.77	13.4	488.1	2.3	0.24	+138.2	470	44.86	1.20
1355	6.77	13.4	487.5	2.1	0.22	+135.8	470	44.86	1.26
1400	6.77	13.4	487.1	2.1	0.22	+134.4	470	44.86	1.22
1401	collected sample								
1417	end								

Total Pump Time (min): 51 Total Purge Volume (gal): ~6.5 Review Date: 04-22-25

Weather: 60°F, sunny, windy Review By: [Signature]

Comments: collected Field DUP

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
2	125mL	HDPE	B	N	4	1-L	HDPE	B	N
2	↓	↓	A	↓					
2	250mL	↓	A	↓					
4	60mL	VDA	A	↓					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JAC-MW-15011R Date 4.14.25 Control Number 25-0224-05
 Location JAC POND A Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: Geotech S/N: 1371
 QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20M 21G 22J

Depth-to-water T/PVC (ft) 38.14 Depth-To-Bottom T/PVC (ft) 45.17 Completed by CIE

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	<0.33	+/- 10%

Stabilization parameters for the last three readings

1750	started pump						470	38.16	
1755	6.92	13.2	512	0.5	0.05	+44.0	470	38.16	4.74
1800	6.89	13.0	510	0.1	0.01	+53.0	470	38.16	3.04
1805	6.84	12.9	508	0.1	0.01	+57.4	470	38.16	2.55
1810	6.81	13.0	502	0.1	0.01	+61.1	470	38.16	1.88
1815	6.80	13.0	501	0.1	0.01	+61.6	470	38.16	1.69
1816	collected sample								
1824	end								

Total Pump Time (min): 26 Total Purge Volume (gal): 13.25 Review Date: 04-22-25

Weather: 55°F, partly cloudy; windy Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125mL	HDPE	B	N	2	1-L	HDPE	B	N
1	↓	↓	A	↓					
1	250mL	↓	A	↓					
2	40mL	VOA	A	↓					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID MW-145 Date 4.15.25 Control Number 25-0226-01
 Location supplemental Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailer
 Depth to Water Tape: 5011nsr S/N: 25030424

QC SAMPLE: MS/MSD DUP Sonde ID: 15H 19M 20M 21G 22J

Depth-to-water T/PVC (ft) 11.68 Depth-To-Bottom T/PVC (ft) 13.28 Completed by umo

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	ml/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1750	started pump								
1755	6.60	7.8	98.8	10.2	1.22	92.0	220	11.70	1.86
1800	6.54	7.9	86.5	28.6	3.59	101.6	220	11.71	2.00
1801	stopped pump - cleaned sonde								
1805	started pump								
1810	6.56	7.9	86.5	43.0	5.00	121.6	220	11.71	2.75
1815	6.49	7.8	91.3	37.7	2.60	116.1	220	11.71	1.95
1820	6.50	7.8	90.6	21.1	2.52	115.0	220	11.71	1.44
1825	6.50	7.8	89.0	23.5	2.79	115.3	220	11.71	1.43
1830	6.51	7.7	88.8	23.6	2.82	115.4	220	11.71	1.41
1835	6.51	7.6	87.8	24.9	2.97	116.3	220	11.71	1.36
1840	6.51	7.6	87.7	24.9	2.98	116.5	220	11.71	1.34
1841	collected sample								
1905	End								

Total Pump Time (min): 36 Total Purge Volume (gal): ~2.0 Review Date: 04-22-25

Weather: 38°F cloudy Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125ml	plastic	B	Y	2	60ml	VOA	A	N
1	125ml	plastic	A	N	2	1-L	plastic	B	N
1	125ml	plastic	A	N					
1	250ml	plastic	A	N					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID PZ-235 Date 4.15.25 Control Number 25-0226-02
 Location 5HC Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailer
 Depth to Water Tape: Solinst 101 P7 S/N: LS030623

QC SAMPLE: MS/MSD DUP Sonde ID: 15H 19M 20M 21G 22J

Depth-to-water T/PVC (ft) 15.31 Depth-To-Bottom T/PVC (ft) 18.26 Completed by KDR

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1722	Started pump						285	15.41	
1725	7.25	9.6	46.2	82.1	9.35	63.1	285	15.41	2.70
1730	7.14	9.4	42.2	83.3	9.53	120.9	285	15.41	2.41
1735	7.14	9.3	43.1	83.1	9.55	145.4	285	15.41	2.31
1740	7.13	9.3	43.9	82.6	9.48	160.9	285	15.41	2.30
1745	7.14	9.3	44.5	82.2	9.43	172.2	285	15.41	2.25
1750	7.14	9.3	44.9	81.9	9.40	178.1	285	15.41	2.27
1755	7.14	9.3	45.0	81.6	9.38	181.8	285	15.41	2.23
1756	Collected sample								
1813	End sample collection								

Total Pump Time (min): 34 Total Purge Volume (gal): ~2.5 Review Date: 04-22-25

Weather: Sunny, light wind 40°F Review By: T

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125 mL	HDPE	B	Y	2	60 mL	VOA	A	N
1	125 mL	↓	B	N	2	1L	HDPE	B	N
1	125 mL		A	N					
1	250 mL	↓	A	N					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID PZ-245 Date 4.15.25 Control Number 25-0226-03
 Location JHC Well Material: PVC SS Iron Galv. Steel

Purge Method: Peristaltic Submersible Bladder Fultz Bailor

Depth to Water Tape: Solinst 101 P7 S/N: LS030623

QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20M 21G 22J

Depth-to-water T/PVC (ft) 8.30 Depth-To-Bottom T/PVC (ft) 11.07 Completed by KDP

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	ml/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1432	Started pump						240	8.38	
1436	5.73	7.6	35.1	74.4	8.90	277.9	240	8.38	3.38
1441	5.62	7.2	39.9	68.6	8.27	303.4	240	8.38	3.75
1446	5.63	7.4	43.7	64.1	7.70	295.0	240	8.38	3.15
1451	5.65	7.5	47.6	59.0	7.07	277.5	240	8.38	2.80
1456	5.66	7.4	50.9	55.5	6.65	255.2	240	8.38	2.55
1501	5.69	7.3	52.1	54.1	6.652	241.0	240	8.38	2.59
1506	5.71	7.4	52.9	53.7	6.45	233.1	240	8.38	2.57
1511	5.73	7.6	53.3	53.6	6.40	225.7	240	8.38	2.54
1516	5.75	7.6	54.0	53.0	6.34	219.0	240	8.38	2.52
1521	5.76	7.4	54.4 52.5	52.5	6.31	217.5	240	8.38	2.49
1522	Collected sample								
1537	End sample collection								

Total Pump Time (min): 50 Total Purge Volume (gal): ~3.5 Review Date: 04-22-25

Weather: Sunny, light wind, 40°F Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125mL	HDPE	B	Y	2	60mL	VOA	A	N
1	125mL	↓	B	N	2	1L	HDPE	B	N
1	125mL	↓	A	N					
1	250mL	↓	A	N					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID PZ-405 Date 4.15.25 Control Number 25-0226-05-09
 Location JHC Well Material: PVC SS Iron Galv. Steel

Purge Method: Peristaltic Submersible Bladder Fultz Bailor

Depth to Water Tape: Solinst 101 P7 S/N: LS030623

QC SAMPLE: MS/MSD DUP 07 Sonde ID: 15H 19M 20M 21G 22J

Depth-to-water T/PVC (ft) 11.31 Depth-To-Bottom T/PVC (ft) 17.97 Completed by KDR

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1217	Started pump						252	11.36	
1220	5.41	7.9	35.5	57.8	6.78	283.0	252	11.36	4.54
1225	5.35	7.6	32.2	49.0	5.86	321.9	252	11.36	3.91
1230	5.34	7.6	31.9	47.3	5.66	333.7	252	11.36	3.60
1235	5.33	7.6	31.6	47.1	5.63	337.9	252	11.36	3.45
1240	5.33	7.5	31.4	41.8	4.99	341.8	252	11.36	2.91
1245	5.33	7.6	31.4	41.4	4.73	343.3	252	11.36	2.85
1250	5.31	7.6	31.4	39.8	4.77	344.7	252	11.36	2.80
1251	Collected sample								
1317	End sample collection								

Total Pump Time (min): 34 Total Purge Volume (gal): ~2.5 Review Date: 04-22-25

Weather: Cloudy, light wind, 40°F Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125mL	HDPE	B	Y	4	60mL	VOA	A	N
2	125mL	↓	B	N	4	1L	HDPE	B	N
2	125mL	↓	A	N					
2	250mL	↓	A	N					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID TW-19-05 Date 4.15.25 Control Number 25-0226-07
 Location Supplemental Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: Solinst S/N: LS030624

QC SAMPLE: MS/MSD DUP Sonde ID: 15H 19M 20M 21G 22J

Depth-to-water T/PVC (ft) 16.57 Depth-To-Bottom T/PVC (ft) 18.59 Completed by LMO

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stablization parameters for the last three readings

1440							220	16.58	
1445	7.46	8.8	111.4	78.8	9.12	+172.9	220	16.59	3.22
1450	7.03	8.4	170.9	57.2	6.69	+105.4	220	16.59	2.45
1455	7.04	8.4	202.0	51.0	5.98	+30.9	220	16.59	1.90
1500	7.09	8.3	245.6	44.9	5.24	+72.9	220	16.59	1.71
1505	7.14	8.4	265.0	42.0	4.92	+93.8	220	16.59	1.59
1510	7.17	8.4	273.6	41.0	4.80	+103.9	220	16.59	1.58
1515	7.20	8.4	282.5	39.6	4.64	+112.9	220	16.59	1.61
1520	7.22	8.4	288.5	38.5	4.52	+119.0	220	16.59	1.62
1525	7.24	8.4	294.0	37.7	4.41	+122.8	220	16.59	1.53
1530	7.24	8.4	296.4	37.3	4.37	+123.9	220	16.59	1.45
1535	7.25	8.4	298.9	36.9	4.32	+126.2	220	16.59	1.42
1536	collected sample								
1553	End								

Total Pump Time (min): 56 Total Purge Volume (gal): ~ 3.25 Review Date: 04-22-25

Weather: 38°F cloudy Review By: 

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125ml	Plastic	B	N	2	1-L	Plastic	B	N
1	125ml	Plastic	A	N					
1	250ml	Plastic	A	N					
2	60ml	VOR	N	N					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID TW-019-06A ~~FW-0276-08~~ Date 4.15.25 Control Number 25-0224-08, -10(MS), -11(MS)

Location Supplemental Well Material: PVC SS Iron Galv. Steel

Purge Method: Peristaltic Submersible Bladder Fultz Bailor

Depth to Water Tape: solinst S/N: LS030624

QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20M 21G 22J

Depth-to-water T/PVC (ft) 13.45 Depth-To-Bottom T/PVC (ft) 15.32 Completed by WMO

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1620	Started pump						220	13.47	
1625	7.15	8.2	148.3	71.3	8.38	+137.7	220	13.48	3.56
1630	7.09	8.2	144.0	69.2	8.14	+146.5	220	13.48	5.00
1635	7.09	8.2	143.6	68.7	8.10	+143.6	220	13.48	2.51
1640	7.09	8.2	142.8	68.2	8.04	+142.9	220	13.48	2.55
1645	7.09	8.2	143.1	68.3	8.05	+143.1	220	13.48	2.43
1650	7.10	8.1	143.4	68.1	8.03	+157.6	220	13.48	2.34
1655	7.10	8.2	143.4	68.1	8.02	+158.8	220	13.48	2.40
1700	7.10	8.2	143.5	67.9	9.97	+160.5	220	13.48	2.37
1701	collected sample								
1725	End								

Total Pump Time (min): 41 Total Purge Volume (gal): ~2.5 Review Date: 04-22-25

Weather: 38° cloudy Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____								
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N	
3	125ml	Plastic	B	N	2	1-L	Plastic	B	N	
3	125ml	Plastic	A	N						
1	250ml	Plastic	A	N						
2	60ml	VOA	A	N						

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
Monitoring Well Sampling Worksheet

Well ID JHC-MW-15023 Date 10.07.25 Control Number 25-0769-01
 Location JHC Background wells Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: Geotech S/N: 1009-22

QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 20.79 Depth-To-Bottom T/PVC (ft) 27.69 Completed by lmo

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1525	started pump						200	20.80	
1530	6.79	12.5	122.7	27.6	2.93	+141.9	200	20.81	9.57
1535	6.39	12.3	127.9	24.0	2.58	+159.8	200	20.81	6.00
1540	6.27	12.3	132.9	23.6	2.52	+170.6	200	20.81	4.69
1545	6.27	12.3	141.4	22.8	2.44	+175.0	200	20.81	3.59
1550	6.30	12.3	148.7	21.6	2.31	+179.2	200	20.81	2.80
1555	6.32	12.3	152.8	20.1	2.15	+152.0	200	20.81	2.23
1600	6.33	12.4	159.6	19.3	2.06	+185.2	200	20.81	1.93
1605	6.34	12.2	163.2	18.4	1.97	+188.0	200	20.81	1.63
1610	6.36	12.3	166.8	17.5	1.87	+190.1	200	20.81	1.45
1615	6.39	12.3	167.4	17.5	1.87	+191.5	200	20.81	1.35
1620	6.39	12.3	166.4	17.3	1.85	+193.3	200	20.81	1.29
1625	6.40	12.5	168.2	17.5	1.86	+193.8	200	20.81	1.30
1630	6.46	12.4	168.2	17.7	1.89	+194.0	200	20.81	1.30
1631	sample collected								

Total Pump Time (min): 66 Total Purge Volume (gal): ~3.5 Review Date: 10/21/25

Weather: 64°F partly cloudy Review By: [Signature]

1647 End
Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125ml	Plastic	B	N	2	60ml	VQA	A	N
2	1-L	Plastic	B	N					
1	125ml	Plastic	A	N					
1	250ml	Plastic	A	N					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC MW-15024 Date 10.07.25 Control Number 25-0769-02
 Location JHC Background Wells Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailer
 Depth to Water Tape: Geotech S/N: 1009-22

QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 16.42 Depth-To-Bottom T/PVC (ft) 19.91 Completed by Lmo

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1750	started pump						220	16.44	
1755	7.16	12.7	308.0	13.2	1.30	+176.5	220	16.44	4.65
1800	7.64	12.5	300.8	8.8	0.93	+171.4	220	16.44	3.37
1805	7.78	12.4	297.7	9.7	1.03	+169.2	220	16.44	2.70
1810	7.83	12.4	294.6	11.8	1.26	+167.9	220	16.44	2.09
1815	7.85	12.4	293.2	12.9	1.38	+167.6	220	16.44	1.91
1820	7.86	12.4	292.4	13.5	1.45	+167.6	220	16.44	1.82
1825	7.85	12.4	292.0	14.3	1.53	+167.9	220	16.44	1.73
1830	7.85	12.4	292.0	14.7	1.57	+168.3	220	16.44	1.67
1835	7.85	12.4	291.8	15.0	1.60	+168.9	220	16.44	1.60
1836	collected sample								
1900	End								

Total Pump Time (min): 46 Total Purge Volume (gal): ~ 2.75 Review Date: 10/21/25

Weather: 64°F cloudy Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____								
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N	
1	125mL	Plastic	B	N	2	60mL	VOA	A	N	
2	1-L	Plastic	B	N						
1	125mL	Plastic	A	N						
1	250 mL	Plastic	A	N						

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-MW-15025 Date 10.08.25 Control Number 25-0749-03, -10(MS), -11(MSD)
 Location JHC Background Wells Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: Green S/N: 1009-22
 QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 16.00 Depth-To-Bottom T/PVC (ft) 19.90 Completed by WMO

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

0925	started pump						220	16.02	
0930	6.83	11.3	414.5	51.3	5.56	+127.4	220	16.03	1.99
0935	5.29 10.825	11.4	385.5	48.4	5.29	+133.6	220	16.03	1.60
0940	7.83	11.4	376.4	49.6	5.42	+145.1	220	16.03	1.62
0945	7.87	11.4	372.1	50.8	5.55	+154.3	220	16.03	1.48
0950	7.88	11.4	371.5	51.3	5.60	+154.7	220	16.03	1.53
0955	7.88	11.4	370.5	51.7	5.64	+159.3	220	16.03	1.55
1000	7.89	11.4	370.0	51.8	5.66	+160.9	220	16.03	1.56
1005	7.89	11.4	370.6	51.9	5.68	+162.3	220	16.03	1.50
1006	collected sample								
1027	End								

Total Pump Time (min): 41 Total Purge Volume (gal): ~25 Review Date: 10/24/25

Weather: 48° Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____								
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N	
3	125ml	Plastic	B	N	2	60ml	VCA	A	N	
2	1-L		B							
3	125ml		A							
1	250ml		A							

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JAC-MW-15026 Date 10.08.25 Control Number 25-0769-04,-07
 Location Background wells Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: Geotech S/N: 1009-22

QC SAMPLE: MS/MSD DUP-01 Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 17.87 Depth-To-Bottom T/PVC (ft) 21.00 Completed by Uma

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1040	started	pump					17.89		
1045	5.90	13.1	54.2	66.7	7.01	+248.9	17.90	220	3.29
1050	5.74	13.1	54.3	65.7	6.91	+259.3	17.90	220	3.18
1055	5.68	13.1	53.5	65.7	6.92	+265.3	17.90	220	2.74
1100	5.66	13.1	53.0	66.1	6.95	+269.0	17.90	220	2.54
1105	5.63	13.1	52.9	66.1	6.95	+272.8	17.90	220	2.33
1110	5.62	13.1	52.9	66.3	6.96	+276.7	17.90	220	2.05
1115	5.61	13.1	52.8	66.3	6.94	+280.1	17.90	220	1.90
1120	5.61	13.2	52.9	66.5	6.98	+282.3	17.90	220	1.82
1121	collected sample								
1140	End								

Total Pump Time (min): 41 Total Purge Volume (gal): 22.5 Review Date: 10/21/25

Weather: 60°F Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____								
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N	
1	125ml	PLASTIC	B	N	2	60ml	PLASTIC	A	N	
1	125ml	I	A	N						
2	1-L		B	N						
1	250ml		A	N						

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-MW-15027 Date 10.08.25 Control Number 25-0769-05
 Location JHC-Background Wells Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: Geotech S/N: 1009-22

QC SAMPLE: MS/MSD DUP Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 18.51 Depth-To-Bottom T/PVC (ft) 23.00 Completed by umo

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1155	started pump						220	18.54	
1200	6.72	13.0	224.9	91.3	9.59	+251.4	220	18.55	25.30
1205	7.25	13.0	226.5	90.0	9.48	+247.0	220	18.55	10.99
1210	7.55	13.0	222.2	89.4	9.42	+244.8	220	18.55	9.74
1215	7.70	13.0	221.0	89.0	9.37	+242.7	220	18.55	5.39
1220	7.77	13.0	219.0	88.8	9.32	+240.9	220	18.55	4.63
1225	7.80	13.0	218.4	88.5	9.29	+240.1	220	18.55	4.45
1230	7.82	13.0	215.0	88.2	9.25	+239.0	220	18.55	3.63
1235	7.82	13.0	216.7	87.6	9.21	+238.4	220	18.55	3.78
1240	7.84	13.0	214.4	87.6	9.20	+237.5	220	18.55	2.99
1245	7.85	13.1	214.0	87.4	9.18	+236.7	220	18.55	2.85
1250	7.85	13.1	211.8	87.0	9.15	+235.7	220	18.55	2.89
1251	collected sample								
1304	End								

Total Pump Time (min): 56 Total Purge Volume (gal): ~3.25 Review Date: 10/21/25

Weather: 60°F Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____								
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N	
1	125ml	Plastic	A	N	2	60ml	VOA	A	N	
1	125ml		B							
2	1-L		B							
1	250ml		A							

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-MW-15028 Date 10.08.25 Control Number 25-0769-06
 Location Background wells Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailer
 Depth to Water Tape: Geotek S/N: 1009-22

QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 18.21 Depth-To-Bottom T/PVC (ft) 20.21 Completed by umo

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1320							220	18.23	
1325	8.62	14.5	141.9	87.2	8.81	+188.2	220	18.24	27.54
1330	8.45	14.0	137.7	80.8	8.31	+182.8	220	18.24	6.12
1335	8.50	13.9	136.4	80.1	8.24	+181.8	220	18.24	2.18
1340	8.55	14.0	135.7	80.7	8.28	+181.8	220	18.24	1.34
1345	8.53	13.9	135.2	80.7	8.29	+182.6	220	18.24	1.19
1350	8.52	14.3	135.3	80.9	8.29	+182.5	220	18.24	1.15
1355	8.52	14.3	135.0	81.3	8.29	+182.5	220	18.24	1.12
1356	collected sample								
1410	End								

Total Pump Time (min): 36 Total Purge Volume (gal): ~2.0 Review Date: 10/21/25

Weather: 60 F Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125ml	Plastic			2	60ml	VPA	A	N
1	125 ml	Plastic	B	N	2	1-L	Plastic	A	N
1	125 ml		A	N					
1	250ml		A	N					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-MW-15006 Date 10-8-25 Control Number 25-0770-01
 Location JHC Pond A Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: Geotech S/N: 7371

QC SAMPLE: MS/MSD DUP Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 30.33 Depth-To-Bottom T/PVC (ft) 38.00 Completed by CLE

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1020	started pump						310	—*	
1025	8.19	14.5	668	18.7	1.89	+51.2	310	—*	1.32
1030	8.19	14.5	668	17.4	1.76	+46.5	310	—*	1.15
1035	8.19	14.6	666	18.8	1.89	+47.5	310	—*	1.26
1040	8.19	14.6	666	18.5	1.87	+39.3	310	—*	1.22
1045	8.19	14.6	665	18.4	1.84	+38.8	310	—*	1.22
1046	collected samples								
1050	END							36-36	

Total Pump Time (min): 20 Total Purge Volume (gal): 22.5 Review Date: 10/21/25

Weather: 50°F, Sunny Review By: [Signature]

Comments: * can't measure DTW w/ bladder pump; H2O level below pump head

Bottles Filled Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____

Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125mL	HDPE	B	↓	2	1-L	HDPE	B	↓
1	125mL	↓	A	↓					
1	250mL	↓	A	↓					
2	40mL	VOA	A	↓					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-mw-15007R Date 10-8-25 Control Number 25-6770-02-09, -10 ^{MS MSD}

Location JHC Pond A Well Material: PVC SS Iron Galv. Steel

Purge Method: Peristaltic Submersible Bladder Fultz Bailor

Depth to Water Tape: GeoTech S/N: 7371

QC SAMPLE: MS/MSD DUP Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 31.10 Depth-To-Bottom T/PVC (ft) 42.01 Completed by CIE

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

0850	Started pump						350	37.12		
0855	7.84	13.3	673	5.2	0.53	+56.1	350	37.12	3.49	
0900	7.95	13.4	668	3.0	0.31	+9.0	350	37.12	1.85	
0905	7.97	13.4	666	2.9	0.30	-25.2	350	37.12	1.65	
0910	8.02	13.4	665	2.4	0.25	-33.1	350	37.12	1.38	
0915	7.98	13.4	664	2.3	0.24	-40.7	350	37.12	1.37	
0920	7.99	13.4	662	4.3	0.61	-37.9	350	37.12	1.34	
0925	7.96	13.5	651	9.4	0.97	-13.5	350	37.12	1.60	
0930	7.96	13.5	652	9.4	0.96	-12.4	350	37.12	1.54	
0935	7.98	13.5	657	8.6	0.89	-11.2	350	37.12	1.44	
0940	7.98	13.5	657	8.5	0.88	-11.5	350	37.12	1.41	
0945	7.99	13.5	659	12.9	1.33	-1.8	350	37.12	1.61	
0950	7.99	13.5	659	12.5	1.29	-1.3	350	37.12	1.61	
0955	7.99	13.6	660	13.0	1.30	-1.25 etc 100825	350	37.12	1.61	
0950	collected sample									

Total Pump Time (min): 66 Total Purge Volume (gal): 26.25 Review Date: 10/21/25

Weather: 45°F, sunny Review By: [Signature]

Comments: Collected Field MS/MSD

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
3	125mL	HDPE	B	N	2	1-L	HDPE	B	N
3	125mL	HDPE	A	N					
1	250mL	HDPE	A	N					
2	60mL	VDA	A	N					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
Monitoring Well Sampling Worksheet

Well ID JHC-MW-1502BR Date 10-7-25 Control Number 25-0770-03
 Location JHC Pond A Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailer
 Depth to Water Tape: GeoTeck S/N: 7371

QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 43.65 Depth-To-Bottom T/PVC (ft) 47.60 Completed by CIE

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1610	Started pump						350	43.67	
1610	↓						350	43.67	
1615	7.24	14.3	619	20.4	2.04	+103.4	350	43.67	2.21
1620	7.20	14.2	616	21.0	2.10	+96.0	350	43.67	1.40
1625	7.20	14.3	614	21.1	2.12	+95.4	350	43.67	1.38
1630	7.20	14.2	615	21.4	2.17	+95.1	350	43.67	1.37
1635	7.19	14.3	613	21.8	2.19	+94.7	350	43.67	1.39
1636	collected sample								
1647	end								

Total Pump Time (min): 26 Total Purge Volume (gal): 225 Review Date: 10/21/25

Weather: 65°F, sunny, slight wind Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125mL	HDPE	B	N	2	1-L	HDPE	B	N
1	125mL	↓	A	↓					
1	250mL	↓	A	↓					
2	60mL	VOA	A	↓					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-MW-15009R Date 10-7-25 Control Number 25-0770-04, old DUP
 Location JHC Pond A Well Material: PVC SS Iron Galv. Steel

Purge Method: Peristaltic Submersible Bladder Fultz Bailor

Depth to Water Tape: Geotech S/N: 7371

QC SAMPLE: MS/MSD DUP 02 Sonde ID: 15H 19M 20G 21G 22I

Depth-to-water T/PVC (ft) 43.70 Depth-To-Bottom T/PVC (ft) 50.80 Completed by CIE

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	<0.33	+/- 10%

Started pump @ 1453 Stabilization parameters for the last three readings

1500	6.97	13.7	523	12.7	1.28	+108.8	425	43.73	7.01
1505	6.98	13.7	515	8.7	0.88	+77.1	425	43.73	3.58
1510	6.80	13.8	512	6.7	0.67	+65.4	425	43.73	2.08
1515	6.85	13.5	513	6.9	0.70	+57.7	425	43.73	1.67
1520	6.85	13.5	514	6.6	0.68	+55.0	425	43.73	1.27
1525	6.85	13.5	512	5.5	0.56	+54.0	425	43.73	1.24
1530	6.86	13.4	513	5.9	0.60	+53.0	425	43.73	1.24
1535	6.86	13.4	515	5.5	0.56	+52.1	425	43.73	1.22
1536	collected sample								
1551	end								

Total Pump Time (min): 43 Total Purge Volume (gal): 15.0 Review Date: 10/21/25

Weather: 41°F, partly cloudy, windy Review By: [Signature]

Comments: collected field DUP

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
2	125 mL	HDPE	B	N	4	60 mL	VOA	A	N
2	↓	↓	A	↓					
2	250 mL	↓	A	↓					
4	1-L	↓	B	↓					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID JHC-MW-15011R Date 10.8.25 Control Number 25-0770-05
 Location JHC POND A Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailer
 Depth to Water Tape: Geotech S/N: 7371

QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 38.75 Depth-To-Bottom T/PVC (ft) 45.20 Completed by CIE

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1110	started pump						425	38.80	
1115	6.88	13.8	589	2.8	0.29	+80.6	425	38.80	4.63
1120	6.79	13.8	587	1.2	0.12	+67.3	425	38.80	2.34
1125	6.70	13.7	583	1.2	0.12	+54.1	425	38.80	1.43
1130	6.65	13.7	570	5.9	0.61	+34.0	425	38.80	1.15
1135	6.65	13.7	565	5.7	0.58	+25.9	425	38.80	1.20
1140	6.64	13.7	565	6.0	0.62	+24.6	425	38.80	1.14
1145	6.64	13.7	562	6.1	0.62	+24.4	425	38.80	1.13
1150	6.65	13.7	561	6.0	0.61	+24.3	425	38.80	1.06
1151	collected sample								
1158	end								

Total Pump Time (min): 41 Total Purge Volume (gal): ~4.75 Review Date: 10/21/25

Weather: 60°F, Sunny Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125mL	HDPE	B	N	2	1-L	HDPE	B	N
1	125mL	↓	A	↓					
1	250mL	↓	A	↓					
2	60mL	VOA	A	↓					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID MW-145 Date 10-7-25 Control Number 25-0773-01-09
 Location JHC Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailer
 Depth to Water Tape: Solinst 101 P7 S/N: L5030623

QC SAMPLE: MS/MSD DUP 07 Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 11.89 Depth-To-Bottom T/PVC (ft) 13.28 Completed by KDR

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1852	Started Pump						225	11.98	
1855	6.60	14.1	103.5	10.7	1.08	-40.0	225	11.98	2.49
1859	6.59	13.9	102.0	6.1	0.63	-36.0	225	11.98	2.07
1903	6.57	13.9	100.5	6.6	0.68	-24.4	225	11.98	1.94
1907	6.56	13.9	99.7	7.0	0.72	-19.3	225	11.98	1.92
1911	6.56	13.8	99.2	7.6	0.79	-16.8	225	11.98	1.88
1915	6.55	13.8	98.9	8.1	0.84	-15.6	225	11.98	1.88
1919	6.55	13.8	98.8	8.4	0.87	-15.8	225	11.98	1.90
1920	Collected sample								
1949	End sample collection								

Total Pump Time (min): 28 Total Purge Volume (gal): ~1.5 Review Date: 10/21/25

Weather: 55°F, Sunny Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F -							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125mL	HDPE	B	Y	4	60mL	VOA	A	N
2	↓	↓	B	N	4	4L	HDPE	B	N
2	↓	↓	A	↓					
2	250mL	↓	A	↓					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID PZ-235 Date 10-8-25 Control Number 25-0773-02
 Location JHC Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: Solinst 101 P7 S/N: LS030623

QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 16.01 Depth-To-Bottom T/PVC (ft) 18.32 Completed by KDR

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1046	Started pump						285	16.12	
1049	7.24	14.0	58.2	79.9	8.23	169.3	285	16.13	3.00
1053	7.08	13.9	56.0	77.2	7.97	181.2	285	16.13	2.44
1057	7.06	13.8	55.9	77.0	7.97	186.4	285	16.13	2.33
1101	7.05	13.9	55.8	77.1	7.97	189.9	285	16.13	2.27
1105	7.04	13.8	55.8	77.0	7.97	193.8	285	16.13	2.22
1109	7.04	13.8	55.8	76.9	7.96	196.2	285	16.13	2.18
1113	7.03	13.8	55.8	76.9	7.96	197.4	285	16.13	2.19
1114	collected sample								
1129	End sample collection								

Total Pump Time (min): 28 Total Purge Volume (gal): ~2.0 Review Date: 10/21/25

Weather: 55°F, Sunny Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125mL	HDPE	B	Y	2	60mL	VOA	A	N
1	↓	↓	B	N	2	1L	HDPE	B	N
1	↓	↓	A	↓					
1	250mL	↓	A	↓					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID PZ-245 Date 10.7.25 Control Number 25-0773-03
 Location JHC Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: Solinst 101 P7 S/N: LS030623

QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 10.23 Depth-To-Bottom T/PVC (ft) 11.08 Completed by KDR

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1640	Started pump								
1715	6.18	16.3	109.5	94.1	9.22	39.0	100	11.08	2.50
1718	6.19	16.1	109.8	94.5	9.31	38.1	100	11.08	2.46
1721	6.20	16.0	110.0	94.6	9.34	37.3	100	11.08	2.51
1725	Collected sample								
1835	End sample collection								

NOTE: Inadequate purge volume; sample not valid due to field stabilization criteria not being met.

Total Pump Time (min): 45 Total Purge Volume (gal): ~1.0 Review Date: 10/24/25

Weather: 60°F, Sunny Review By: [Signature]

Comments: Water level in well went to bottom. Well recharges slowly and air bubbles are being pumped up tubing. Tube was at very bottom of well

Bottles Filled Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____

Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125 mL	HDPE	B	Y	2	60mL	VOA	A	N
1	↓	↓	B	N	2	1L	HDPE	B	N
1	↓	↓	A	↓					
1	250mL	↓	A	↓					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID PZ-405 Date 10.7.25 Control Number 25-0773-05
 Location JHC Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: Solinst 101 P7 S/N: L5030623

QC SAMPLE: MS/MSD DUP Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 13.46 Depth-To-Bottom T/PVC (ft) 17.99 Completed by KDR

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

1531	Started Pump						249	13.51	
1534	5.51	13.3	41.2	45.9	4.78	160.5	249	13.51	3.07
1538	5.31	12.5	35.8	41.6	4.44	169.4	249	13.51	2.63
1542	5.30	12.3	34.3	43.4	4.64	174.4	249	13.51	2.59
1546	5.28	12.3	34.0	43.9	4.70	178.7	249	13.51	2.48
1550	5.29	12.3	33.7	44.3	4.73	182.7	249	13.51	2.37
1554	5.30	12.3	33.7	44.2	4.73	186.3	249	13.51	2.30
1555	Collected sample								
1610	End sample collection								

Total Pump Time (min): 24 Total Purge Volume (gal): ~1.5 Review Date: 10/21/25

Weather: 60°F, Sunny Review By: J

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F -							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125mL	HDPE	B	Y	2	60mL	VOA	A	N
1	↓	↓	B	N	2	1L	HDPE	B	↓
1	↓	↓	A	↓					
1	250mL	↓	A	↓					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID TW-19-05 Date 10.8.25 Control Number 25-0773-07
 Location JHC Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailor
 Depth to Water Tape: Solinst 101 P7 S/N: LS030623

QC SAMPLE: MS/MSD DUP Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 15.97 Depth-To-Bottom T/PVC (ft) 18.58 Completed by KDR

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

0840	Started pump						291	16.06	
0843	7.13	12.1	348.1	14.0	1.49	44.3	291	16.06	2.45
0847	7.17	12.0	371.9	7.2	0.77	17.6	291	16.06	2.20
0851	7.19	12.0	383.9	5.5	0.59	5.8	291	16.06	1.94
0855	7.20	12.0	389.5	4.9	0.52	1.1	291	16.06	2.05
0859	7.22	12.0	395.5	4.4	0.48	-3.5	291	16.06	1.97
0903	7.24	12.0	398.2	4.7	0.51	-3.7	291	16.06	2.02
0907	7.26	12.0	399.9	4.8	0.51	-3.5	291	16.06	2.00
0908	Collected sample								
0920	End sample collection								

Total Pump Time (min): 28 Total Purge Volume (gal): ~2.0 Review Date: 10/21/25

Weather: 45°F, sunny Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
1	125mL	HDPE	B	N	2	1L	HDPE	B	N
1	125mL	T	A	T					
1	250mL	T	T	T					
2	60mL	VDA	T	T					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Consumers Energy Company
 Monitoring Well Sampling Worksheet

Well ID TW-19-06A Date 10.8.25 Control Number 25-0773-08-10-11
 Location JHC Well Material: PVC SS Iron Galv. Steel
 Purge Method: Peristaltic Submersible Bladder Fultz Bailer
 Depth to Water Tape: Solinst 101 P7 S/N: LS030623

QC SAMPLE: MS/MSD DUP _____ Sonde ID: 15H 19M 20G 21G 22J

Depth-to-water T/PVC (ft) 14.65 Depth-To-Bottom T/PVC (ft) 15.31 Completed by KDR

Time	pH	Temp	Sp Cond	DO	DO	ORP	Pump Rate	Water level	Turbidity
min	units	°C	uS/cm	% sat.	ppm	mV	mL/min	Drawdown ft	NTU
3-5 min	+/- 0.1	NA	+/- 3%	+/- 10%	+/- 0.3ppm	+/- 10mV	*	< 0.33	+/- 10%

Stabilization parameters for the last three readings

0944	started pump						279	14.81	
0946	7.31	13.0	149.2	36.2	3.79	147.2	279	14.81	2.07
0950	7.30	12.9	149.2	32.0	3.38	147.6	279	14.83	2.04
0954	7.29	12.9	150.9	31.1	3.29	148.3	279	14.83	1.84
0958	7.28	12.9	153.0	30.5	3.22	149.6	279	14.83	1.86
1002	7.27	12.9	154.5	30.4	3.21	150.7	279	14.83	1.85
1006	7.27	12.9	155.7	30.2	3.19	151.7	279	14.83	1.88
1007	Collected sample								
1020	End sample collection								

Total Pump Time (min): 23 Total Purge Volume (gal): ~2.0 Review Date: 10/21/25

Weather: 50°F, sunny Review By: [Signature]

Comments:

Bottles Filled		Preservative Codes: A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCl F - _____							
Quantity	Size	Type	Preservative Code	Filtered Y/N	Quantity	Size	Type	Preservative Code	Filtered Y/N
3	125mL	HDPE	B	N	2	1L	HDPE	B	N
3	125mL	I	A	I					
1	250mL	I							
2	60mL	VOA	I	I					

* Pump rate should be <500 mL/min for low-flow and <1 gal/min for high Volume.

Appendix C

Data Quality Reviews

Laboratory Data Quality Review Groundwater Monitoring Event April 2025 Consumers Energy JH Campbell Background Wells

Groundwater samples were collected by Consumers Energy (CE) Laboratory Services for the April 2025 sampling event. Samples were analyzed for total metals, anions, alkalinity, and total dissolved solids by CE Laboratory Services in Jackson, Michigan. The radium analyses were subcontracted to Eurofins St. Louis, located in Earth City, Missouri. The laboratory analytical results were reported in laboratory sample delivery groups (SDGs) 25-0223 and 160-57889-1.

During the April 2025 sampling event, a groundwater sample was collected from each of the following wells:

- JHC-MW-15023 ■ JHC-MW-15024 ■ JHC-MW-15025
- JHC-MW-15026 ■ JHC-MW-15027 ■ JHC-MW-15028

Each sample was analyzed for the following constituents:

Analyte Group	Method
Anions (Fluoride, Chloride, Sulfate)	EPA 300.0
Alkalinity (Total, Bicarbonate, Carbonate)	SM 2320B
Total Dissolved Solids (TDS)	SM 2540C
Total Metals ¹	SW846 6020B/7470A
Radium (Ra-226, Ra-228, Combined Ra-226 & Ra-228)	EPA 903.0/904.0

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2020) and the Department of Energy Evaluation of Radiochemical Data Usability (USDOE, 1997). The following items were included in the evaluation of the data:

- Chain-of-custody (COC) and data completeness;
- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;
- Data for method blanks, field blanks, and equipment blanks. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical

¹ Iron, copper, nickel, silver, vanadium, and zinc are required analytes under the state-approved Hydrogeological Monitoring Plan (HMP). These analytes are included in SDG 25-0223 and are evaluated and reported under a separate cover.

procedures. Field and equipment blanks are used to assess potential contamination arising from field procedures;

- Data for laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs), when performed. The LCS/LCSDs are used to assess the accuracy and precision of the analytical method using a clean matrix;
- Percent recoveries for matrix spike (MS) and matrix spike duplicates (MSD), when performed on project samples. Percent recoveries are calculated for each analyte spiked and used to assess bias due to sample matrix effects;
- Percent recoveries for carriers, where applicable, for radiochemistry only. Carriers are used to assess the chemical yield for the preparation and/or instrument efficiency;
- Data for laboratory duplicates, when performed on project samples. The laboratory duplicates are replicate analyses of one sample and are used to assess the precision of the analytical method;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes;
- Overall usability of the data.

It should be noted that results for method blanks and LCSs were not provided for review by CE Laboratory Services. Therefore, potential contamination arising from laboratory sample preparation and/or analytical procedures and the accuracy of the analytical method using a clean matrix could not be evaluated for the total metals, anions, alkalinity, and TDS analyses.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

Review Summary

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable for their intended purpose. A summary of the data quality review, including non-conformances and issues identified in this evaluation are noted below.

- The reviewed Appendix III and IV constituents, and optional Piper Diagram constituents will be utilized for the purposes of the CCR monitoring program.
- Data are usable for the purposes of the monitoring program.
- When the data are evaluated through a statistical program, findings below may be used to support the removal of outliers.

QA/QC Sample Summary

- Sample reports were checked to verify that the results corresponded to analytical requests as designated on the COC. The following was noted.
 - The collection date on the container label (4/14/2025) for sample JHC-MW-15026 in SDG 160-57889-1 did not match the collection date on the COC (4/15/2025). The laboratory logged the sample collection date for this sample based on the COC.

- The preservation was assumed to be acceptable based on case narratives and COC preservation information; the cooler temperatures were between 0-6°C and acid was used for sample preservation, as applicable, with the following exception.
 - The cooler temperatures in SDG 160-57889-1 were 20.8°C, 21.4°C, 22.3°C and 22.4°C. There is no impact on the data usability since thermal preservation is not required for radium samples.
- All preparation and analysis holding time requirements were met.
- One equipment blank (EB-01) and one field blank (FB-01) were collected. Target analytes were not detected in these blank samples.
- Target radium analytes were not detected in the method blanks.
- An LCS was analyzed with each analytical batch for radium; all criteria were met.
- MS and MSD analyses were performed on sample JHC-MW-15025 for total metals and anions. The recoveries were within the acceptance limits. Relative percent differences were not provided by the laboratory and therefore were not evaluated; further, MS/MSD concentrations were not provided by the laboratory. However, since all recoveries were within the acceptance limits, there is no impact on data usability due to these issues.
- Laboratory duplicate analyses were performed on sample JHC-MW-15023 for radium-226 and radium-228; all criteria were met.
- Samples DUP-01/JHC-MW-15023 were submitted as the field duplicate pair with this data set; all criteria were met.
- Carrier recoveries were within 30-110%.
- The RLs met the project requirements and were deemed suitable for data use.
- Dilution factors for all analyses were provided in the EDD in this data set; all dilution factors were listed as 1-fold.

Laboratory Data Quality Review Groundwater Monitoring Event April 2025 Consumers Energy JH Campbell Pond A Wells

Groundwater samples were collected by Consumers Energy (CE) Laboratory Services for the April 2025 sampling event. Samples were analyzed for total metals, anions, alkalinity, and total dissolved solids by CE Laboratory Services in Jackson, Michigan. The radium analyses were subcontracted to Eurofins St. Louis, located in Earth City, Missouri. The laboratory analytical results were reported in laboratory sample delivery groups (SDGs) 25-0224 and 160-57887-1.

During the April 2025 sampling event, a groundwater sample was collected from each of the following wells:

- JHC-MW-15006 ■ JHC-MW-15007R ■ JHC-MW-15008R
- JHC-MW-15009R ■ JHC-MW-15011R

Each sample was analyzed for one or more of the following constituents:

Analyte Group	Method
Anions (Fluoride, Chloride, Sulfate)	EPA 300.0
Alkalinity (Total, Bicarbonate, Carbonate)	SM 2320B
Total Dissolved Solids (TDS)	SM 2540C
Total Metals ¹	SW846 6020B/7470A
Radium (Ra-226, Ra-228, Combined Ra-226 & Ra-228)	EPA 903.0/904.0

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2020) and the Department of Energy Evaluation of Radiochemical Data Usability (USDOE, 1997). The following items were included in the evaluation of the data:

- Chain-of-custody (COC) and data completeness;
- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;
- Data for method blanks, equipment blanks, and field blanks. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical

¹ Iron, copper, nickel, silver, vanadium, and zinc are required analytes under the state-approved Hydrogeological Monitoring Plan (HMP). These analytes are included in SDG 25-0224 and are evaluated and reported under a separate cover.

procedures. Field and equipment blanks are used to assess potential contamination arising from field procedures;

- Data for laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs), when performed. The LCS/LCSDs are used to assess the accuracy and precision of the analytical method using a clean matrix;
- Percent recoveries for matrix spike (MS) and matrix spike duplicates (MSD), when performed on project samples. Percent recoveries are calculated for each analyte spiked and used to assess bias due to sample matrix effects;
- Percent recoveries for carriers, where applicable, for radiochemistry only. Carriers are used to assess the chemical yield for the preparation and/or instrument efficiency;
- Data for laboratory duplicates, when performed on project samples. The laboratory duplicates are replicate analyses of one sample and are used to assess the precision of the analytical method;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes;
- Overall usability of the data.

It should be noted that results for method blanks and LCSs were not provided for review by CE Laboratory Services. Therefore, potential contamination arising from laboratory sample preparation and/or analytical procedures and the accuracy of the analytical method using a clean matrix could not be evaluated for the total and dissolved metals, anions, alkalinity, and TDS analyses.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

Review Summary

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable for their intended purpose. A summary of the data quality review, including non-conformances and issues identified in this evaluation are noted below.

- The reviewed Appendix III and IV constituents, and optional Piper Diagram constituents will be utilized for the purposes of the CCR monitoring program.
- Data are usable for the purposes of the monitoring program.
- When the data are evaluated through a statistical program, findings below may be used to support the removal of outliers.

QA/QC Sample Summary

- Sample reports were checked to verify that the results corresponded to analytical requests as designated on the COC. The following was noted.
 - The collection time on the container label (17:34) for sample JHC-MW-15006 in SDG 160-57887-1 did not match the collection date on the COC (17:36). The laboratory logged the sample collection time based on the COC.

- The preservation was assumed to be acceptable based on case narrative and COC preservation information; the cooler temperatures were between 0-6°C and acid was used for sample preservation, as applicable, with the following exception.
 - The cooler temperatures in SDG 160-57887-1 were 20.8°C, 21.4°C, 22.3°C and 22.4°C. There is no impact on the data usability since thermal preservation is not required for radium samples.
- All preparation and analysis holding time requirements were met.
- One equipment blank (EB-02) and one field blank (FB-02) were collected. Target analytes were not detected in these blank samples with the following exceptions.
 - Radium-228 (0.718 +/- 0.432 pCi/L) and combined radium-226/228 (0.755 +/- 0.440 pCi/L) were detected in sample EB-02 at the listed concentrations. Potential false positive exists for positive radium-228 and combined radium-226/228 results with normalized absolute differences <1.96, as summarized in Attachment A.
- Target radium analytes were not detected in the method blanks
- An LCS was analyzed with each analytical batch for radium; all criteria were met.
- MS and MSD analyses were performed on samples JHC-MW-15007R for total metals and anions. The recoveries were within the acceptance limits. Relative percent differences were not provided by the laboratory and therefore were not evaluated; further, MS/MSD concentrations were not provided by the laboratory. However, since all recoveries were within the acceptance limits, there is no impact on data usability due to this issue.
- Laboratory duplicate analyses were not performed on a sample from this data set.
- Samples DUP-02/JHC-MW-15009R were submitted as the field duplicate pair with this data set; all criteria were met.
- Carrier recoveries were within 30-110%.
- The RLs met the project requirements and were deemed suitable for data use.
- Dilution factors for all analyses were provided in the EDD in this data set; all dilution factors were listed as 1-fold.

Attachment A
 Summary of Data Non-Conformances for Groundwater Analytical Data
 JH Campbell Pond A
 West Olive, Michigan

Samples	Collection Date	Analyte	Non-Conformance/Issue
JHC-MW-15007R	4/14/2025		
JHC-MW-15008R	4/14/2025	Radium-228 and Combined Radium-226/288	Equipment blank contamination; potential false positive.
JHC-MW-15009R	4/14/2025		
JHC-MW-15011R	4/14/2025		
DUP-02	4/14/2025		

Laboratory Data Quality Review Groundwater Monitoring Event April 2025 Consumers Energy JH Campbell Supplemental Wells

Groundwater samples were collected by Consumers Energy (CE) Laboratory Services for the April 2025 sampling event. Samples were analyzed for total and/or dissolved metals, anions, alkalinity, and total dissolved solids by CE Laboratory Services in Jackson, Michigan. The radium analyses were subcontracted to Eurofins St. Louis, located in Earth City, Missouri. The laboratory analytical results were reported in laboratory sample delivery groups (SDGs) 25-0226 and 160-57886-1.

During the April 2025 sampling event, a groundwater sample was collected from each of the following wells:

- MW-14S
- PZ-23S
- PZ-24S
- PZ-40S
- TW-19-05
- TW-19-06A

Each sample was analyzed for one or more of the following constituents:

Analyte Group	Method
Anions (Fluoride, Chloride, Sulfate)	EPA 300.0
Alkalinity (Total, Bicarbonate, Carbonate)	SM 2320B
Total Dissolved Solids (TDS)	SM 2540C
Total and/or Dissolved Metals ¹	SW846 6020B/7470A
Radium (Ra-226, Ra-228, Combined Ra-226 & Ra-228)	EPA 903.0/904.0

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2020) and the Department of Energy Evaluation Of Radiochemical Data Usability (USDOE, 1997). The following items were included in the evaluation of the data:

- Chain-of-custody (COC) and data completeness;
- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;
- Data for method blanks, equipment blanks, and field blanks. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical

¹ Iron, copper, nickel, silver, vanadium, and zinc are required analytes under the state-approved Hydrogeological Monitoring Plan (HMP). These analytes are included in SDG 25-0226 and are evaluated and reported under a separate cover.

procedures. Field and equipment blanks are used to assess potential contamination arising from field procedures;

- Data for laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs), when performed. The LCS/LCSDs are used to assess the accuracy and precision of the analytical method using a clean matrix;
- Percent recoveries for matrix spike (MS) and matrix spike duplicates (MSD), when performed on project samples. Percent recoveries are calculated for each analyte spiked and used to assess bias due to sample matrix effects;
- Percent recoveries for carriers, where applicable, for radiochemistry only. Carriers are used to assess the chemical yield for the preparation and/or instrument efficiency;
- Data for laboratory duplicates, when performed on project samples. The laboratory duplicates are replicate analyses of one sample and are used to assess the precision of the analytical method;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes;
- Overall usability of the data.

It should be noted that results for method blanks and LCSs were not provided for review by CE Laboratory Services. Therefore, potential contamination arising from laboratory sample preparation and/or analytical procedures and the accuracy of the analytical method using a clean matrix could not be evaluated for the total and dissolved metals, anions, alkalinity, and TDS analyses.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

Review Summary

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable for their intended purpose. A summary of the data quality review, including non-conformances and issues identified in this evaluation are noted below.

- The reviewed Appendix III and IV constituents, and optional Piper Diagram constituents will be utilized for the purposes of the CCR monitoring program.
- Data are usable for the purposes of the monitoring program.
- When the data are evaluated through a statistical program, findings below may be used to support the removal of outliers.

QA/QC Sample Summary

- Sample reports were checked to verify that the results corresponded to analytical requests as designated on the COC. No issues were noted
- The preservation was assumed to be acceptable based on case narrative and COC preservation information; the cooler temperatures were between 0-6°C and acid was used for sample preservation, as applicable, with the following exception.

- The cooler temperatures in SDG 160-57886-1 were 20.8°C, 21.4°C, 22.3°C and 22.4°C. There is no impact on the data usability since thermal preservation is not required for radium samples.
- All preparation and analysis holding time requirements were met.
- There were no equipment blanks or field blanks collected with this data set.
- Target radium analytes were not detected in the method blanks.
- An LCS was analyzed with each analytical batch for radium; all criteria were met.
- MS and MSD analyses were performed on sample TW-19-06A for total metals and anions. The recoveries were within the acceptance limits. Relative percent differences were not provided by the laboratory and therefore were not evaluated; further, MS/MSD concentrations were not provided by the laboratory. However, since all recoveries were within the acceptance limits, there is no impact on data usability due to this issue.
- Laboratory duplicate analyses were performed on sample DUP-07 for radium-226 and radium-228; all criteria were met.
- Samples DUP-07/PZ-40S were submitted as the field duplicate pair with this data set; all criteria were met.
- Carrier recoveries were within 30-110%.
- The RLs met the project requirements and were deemed suitable for data use.
- Dilution factors for all analyses were provided in the EDD in this data set; all dilution factors were listed as 1-fold. Note that dilution factors for non-radium analyses were only provided in the EDD.

Laboratory Data Quality Review Groundwater Monitoring Event October 2025 Consumers Energy JH Campbell Background Wells

Groundwater samples were collected by Consumers Energy (CE) Laboratory Services for the October 2025 sampling event. Samples were analyzed for total metals, anions, alkalinity, and total dissolved solids by CE Laboratory Services in Jackson, Michigan. The radium analyses were subcontracted to Eurofins St. Louis, located in Earth City, Missouri. The laboratory analytical results were reported in laboratory sample delivery groups (SDGs) 25-0769 and 160-60010-1.

During the October 2025 sampling event, a groundwater sample was collected from each of the following wells:

- JHC-MW-15023 ■ JHC-MW-15024 ■ JHC-MW-15025
- JHC-MW-15026 ■ JHC-MW-15027 ■ JHC-MW-15028

Each sample was analyzed for the following constituents:

Analyte Group	Method
Anions (Fluoride, Chloride, Sulfate)	USEPA 300.0
Alkalinity (Total, Bicarbonate, Carbonate)	Standard Method (SM) 2320B
Total Dissolved Solids (TDS)	SM 2540C
Total Metals ¹	SW846 6020B/7470A
Radium (Ra-226, Ra-228, Combined Ra-226 & Ra-228)	EPA 903.0/904.0

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2020) and the Department of Energy Evaluation of Radiochemical Data Usability (USDOE, 1997). The following items were included in the evaluation of the data:

- Chain-of-custody (COC) and data completeness;
- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;

¹ Iron, copper, nickel, silver, vanadium, and zinc are required analytes under the state-approved Hydrogeological Monitoring Plan (HMP). These analytes are included in SDG 25-0769 and are evaluated and reported under a separate cover.

- Data for method blanks, field blanks, and equipment blanks. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures. Field and equipment blanks are used to assess potential contamination arising from field procedures;
- Data for laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs), when performed. The LCS/LCSDs are used to assess the accuracy and precision of the analytical method using a clean matrix;
- Percent recoveries for matrix spike (MS) and matrix spike duplicates (MSD), when performed on project samples. Percent recoveries are calculated for each analyte spiked and used to assess bias due to sample matrix effects;
- Percent recoveries for carriers, where applicable, for radiochemistry only. Carriers are used to assess the chemical yield for the preparation and/or instrument efficiency;
- Data for laboratory duplicates, when performed on project samples. The laboratory duplicates are replicate analyses of one sample and are used to assess the precision of the analytical method;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes;
- Overall usability of the data.

It should be noted that results for method blanks and LCSs were not provided for review by CE Laboratory Services. Therefore, potential contamination arising from laboratory sample preparation and/or analytical procedures and the accuracy of the analytical method using a clean matrix could not be evaluated for the total metals, anions, alkalinity, and TDS analyses.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

Review Summary

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable for their intended purpose. A summary of the data quality review, including non-conformances and issues identified in this evaluation are noted below.

- The reviewed Appendix III and IV constituents, and optional Piper Diagram constituent will be utilized for the purposes of the CCR monitoring program.
- Data are usable for the purposes of the monitoring program.
- When the data are evaluated through a statistical program, findings below may be used to support the removal of outliers.

QA/QC Sample Summary

- Sample reports were checked to verify that the results corresponded to analytical requests as designated on the COC. No issues were noted.

- The preservation was assumed to be acceptable based on case narratives and COC preservation information; the cooler temperatures were between 0-6°C and acid was used for sample preservation, as applicable, with the following exception.
 - The cooler temperature in SDG 160-60010-1 was 23.0°C. There is no impact on the data usability since thermal preservation is not required for radium samples.
- All preparation and analysis holding time requirements were met.
- One equipment blank (EB-01) and one field blank (FB-01) were collected. Target analytes were not detected in these blank samples.
- Target radium analytes were not detected in the method blanks.
- An LCS was analyzed with each analytical batch for radium; all criteria were met.
- MS and MSD analyses were performed on sample JHC-MW-15025 for total metals and anions. The recoveries were within the acceptance limits. Relative percent differences were not provided by the laboratory and therefore were not evaluated; further, MS/MSD concentrations were not provided by the laboratory. However, since all recoveries were within the acceptance limits, there is no impact on data usability due to these issues.
- Laboratory duplicate analyses were not performed on a sample from this data set.
- Samples DUP-01/JHC-MW-15026 were submitted as the field duplicate pair with this data set; all criteria were met.
- Carrier recoveries were within 30-110%.
- The RLs met the project requirements and were deemed suitable for data use.
- Dilution factors for all analyses were provided in the EDD in this data set; all dilution factors were listed as 1-fold.

Laboratory Data Quality Review Groundwater Monitoring Event October 2025 Consumers Energy JH Campbell Pond A Wells

Groundwater samples were collected by Consumers Energy (CE) Laboratory Services for the October 2025 sampling event. Samples were analyzed for total metals, anions, alkalinity, and total dissolved solids by CE Laboratory Services in Jackson, Michigan. The radium analyses were subcontracted to Eurofins St. Louis, located in Earth City, Missouri. The laboratory analytical results were reported in laboratory sample delivery groups (SDGs) 25-0770 and 160-60009-1.

During the October 2025 sampling event, a groundwater sample was collected from each of the following wells:

- JHC-MW-15006
- JHC-MW-15007R
- JHC-MW-15008R
- JHC-MW-15009R
- JHC-MW-15011R

Each sample was analyzed for the following constituents:

Analyte Group	Method
Anions (Fluoride, Chloride, Sulfate)	EPA 300.0
Alkalinity (Total, Bicarbonate, Carbonate)	Standard Method (SM) 2320B
Total Dissolved Solids (TDS)	SM 2540C
Total Metals ¹	SW846 6020B/7470A
Radium (Ra-226, Ra-228, Combined Ra-226 & Ra-228)	EPA 903.0/904.0

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2020) and the Department of Energy Evaluation of Radiochemical Data Usability (USDOE, 1997). The following items were included in the evaluation of the data:

- Chain-of-custody (COC) and data completeness;
- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;

¹ Iron, copper, nickel, silver, vanadium, and zinc are required analytes under the state-approved Hydrogeological Monitoring Plan (HMP). These analytes are included in SDG 25-0770 and are evaluated and reported under a separate cover.

- Data for method blanks, equipment blanks, and field blanks. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures. Field and equipment blanks are used to assess potential contamination arising from field procedures;
- Data for laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs), when performed. The LCS/LCSDs are used to assess the accuracy and precision of the analytical method using a clean matrix;
- Percent recoveries for matrix spike (MS) and matrix spike duplicates (MSD), when performed on project samples. Percent recoveries are calculated for each analyte spiked and used to assess bias due to sample matrix effects;
- Data for laboratory duplicates, when performed on project samples. The laboratory duplicates are replicate analyses of one sample and are used to assess the precision of the analytical method;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes;
- Overall usability of the data.

It should be noted that results for method blanks and LCSs were not provided for review by CE Laboratory Services. Therefore, potential contamination arising from laboratory sample preparation and/or analytical procedures and the accuracy of the analytical method using a clean matrix could not be evaluated for the total metals, anions, alkalinity, and TDS analyses.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

Review Summary

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable for their intended purpose. A summary of the data quality review, including non-conformances and issues identified in this evaluation are noted below.

- The reviewed Appendix III and IV constituents, and optional Piper Diagram constituents will be utilized for the purposes of the CCR monitoring program.
- Data are usable for the purposes of the monitoring program.
- When the data are evaluated through a statistical program, findings below may be used to support the removal of outliers.

QA/QC Sample Summary

- Sample reports were checked to verify that the results corresponded to analytical requests as designated on the COC. No issues were noted.
- The preservation was assumed to be acceptable based on case narrative and COC preservation information; the cooler temperatures were between 0-6°C and acid was used for sample preservation, as applicable, with the following exception.

- The cooler temperature in SDG 160-60009-1 was 22.6°C. There is no impact on the data usability since thermal preservation is not required for radium samples.
- All preparation and analysis holding time requirements were met.
- One equipment blank (EB-02) and one field blank (FB-02) were collected. Target analytes were not detected in these blank samples with the following exceptions.
 - Radium-228 (0.871 +/- 0.460 pCi/L) and combined radium 226+228 (0.889 +/- 0.520 pCi/L) were detected in field blank (FB-02). Radium-228 (1.15 +/- 0.465 pCi/L) and combined radium 226+228 (1.42 +/- 0.518 pCi/L) were also detected in equipment blank (EB-02). Potential false positive exists for the positive radium-228 and combined radium 226+228 results with normalized absolute differences <1.96, as summarized in Attachment A.
- Target radium analytes were not detected in the method blanks.
- An LCS was analyzed with each analytical batch for radium; all criteria were met.
- MS and MSD analyses were performed on sample JHC-MW-15007R for total metals and anions. The recoveries were within the acceptance limits. Relative percent differences were not provided by the laboratory and therefore were not evaluated; further, MS/MSD concentrations were not provided by the laboratory. However, since all recoveries were within the acceptance limits, there is no impact on data usability due to this issue.
- Laboratory duplicate analyses were performed on sample DUP-02 for radium-226 and radium-228. All criteria were met.
- Samples DUP-02/JHC-MW-15009R were submitted as the field duplicate pair with this data set; all criteria were met.
- Carrier recoveries were within 30-110%.
- The RLs met the project requirements and were deemed suitable for data use.
- Dilution factors for all analyses were provided in the EDD in this data set; all dilution factors were listed as 1-fold.

Attachment A
 Summary of Data Non-Conformances for Groundwater Analytical Data
 JH Campbell Pond A Wells
 West Olive, Michigan

Samples	Collection Date	Analyte	Non-Conformance/Issue
JHC-MW-15007R	10/8/2025	Radium-228 and Combined Radium 226+228	Field and Equipment blank contamination; potential false positive exists for the listed results.
JHC-MW-15008R	10/7/2025		
JHC-MW-15009R	10/7/2025		
JHC-MW-15011R	10/8/2025		
DUP-02	10/7/2025		

Laboratory Data Quality Review Groundwater Monitoring Event October 2025 Consumers Energy JH Campbell Supplemental Wells

Groundwater samples were collected by Consumers Energy (CE) Laboratory Services for the October 2025 sampling event. Samples were analyzed for total and/or dissolved metals, anions, alkalinity, and total dissolved solids by CE Laboratory Services in Jackson, Michigan. The radium analyses were subcontracted to Eurofins St. Louis, located in Earth City, Missouri. The laboratory analytical results were reported in laboratory sample delivery groups (SDGs) 25-0773 and 160-60008-1.

During the October 2025 sampling event, a groundwater sample was collected from each of the following wells:

- MW-14S
- PZ-23S
- PZ-40S
- TW-19-05
- TW-19-06A

Each sample was analyzed for one or more of the following constituents:

Analyte Group	Method
Anions (Fluoride, Chloride, Sulfate)	USEPA 300.0
Alkalinity (Total, Bicarbonate, Carbonate)	Standard Method (SM) 2320B
Total Dissolved Solids (TDS)	SM 2540C
Total and/or Dissolved Metals ¹	SW846 6020B/7470A
Radium (Ra-226, Ra-228, Combined Ra-226 & Ra-228)	EPA 903.0/904.0

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2020) and the Department of Energy Evaluation Of Radiochemical Data Usability (USDOE, 1997). The following items were included in the evaluation of the data:

- Chain-of-custody (COC) and data completeness;
- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;

¹ Iron, copper, nickel, silver, vanadium, and zinc are required analytes under the state-approved Hydrogeological Monitoring Plan (HMP). These analytes are included in SDG 25-0773 and are evaluated and reported under a separate cover.

- Data for method blanks, equipment blanks, and field blanks. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures. Field and equipment blanks are used to assess potential contamination arising from field procedures;
- Data for laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs), when performed. The LCS/LCSDs are used to assess the accuracy and precision of the analytical method using a clean matrix;
- Percent recoveries for matrix spike (MS) and matrix spike duplicates (MSD), when performed on project samples. Percent recoveries are calculated for each analyte spiked and used to assess bias due to sample matrix effects;
- Percent recoveries for carriers, where applicable, for radiochemistry only. Carriers are used to assess the chemical yield for the preparation and/or instrument efficiency;
- Data for laboratory duplicates, when performed on project samples. The laboratory duplicates are replicate analyses of one sample and are used to assess the precision of the analytical method;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes;
- Overall usability of the data.

It should be noted that results for method blanks and LCSs were not provided for review by CE Laboratory Services. Therefore, potential contamination arising from laboratory sample preparation and/or analytical procedures and the accuracy of the analytical method using a clean matrix could not be evaluated for the total and dissolved metals, anions, alkalinity, and TDS analyses.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

Review Summary

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable for their intended purpose. A summary of the data quality review, including non-conformances and issues identified in this evaluation are noted below.

- The reviewed Appendix III and IV constituents, and optional Piper Diagram constituents will be utilized for the purposes of the CCR monitoring program.
- Data are usable for the purposes of the monitoring program.
- When the data are evaluated through a statistical program, findings below may be used to support the removal of outliers.

QA/QC Sample Summary

- Sample reports were checked to verify that the results corresponded to analytical requests as designated on the COC. No issues were noted.

- The preservation was assumed to be acceptable based on case narrative and COC preservation information; the cooler temperatures were between 0-6°C and acid was used for sample preservation, as applicable, with the following exception.
 - The cooler temperature in SDG 160-60008-1 was 22.6°C. There is no impact on the data usability since thermal preservation is not required for radium samples.
- All preparation and analysis holding time requirements were met.
- There were no equipment blanks or field blanks collected with this data set.
- Target radium analytes were not detected in the method blanks.
- An LCS was analyzed with each analytical batch for radium; all criteria were met.
- MS and MSD analyses were performed on sample TW-19-06A for total metals and anions. The recoveries were within the acceptance limits. Relative percent differences were not provided by the laboratory and therefore were not evaluated; further, MS/MSD concentrations were not provided by the laboratory. However, since all recoveries were within the acceptance limits, there is no impact on data usability due to this issue.
- Laboratory duplicate analyses were not performed on a sample from this data set.
- Samples DUP-07/MW-14S were submitted as the field duplicate pair with this data set; all criteria were met.
- Carrier recoveries were within 30-110%.
- The RLs met the project requirements and were deemed suitable for data use.
- Dilution factors for all analyses were provided in the EDD in this data set; all dilution factors were listed as 1-fold.

Appendix D
Statistical Evaluation of April 2025
Assessment Monitoring Sampling Event

Technical Memorandum

Date: July 22, 2025

To: Harold D. Register, Jr., Consumers Energy

From: Sarah Holmstrom, TRC
Kristin Lowery, TRC
Henry Schnaidt, TRC

Project No.: 634689.0000.0000 Phase 1 Task 2

Subject: Statistical Evaluation of April 2025 Assessment Monitoring Sampling Event,
JH Campbell Bottom Ash Pond A CCR Unit, Consumers Energy Company, West
Olive, Michigan

Consumers Energy is continuing semiannual assessment monitoring in accordance with §257.95 of the CCR Rule¹ at the JH Campbell Power Plant (JHC) Bottom Ash Pond A. The first semiannual assessment monitoring event of 2025 was conducted from April 14 through 16, 2025. In accordance with §257.95, the assessment monitoring data must be compared to Groundwater Protection Standards (GWPSs) to determine whether or not Appendix IV constituents are detected at statistically significant levels above the GWPSs. GWPSs were established in accordance with §257.95(h), as detailed in the October 15, 2018 Groundwater Protection Standards technical memorandum, which was also included in the 2018 Annual Groundwater Monitoring Report (2018 Annual Report) (TRC, January 2019). The following narrative describes the methods that were employed for comparisons to the GWPSs. The results obtained and the Sanitas™ output files are included as an attachment.

The statistical evaluation of the first semiannual assessment monitoring event for 2025 indicates that no constituents are present at statistically significant levels exceeding the GWPSs in downgradient monitoring wells at the Pond A CCR Unit.

<u>Constituent</u>	<u>GWPS</u>	<u># Downgradient Wells Observed</u>
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No constituents are present at statistically significant levels above the GWPSs.

These results are generally consistent with the results of the previous assessment monitoring data statistical evaluation, with no new statistically significant levels above the GWPSs. Consumers Energy will continue to evaluate corrective measures per §257.96 and §257.97. Consumers Energy will continue executing the self-implementing groundwater compliance schedule in conformance with §257.90 - §257.98.

¹ USEPA final rule for the regulation and management of Coal Combustion Residuals (CCR) under the Resource Conservation and Recovery Act (RCRA) published April 17, 2015, as amended.

Technical Memorandum

Assessment Monitoring Statistical Evaluation

The downgradient compliance well network at Pond A consists of five wells (JHC-MW-15006, JHC-MW-15007R, JHC-MW-15008R, JHC-MW-15009R and JHC-MW-150011R) located south and east of Pond A.²

Following the first semiannual assessment monitoring sampling event for 2025, compliance well data for Pond A were evaluated in accordance with the Groundwater Statistical Evaluation Plan (Stats Plan) (TRC, October 2017). An assessment monitoring program was developed to evaluate concentrations of CCR constituents present in the uppermost aquifer relative to acceptable levels (i.e. GWPSs). To evaluate whether or not a GWPS exceedance is statistically significant, the difference in concentration observed at the downgradient wells during a given assessment monitoring event compared to the GWPS must be large enough, after accounting for variability in the sample data, that the result is unlikely to have occurred merely by chance. Consistent with the Unified Guidance³, the preferred method for comparisons to a fixed standard is confidence limits. An exceedance of the standard occurs when the 99 percent lower confidence level of the downgradient data exceeds the GWPS. Based on the number of historical observations in the representative sample population, the sample mean, the sample standard deviation, and a selected confidence level (i.e. 99 percent), an upper and lower confidence limit is calculated. The actual mean concentration of the population, with 99 percent confidence, will fall between the lower and upper confidence limits.

The concentrations observed in the downgradient wells are deemed to be a statistically significant exceedance when the 99 percent lower confidence limit of the downgradient data exceeds the GWPS. If the confidence interval straddles the GWPS (i.e. the lower confidence level is below the GWPS but the upper confidence level is above), the statistical test result indicates that there is insufficient confidence that the measured concentrations are different from the GWPS and thus there is no compelling evidence that the measured concentration is a result of a release from the CCR unit versus the inherent variability of the sample data. This statistical approach is consistent with the statistical methods for assessment monitoring presented in §257.93(f) and (g). Statistical evaluation methodologies built into the CCR Rule, and numerous other federal rules, are key in determining whether or not individually measured data points represent a concentration increase over the baseline or a fixed standard (such as a GWPS in an assessment monitoring program).

For each detected Appendix IV constituent, the concentrations for each well were first compared directly to the GWPS, as shown on Table 1. Constituent-well combinations that included a direct exceedance of the GWPS within the past eight monitoring events (October 2021 through April 2025) were retained for further analysis (Attachment 1). Direct comparison GWPS exceedances included the following constituent-well combinations:

- Arsenic at JHC-MW-15006;

² As discussed in the 2019 Annual Groundwater Monitoring and Corrective Action Report and Fourth Quarter 2019 Hydrogeological Monitoring Report for the Pond A CCR Unit dated January 2020, monitoring well JHC-MW-15008 was decommissioned and replacement monitoring well JHC-MW-15008R was installed in June 2019. As detailed in the 2021 Annual Groundwater Monitoring and Corrective Action Report, JH Campbell Power Plant, Pond A (TRC, January 2022), monitoring wells JHC-MW-15007, JHC-MW-15009, and JHC-MW-15011 were decommissioned and replacement monitoring wells JHC-MW-15007R, JHC-MW-15009R, and JHC-MW-15011R were installed in July 2021 and JHC-MW-15010 was removed from the monitoring program. Statistical evaluation, i.e., trend or confidence interval analysis, were completed using only data from the replacement wells.

³ USEPA. 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance*. Office of Conservation and Recovery. EPA 530/R-09-007.

Technical Memorandum

- Selenium at JHC-MW-15009R; and,
- Arsenic and selenium at JHC-MW-15011R.

Groundwater data for the constituent-well combinations with direct-comparison exceedances of a GWPS were then evaluated utilizing Sanitas™ statistical software. Sanitas™ is a software tool that is commercially available for performing statistical evaluation consistent with procedures outlined in the Unified Guidance. Within the Sanitas™ statistical program, confidence limits were used to perform the statistical comparison of compliance data to a fixed standard. Parametric or non-parametric confidence intervals were calculated, as appropriate, for each of the CCR Appendix IV parameters using a 99 percent confidence level, i.e., a significance level (α) of 0.01. The following narrative describes the methods employed, the results obtained and the Sanitas™ output files are included as an attachment.

The statistical data evaluation included the following steps:

- Review of data quality checklists for the data sets;
- Graphical representation of the monitoring data as time versus concentration by well-constituent pair;
- Outlier testing of individual data points that appear from the graphical representations as potential outliers;
- Evaluation of visual trends apparent in the graphical representations for statistical significance;
- Evaluation of percentage of non-detects for each well-constituent pair;
- Distribution of the data; and
- Calculation of the confidence intervals for each cumulative dataset.

The results of these evaluations are presented and discussed below.

Data from each round were evaluated for completeness, overall quality, and usability and were deemed appropriate for the purposes of the CCR assessment monitoring program.

Initially, the results for these well-constituent pairs were observed visually for potential outliers and trends. No outliers were apparent. A visual increasing trend was observed for arsenic in JH-MW-15006, while a visual decreasing trend was observed for arsenic in JH-MW-15011R (time-series plots in Attachment 1). The visual increasing trend was found to be significant, while the visual decreasing trend was not. Groundwater conditions are re-equilibrating following capping activities at Pond A that were completed in Summer 2019. Because hydrogeologic conditions are in the process of stabilizing, temporary trending and sporadic outlier data are not unexpected. Therefore, all data is used in the statistical evaluation.

The Sanitas™ software was then used to test compliance at the downgradient monitoring wells using the confidence interval method for the most recent eight compliance events. Eight independent sampling events provide the appropriate density of data as recommended per the Unified Guidance yet are collected recently enough to provide an indication of current condition. The tests were run with a per-well significance of $\alpha = 0.01$. The software outputs are included in Attachment 1 along with data reports showing the values used for the evaluation. Non-detect data was handled in accordance with the Stats Plan for the purposes of calculating the confidence intervals.

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The Sanitas™ software generates an output that includes graphs of the parametric or non-parametric confidence intervals for each well along with notes on data transformations, as appropriate. Data distributions were as follows:

Distribution	Parameter-Well Combinations
Normal	Arsenic at JHC-MW-15006 and JHC-MW-15011R Selenium at JHC-MW-15011R
Normalized by square root transformation	Selenium at JHC-MW-15009R

The confidence interval test compares the lower confidence limit to the GWPS. The statistical evaluation of the Appendix IV constituents shows no statistically significant exceedances of the GWPSs. Consumers Energy will continue executing the self-implementing groundwater compliance schedule in conformance with §257.90 - §257.98.

Attachments

- Table 1 Comparison of Groundwater Sampling Results to Groundwater Protection Standards for Statistical Evaluation
- Attachment 1 Sanitas™ Output

Table 1

Table 1
 Comparison of Groundwater Sampling Results to Groundwater Protection Standards for Statistical Evaluation
 JH Campbell Pond A – RCRA CCR Monitoring Program
 West Olive, Michigan

Sample Location:			JHC-MW-15006							
Sample Date:			10/21/2021	4/14/2022	10/18/2022	4/11/2023	10/17/2023	4/16/2024	10/14/2024	4/14/2025
Constituent	Unit	GWPS								
Appendix III										
Boron	ug/L	NA	371	676	765	670	757	609	695	600
Calcium	mg/L	NA	84.5	59.2	67.2	68.8	75.7	67.8	52.8	74.4
Chloride	mg/L	NA	19.6	17.0	18.3	13.3	18.3	12.5	17.0	11.8
Fluoride	ug/L	NA	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Sulfate	mg/L	NA	217	101	179	98.3	204	80.6	78.5	100
Total Dissolved Solids	mg/L	NA	485	341	458	385	552	393	308	418
pH, Field	SU	NA	7.8	7.8	8.3	7.8	8.2	8.0	8.5	8.1
Appendix IV										
Antimony	ug/L	6	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Arsenic	ug/L	10	6	7	7	7	8	9	11	11
Barium	ug/L	2,000	211	139	151	144	162	157	103	171
Beryllium	ug/L	4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Cadmium	ug/L	5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	ug/L	100	2	1	< 1	1	< 1	2	< 1	1
Cobalt	ug/L	15	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Fluoride	ug/L	4,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Lead	ug/L	15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Lithium	ug/L	40	13	13	13	12	14	15	13	16
Mercury	ug/L	2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	100	48	17	24	12	19	15	30	15
Radium-226/228	pCi/L	5.00	0.634	0.395	0.663	< 0.879	0.643	< 0.517	0.476	< 0.571
Selenium	ug/L	50	1	5	4	16	32	25	5	23
Thallium	ug/L	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2

Notes:

ug/L - micrograms per liter; mg/L - milligrams per liter.

pCi/L - picocuries per liter; SU - standard units; pH is a field parameter.

-- - not analyzed.

GWPS - Groundwater Protection Standard. GWPS is the higher of the Maximum Contaminant Level/Regional

Screening Level and Upper Tolerance Limit as established in TRC's Technical Memorandum dated October 15, 2018.

Bold value indicates an exceedance of the GWPS. Data from downgradient monitoring wells are screened against the GWPS for evaluation purposes only. Confidence intervals will be used to determine compliance per the CCR Rules.

All metals were analyzed as total unless otherwise specified.

(1) JHCW-MW-15007, JHC-MW-15009, and JHC-MW-15011 were decommissioned in July 2021. Replacement wells JHC-MW-15007R, JHC-MW-15009R, and JHC-MW-15011R were installed on July 20-22, 2021.

(2) JHC-MW-15008 was decommissioned on June 24, 2019. Replacement well JHC-MW-15008R was installed on June 25, 2019.

Table 1
 Comparison of Groundwater Sampling Results to Groundwater Protection Standards for Statistical Evaluation
 JH Campbell Pond A – RCRA CCR Monitoring Program
 West Olive, Michigan

Sample Location:			JHC-MW-15007R								
Sample Date:			10/21/2021	10/21/2021	4/14/2022	10/18/2022	4/11/2023	10/17/2023	4/16/2024	10/14/2024	4/14/2025
Constituent	Unit	GWPS									
Appendix III				Field Dup							
Boron	ug/L	NA	956	1,000	1,370	1,350	1,290	1,630	1,900	1,500	1,320
Calcium	mg/L	NA	68.5	72.6	66.5	69.5	77.9	68.3	56.6	63.6	71.9
Chloride	mg/L	NA	13.9	14.2	11.3	12.4	13.1	17.0	13.9	17	14.5
Fluoride	ug/L	NA	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Sulfate	mg/L	NA	101	104	69.3	102	143	118	88.4	91.4	87.2
Total Dissolved Solids	mg/L	NA	418	419	355	430	475	453	414	388	415
pH, Field	SU	NA	8.0	--	8.1	8.0	7.7	7.9	8.0	8.1	8.0
Appendix IV											
Antimony	ug/L	6	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Arsenic	ug/L	10	7	7	8	7	5	7	6	6	6
Barium	ug/L	2,000	219	224	215	249	281	233	211	212	249
Beryllium	ug/L	4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Cadmium	ug/L	5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	ug/L	100	1	2	2	< 1	< 1	< 1	1	< 1	< 1
Cobalt	ug/L	15	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Fluoride	ug/L	4,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Lead	ug/L	15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Lithium	ug/L	40	13	13	16	14	15	14	15	15	16
Mercury	ug/L	2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	100	16	16	14	18	23	27	52	35	23
Radium-226/228	pCi/L	5.00	0.583	0.483	0.780	0.786	< 0.608	0.862	0.925	1.08	1.36
Selenium	ug/L	50	4	4	2	7	4	9	8	5	3
Thallium	ug/L	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2

Notes:

ug/L - micrograms per liter; mg/L - milligrams per liter.

pCi/L - picocuries per liter; SU - standard units; pH is a field parameter.

-- not analyzed.

GWPS - Groundwater Protection Standard. GWPS is the higher of the Maximum Contaminant Level/Regional

Screening Level and Upper Tolerance Limit as established in TRC's Technical Memorandum dated October 15, 2018.

Bold value indicates an exceedance of the GWPS. Data from downgradient monitoring wells are screened against the GWPS for evaluation purposes only. Confidence intervals will be used to determine compliance per the CCR Rules.

All metals were analyzed as total unless otherwise specified.

(1) JHCW-MW-15007, JHC-MW-15009, and JHC-MW-15011 were decommissioned in July 2021. Replacement wells

JHC-MW-15007R, JHC-MW-15009R, and JHC-MW-15011R were installed on July 20-22, 2021.

(2) JHC-MW-15008 was decommissioned on June 24, 2019. Replacement well JHC-MW-15008R was installed on June 25, 2019.

Table 1
 Comparison of Groundwater Sampling Results to Groundwater Protection Standards for Statistical Evaluation
 JH Campbell Pond A – RCRA CCR Monitoring Program
 West Olive, Michigan

Sample Location:			JHC-MW-15008R								
Sample Date:			10/21/2021	4/14/2022	10/18/2022	4/10/2023	10/17/2023	4/16/2024	10/14/2024	10/14/2024	4/14/2025
Constituent	Unit	GWPS								Field Dup	
Appendix III											
Boron	ug/L	NA	786	1,320	1,680	1,300	1,260	1,190	1,780	1,840	1,320
Calcium	mg/L	NA	77.2	61.6	71.6	75.7	52.9	56.0	62.8	62.3	80.4
Chloride	mg/L	NA	15.7	12.2	13.6	13.4	15.5	14.7	14.4	14.3	14.5
Fluoride	ug/L	NA	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Sulfate	mg/L	NA	112	80.3	85.3	107	67	80.2	98.5	98.7	117
Total Dissolved Solids	mg/L	NA	443	337	397	402	323	379	380	372	452
pH, Field	SU	NA	7.2	7.1	7.3	6.9	7.2	7.2	7.3	--	7.2
Appendix IV											
Antimony	ug/L	6	1	1	1	1	1	1	1	1	1
Arsenic	ug/L	10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Barium	ug/L	2,000	167	151	167	172	121	142	117	116	150
Beryllium	ug/L	4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Cadmium	ug/L	5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	ug/L	100	< 1	2	< 1	< 1	< 1	1	1	< 1	< 1
Cobalt	ug/L	15	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Fluoride	ug/L	4,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Lead	ug/L	15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Lithium	ug/L	40	19	20	20	18	18	18	19	19	22
Mercury	ug/L	2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	100	26	26	27	27	18	23	27	27	28
Radium-226/228	pCi/L	5.00	0.661	0.485	1.26	< 0.640	< 0.517	0.548	< 0.619	0.991	1.07
Selenium	ug/L	50	20	10	16	6	11	7	12	12	14
Thallium	ug/L	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2

Notes:

ug/L - micrograms per liter; mg/L - milligrams per liter.

pCi/L - picocuries per liter; SU - standard units; pH is a field parameter.

-- - not analyzed.

GWPS - Groundwater Protection Standard. GWPS is the higher of the Maximum Contaminant Level/Regional

Screening Level and Upper Tolerance Limit as established in TRC's Technical Memorandum dated October 15, 2018.

Bold value indicates an exceedance of the GWPS. Data from downgradient monitoring wells are screened against the GWPS for evaluation purposes only. Confidence intervals will be used to determine compliance per the CCR Rules.

All metals were analyzed as total unless otherwise specified.

(1) JHCW-MW-15007, JHC-MW-15009, and JHC-MW-15011 were decommissioned in July 2021. Replacement wells JHC-MW-15007R, JHC-MW-15009R, and JHC-MW-15011R were installed on July 20-22, 2021.

(2) JHC-MW-15008 was decommissioned on June 24, 2019. Replacement well JHC-MW-15008R was installed on June 25, 2019.

Table 1
 Comparison of Groundwater Sampling Results to Groundwater Protection Standards for Statistical Evaluation
 JH Campbell Pond A – RCRA CCR Monitoring Program
 West Olive, Michigan

Sample Location:			JHC-MW-15009R												
Sample Date:			10/21/2021	4/13/2022	10/18/2022	10/18/2022	4/10/2023	4/10/2023	10/17/2023	10/17/2023	4/16/2024	4/16/2024	10/14/2024	4/14/2025	4/14/2025
Constituent	Unit	GWPS													
Appendix III						Field Dup		Field Dup		Field Dup		Field Dup			Field Dup
Boron	ug/L	NA	1,680	1,670	928	969	1,010	1,010	1,230	1,250	2,120	2,080	1,940	2,840	2,830
Calcium	mg/L	NA	58.7	64.8	58.8	59.4	90.8	89.4	74.1	71.5	85.6	83.6	59.9	72.6	71.7
Chloride	mg/L	NA	12.1	15.4	13.3	13.3	9.24	9.88	11.2	11.2	7.46	7.74	13.6	12.5	12.4
Fluoride	ug/L	NA	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Sulfate	mg/L	NA	25.7	38.3	28.1	28.3	57.8	57.9	33.1	32.9	55.7	58.8	28.4	43.1	42.7
Total Dissolved Solids	mg/L	NA	301	292	298	271	368	380	318	310	392	427	264	376	386
pH, Field	SU	NA	7.1	6.9	7.2	--	6.7	--	6.9	--	6.9	--	7.0	6.8	--
Appendix IV															
Antimony	ug/L	6	< 1	< 1	1	< 1	2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Arsenic	ug/L	10	1	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Barium	ug/L	2,000	286	206	225	234	281	282	273	270	342	332	249	274	266
Beryllium	ug/L	4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Cadmium	ug/L	5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	ug/L	100	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1	1	< 1	< 1	< 1
Cobalt	ug/L	15	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Fluoride	ug/L	4,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Lead	ug/L	15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Lithium	ug/L	40	15	15	12	12	14	15	13	13	16	16	12	15	15
Mercury	ug/L	2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	100	5	9	10	9	19	20	9	9	7	7	9	12	11
Radium-226/228	pCi/L	5.00	0.728	0.622	< 0.465	< 0.520	< 0.610	< 0.490	0.969	< 0.491	1.10	< 0.589	0.823	0.823	0.842
Selenium	ug/L	50	62	7	58	64	64	63	155	155	242	238	80	76	73
Thallium	ug/L	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2

Notes:

ug/L - micrograms per liter; mg/L - milligrams per liter.

pCi/L - picocuries per liter; SU - standard units; pH is a field parameter.

-- - not analyzed.

GWPS - Groundwater Protection Standard. GWPS is the higher of the Maximum Contaminant Level/Regional

Screening Level and Upper Tolerance Limit as established in TRC's Technical Memorandum dated October 15, 2018.

Bold value indicates an exceedance of the GWPS. Data from downgradient monitoring wells are screened against the GWPS for evaluation purposes only. Confidence intervals will be used to determine compliance per the CCR Rules.

All metals were analyzed as total unless otherwise specified.

(1) JHCW-MW-15007, JHC-MW-15009, and JHC-MW-15011 were decommissioned in July 2021. Replacement wells JHC-MW-15007R, JHC-MW-15009R, and JHC-MW-15011R were installed on July 20-22, 2021.

(2) JHC-MW-15008 was decommissioned on June 24, 2019. Replacement well JHC-MW-15008R was installed on June 25, 2019.

Table 1
 Comparison of Groundwater Sampling Results to Groundwater Protection Standards for Statistical Evaluation
 JH Campbell Pond A – RCRA CCR Monitoring Program
 West Olive, Michigan

Sample Location:			JHC-MW-15011R ⁽¹⁾								
Sample Date:			10/21/2021	4/13/2022	4/13/2022	10/18/2022	4/11/2023	10/17/2023	4/16/2024	10/14/2024	4/14/2025
Constituent	Unit	GWPS			Field Dup						
Appendix III											
Boron	ug/L	NA	2,150	3,780	3,910	3,050	2,310	3,420	3,400	3,800	4,190
Calcium	mg/L	NA	51.0	57.6	56.2	45.5	79.1	47.2	60.2	47.6	71.4
Chloride	mg/L	NA	13.5	14.6	14.6	9.79	8.05	8.27	6.83	6.60	5.61
Fluoride	ug/L	NA	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Sulfate	mg/L	NA	45.0	56.6	56.3	46.2	87.5	56.7	63.9	53.7	94.4
Total Dissolved Solids	mg/L	NA	195	276	269	253	373	238	335	225	343
pH, Field	SU	NA	8.0	7.0	--	7.7	6.8	7.0	7.0	6.9	6.8
Appendix IV											
Antimony	ug/L	6	< 1	1	1	< 1	2	< 1	2	< 1	1
Arsenic	ug/L	10	3	7	7	11	5	7	8	5	4
Barium	ug/L	2000	131	197	203	185	342	264	382	294	387
Beryllium	ug/L	4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Cadmium	ug/L	5	< 0.2	0.2	0.2	< 0.2	0.2	< 0.2	0.3	< 0.2	0.4
Chromium	ug/L	100	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Cobalt	ug/L	15	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Fluoride	ug/L	4,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Lead	ug/L	15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Lithium	ug/L	40	< 10	18	19	16	23	17	23	17	22
Mercury	ug/L	2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	100	13	16	15	16	21	19	18	11	11
Radium-226/228	pCi/L	5.00	0.585	0.434	0.402	< 0.462	< 0.552	0.547	0.674	< 0.687	1.93
Selenium	ug/L	50	4	40	40	76	64	79	77	60	140
Thallium	ug/L	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2

Notes:

ug/L - micrograms per liter; mg/L - milligrams per liter.

pCi/L - picocuries per liter; SU - standard units; pH is a field parameter.

-- - not analyzed.

GWPS - Groundwater Protection Standard. GWPS is the higher of the Maximum Contaminant Level/Regional

Screening Level and Upper Tolerance Limit as established in TRC's Technical Memorandum dated October 15, 2018.

Bold value indicates an exceedance of the GWPS. Data from downgradient monitoring wells are screened against the GWPS for evaluation purposes only. Confidence intervals will be used to determine compliance per the CCR Rules.

All metals were analyzed as total unless otherwise specified.

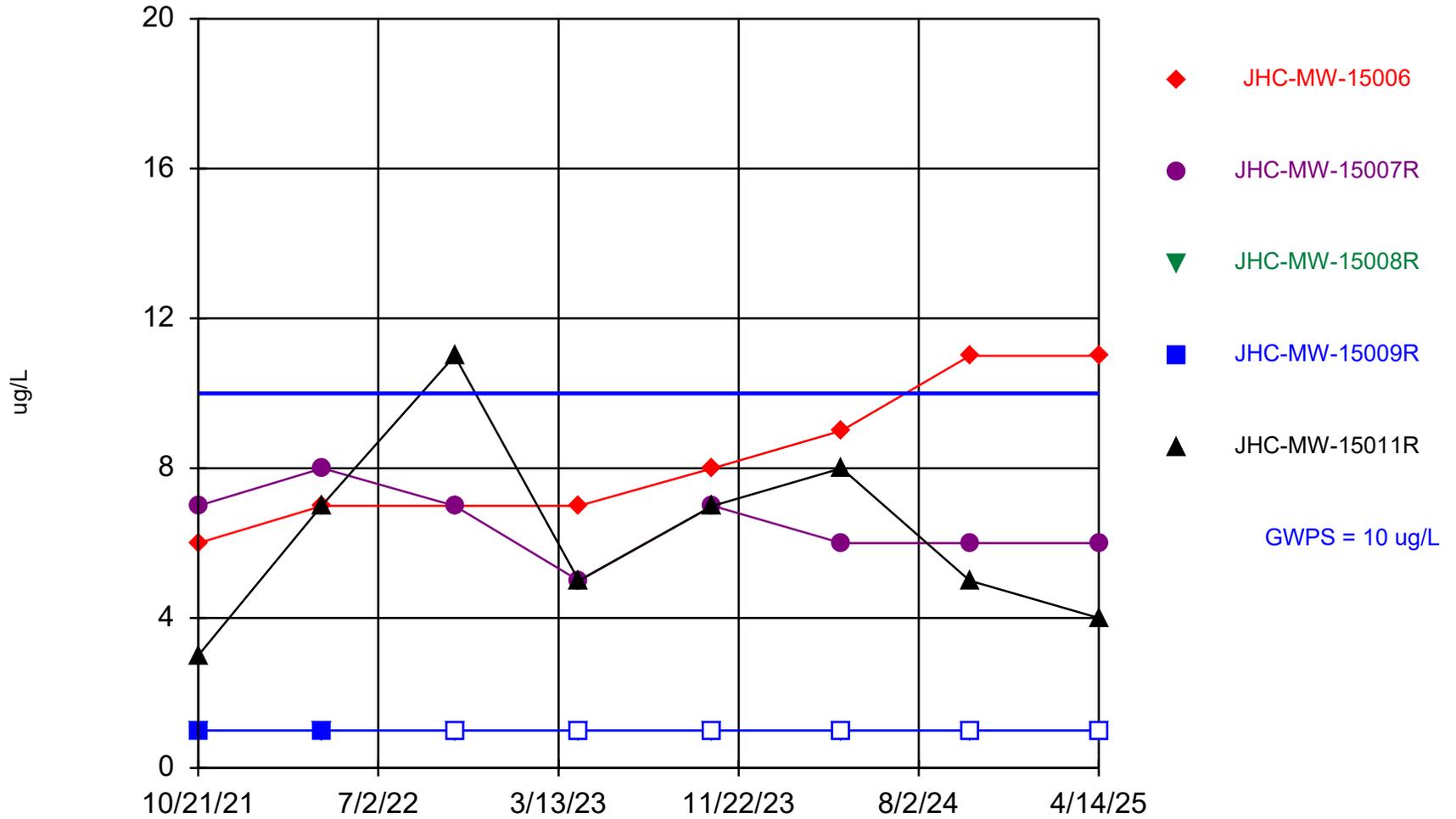
(1) JHCW-MW-15007, JHC-MW-15009, and JHC-MW-15011 were decommissioned in July 2021. Replacement wells JHC-MW-15007R, JHC-MW-15009R, and JHC-MW-15011R were installed on July 20-22, 2021.

(2) JHC-MW-15008 was decommissioned on June 24, 2019. Replacement well JHC-MW-15008R was installed on June 25, 2019.

Attachment 1

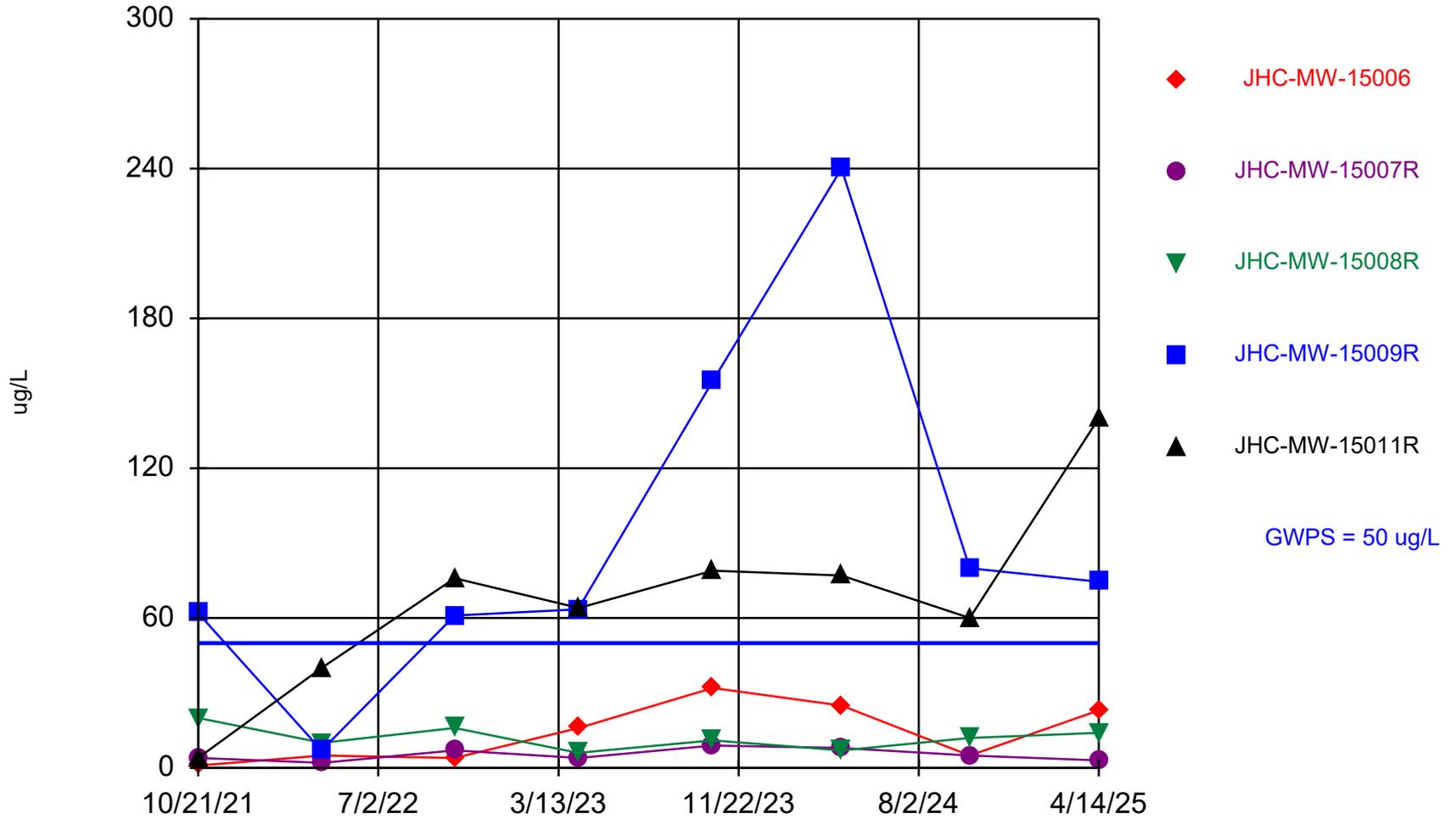
Sanitas™ Output

Arsenic Comparison to GWPS



Time Series Analysis Run 6/4/2025 8:44 PM
Client: Consumers Energy Data: JHC_2Q25

Selenium Comparison to GWPS



Time Series Analysis Run 6/4/2025 8:46 PM

Client: Consumers Energy Data: JHC_2Q25

Summary Report

Constituent: Arsenic, Total Analysis Run 6/4/2025 8:46 PM
 Client: Consumers Energy Data: JHC_2Q25

For observations made between 10/21/2021 and 4/14/2025, a summary of the selected data set:

Observations = 40
 NDs = 35%
 Wells = 5
 Minimum Value = 1
 Maximum Value = 11
 Mean Value = 4.6
 Median Value = 5
 Standard Deviation = 3.365
 Coefficient of Variation = 0.7315
 Skewness = 0.2457

<u>Well</u>	<u>#Obs.</u>	<u>NDs</u>	<u>Min</u>	<u>Max</u>	<u>Mean</u>	<u>Median</u>	<u>Std.Dev.</u>	<u>CV</u>	<u>Skewness</u>
JHC-MW-15006	8	0%	6	11	8.25	7.5	1.909	0.2313	0.5436
JHC-MW-15007R	8	0%	5	8	6.5	6.5	0.9258	0.1424	0
JHC-MW-15008R	8	100%	1	1	1	1	0	0	NaN
JHC-MW-15009R	8	75%	1	1	1	1	0	0	NaN
JHC-MW-15011R	8	0%	3	11	6.25	6	2.55	0.4079	0.5875

Summary Report

Constituent: Selenium, Total Analysis Run 6/4/2025 8:47 PM
 Client: Consumers Energy Data: JHC_2Q25

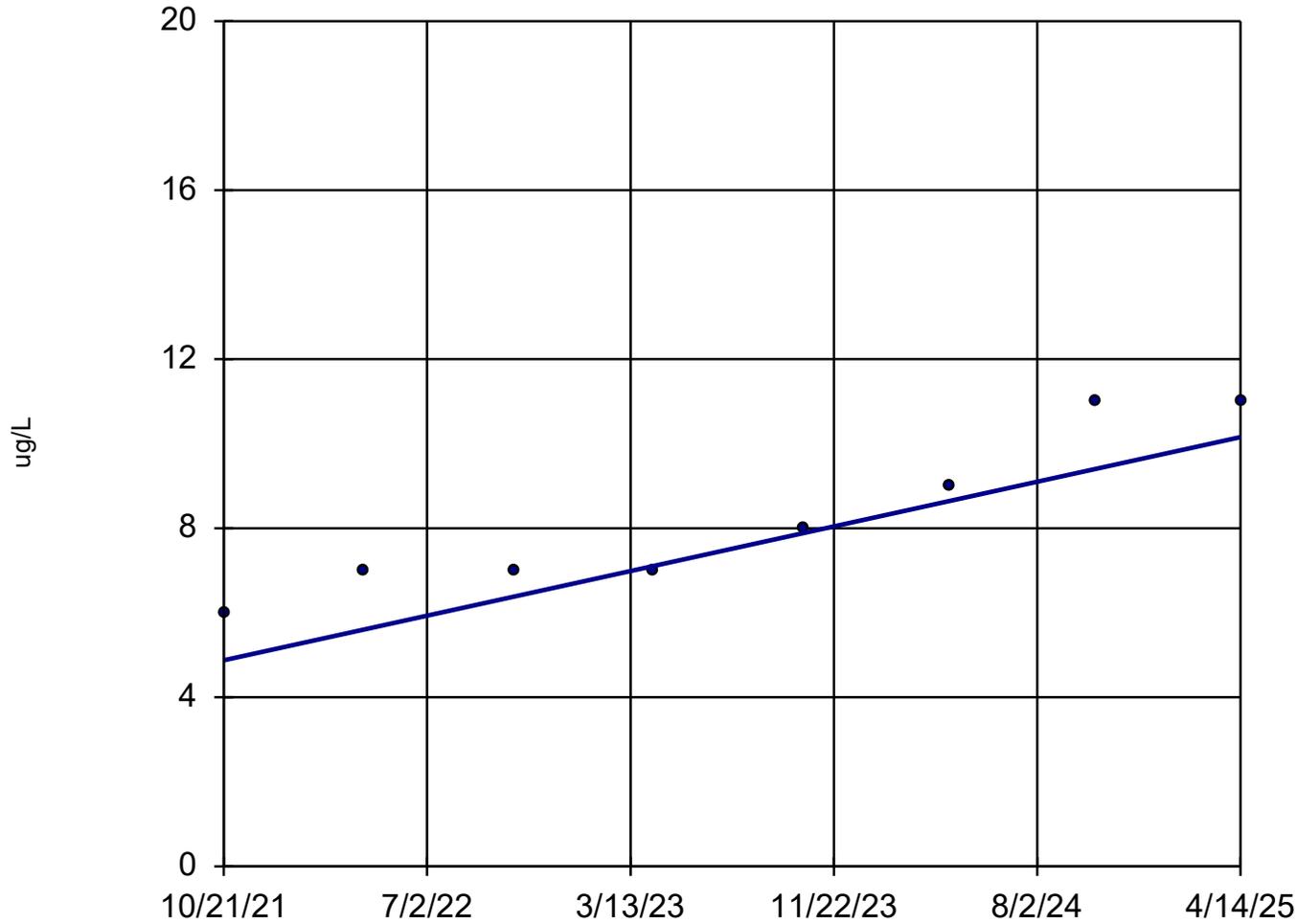
For observations made between 10/21/2021 and 4/14/2025, a summary of the selected data set:

Observations = 40
 NDs = 0%
 Wells = 5
 Minimum Value = 1
 Maximum Value = 240
 Mean Value = 38.3
 Median Value = 15
 Standard Deviation = 49.99
 Coefficient of Variation = 1.305
 Skewness = 2.184

<u>Well</u>	<u>#Obs.</u>	<u>NDs</u>	<u>Min</u>	<u>Max</u>	<u>Mean</u>	<u>Median</u>	<u>Std.Dev.</u>	<u>CV</u>	<u>Skewness</u>
JHC-MW-15006	8	0%	1	32	13.88	10.5	11.72	0.8444	0.3424
JHC-MW-15007R	8	0%	2	9	5.25	4.5	2.493	0.4748	0.2884
JHC-MW-15008R	8	0%	6	20	12	11.5	4.629	0.3858	0.3603
JHC-MW-15009R	8	0%	7	240	92.88	69	71.93	0.7745	1.106
JHC-MW-15011R	8	0%	4	140	67.5	70	38.56	0.5713	0.2844

Arsenic, Total

JHC-MW-15006



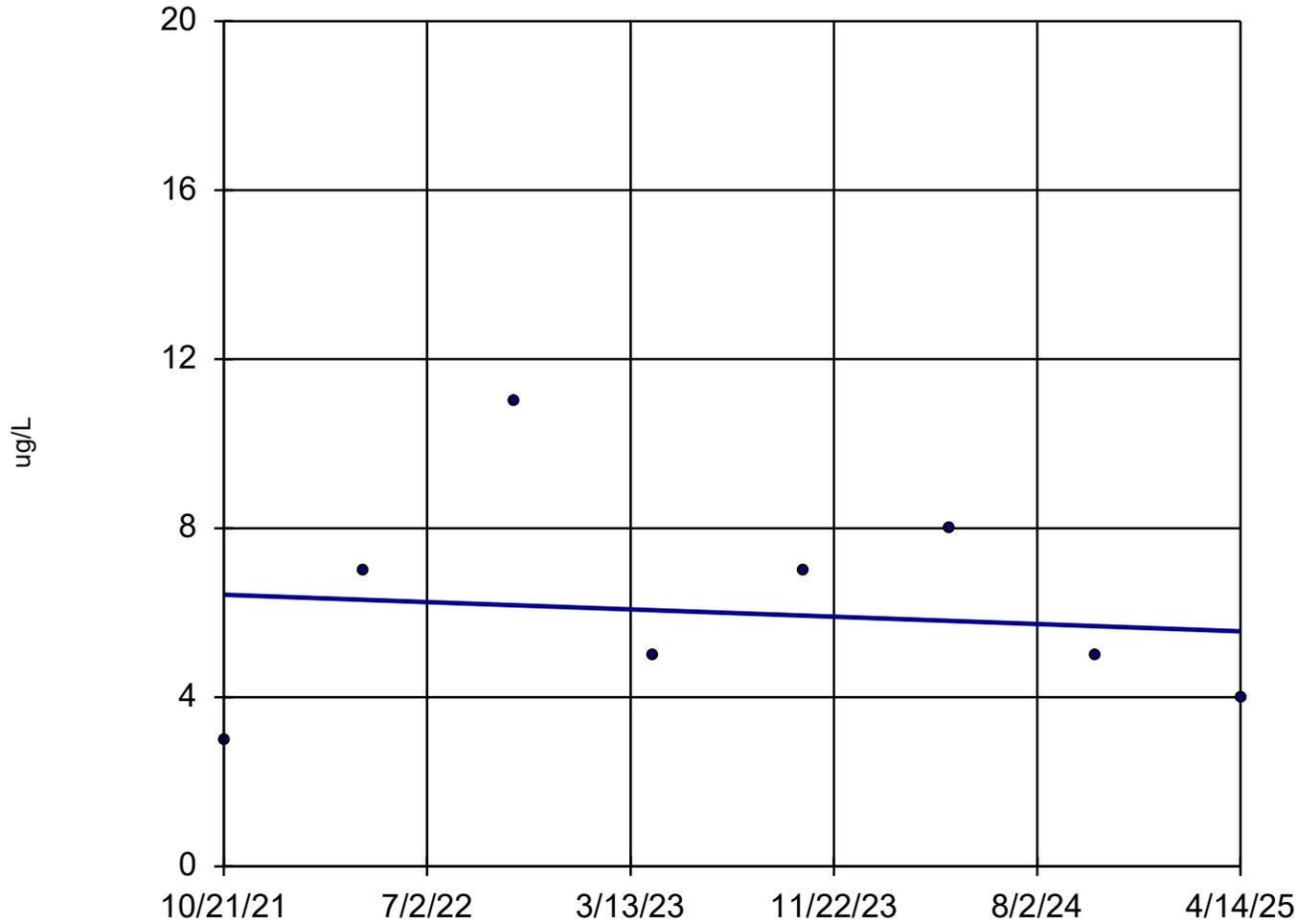
n = 8
Slope = 1.517
units per year.
Mann-Kendall
statistic = 24
critical = 20
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Sen's Slope Estimator Analysis Run 6/4/2025 8:49 PM

Client: Consumers Energy Data: JHC_2Q25

Arsenic, Total

JHC-MW-15011R

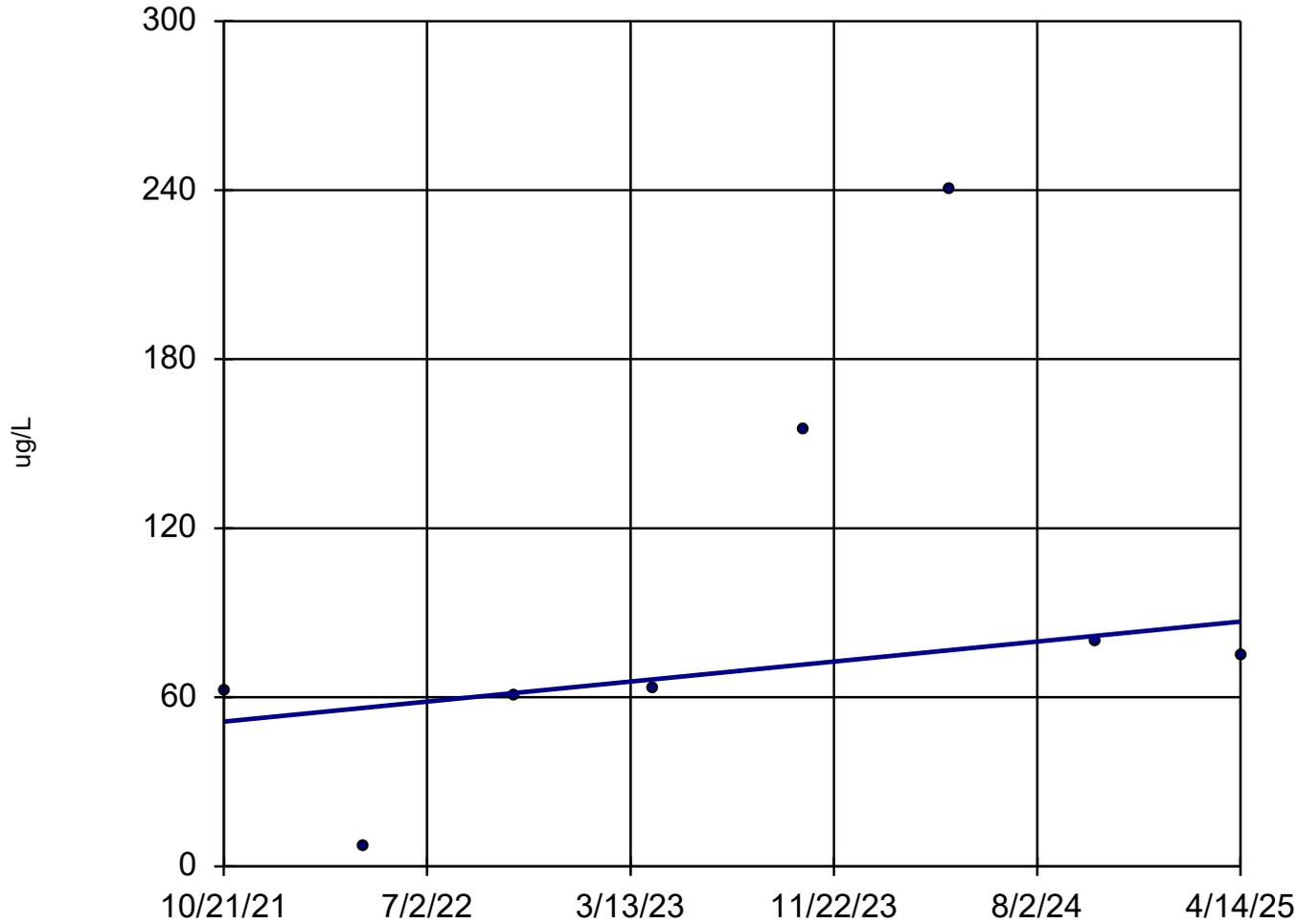


n = 8
Slope = -0.2486
units per year.
Mann-Kendall
statistic = -2
critical = -20
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Sen's Slope Estimator Analysis Run 6/4/2025 8:49 PM
Client: Consumers Energy Data: JHC_2Q25

Selenium, Total

JHC-MW-15009R

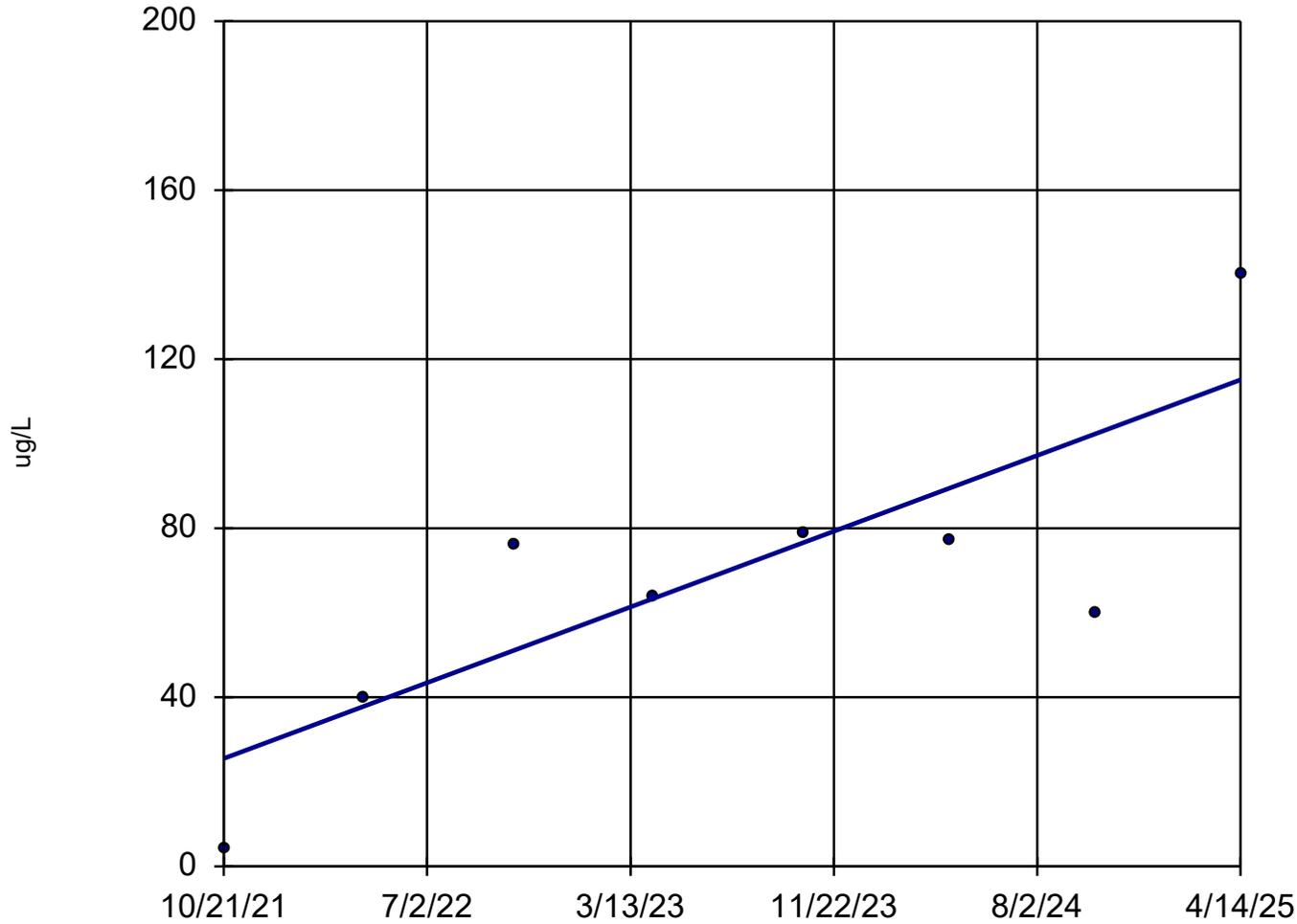


n = 8
Slope = 10.21
units per year.
Mann-Kendall
statistic = 14
critical = 20
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Sen's Slope Estimator Analysis Run 6/4/2025 8:49 PM
Client: Consumers Energy Data: JHC_2Q25

Selenium, Total

JHC-MW-15011R

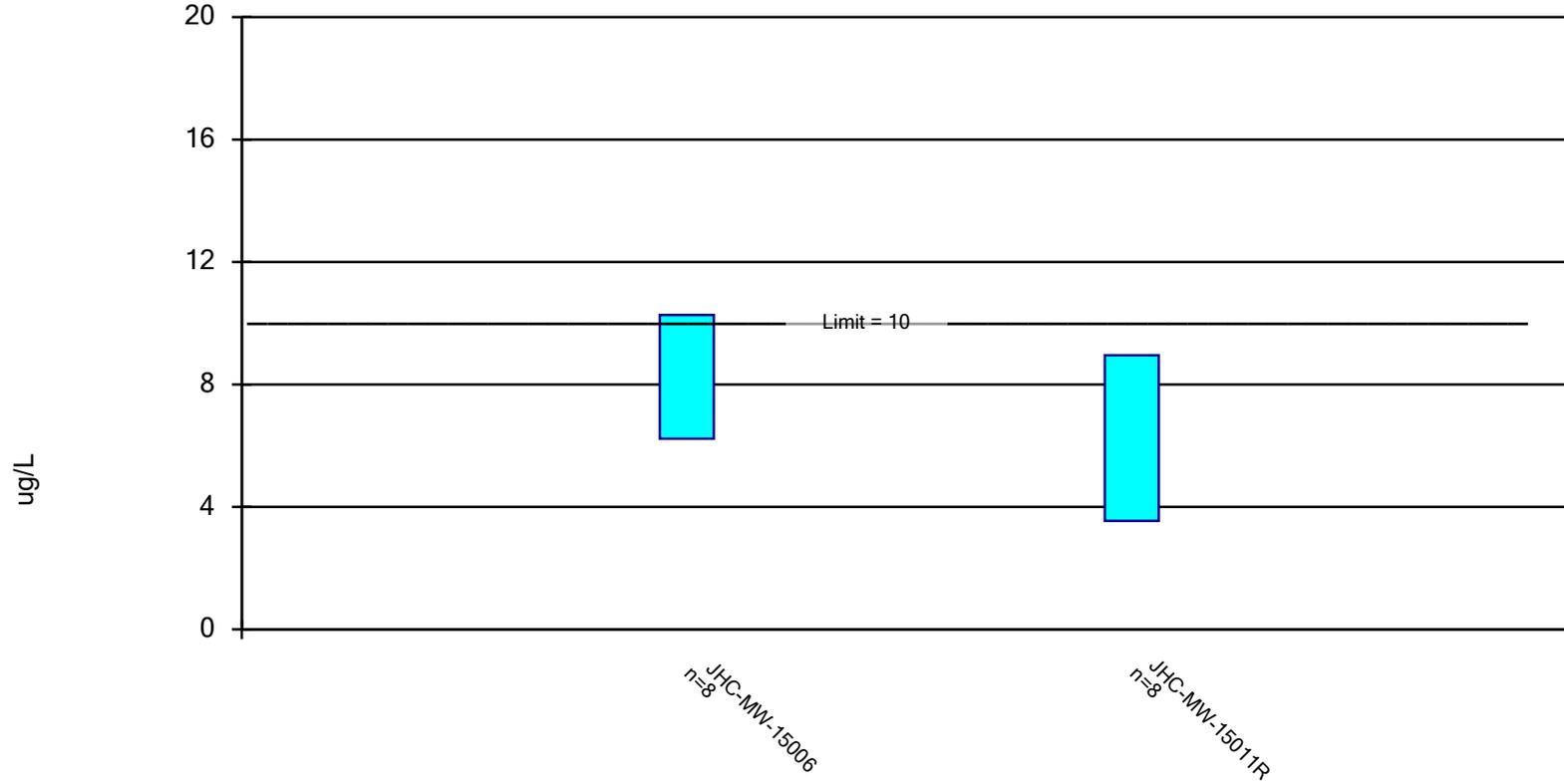


n = 8
Slope = 25.74
units per year.
Mann-Kendall
statistic = 16
critical = 20
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Sen's Slope Estimator Analysis Run 6/4/2025 8:50 PM
Client: Consumers Energy Data: JHC_2Q25

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic, Total Analysis Run 6/4/2025 9:24 PM

Client: Consumers Energy Data: JHC_2Q25

Confidence Interval

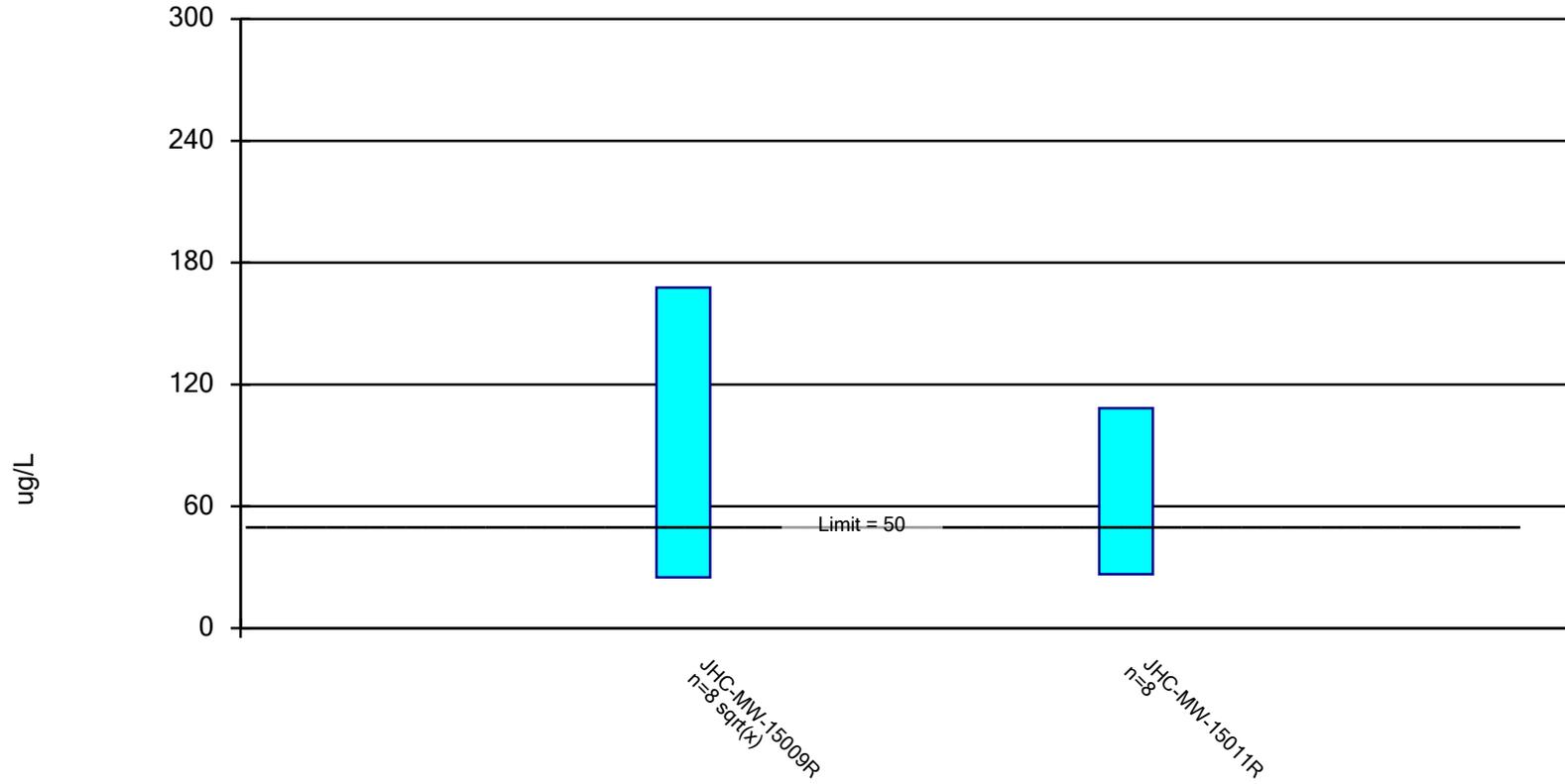
Constituent: Arsenic, T Total (ug/L) Analysis Run 6/4/2025 9:24 PM

Client: Consumers Energy Data: JHC_2Q25

	JHC-MW-15006	JHC-MW-15011R
10/21/2021	6	3
4/13/2022		7 (D)
4/14/2022	7	
10/18/2022	7	11
4/11/2023	7	5
10/17/2023	8	7
4/16/2024	9	8
10/14/2024	11	5
4/14/2025	11	4
Mean	8.25	6.25
Std. Dev.	1.909	2.55
Upper Lim.	10.27	8.952
Lower Lim.	6.227	3.548

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium, Total Analysis Run 6/4/2025 9:24 PM

Client: Consumers Energy Data: JHC_2Q25

Confidence Interval

Constituent: Selenium, Total (ug/L) Analysis Run 6/4/2025 9:24 PM

Client: Consumers Energy Data: JHC_2Q25

	JHC-MW-15009R	JHC-MW-15011R
10/21/2021	62	4
4/13/2022	7	40 (D)
10/18/2022	61 (D)	76
4/10/2023	63.5 (D)	
4/11/2023		64
10/17/2023	155 (D)	79
4/16/2024	240 (D)	77
10/14/2024	80	60
4/14/2025	74.5 (D)	140
Mean	92.88	67.5
Std. Dev.	71.93	38.56
Upper Lim.	167.7	108.4
Lower Lim.	25.05	26.63

Appendix E
Statistical Evaluation of October 2025
Assessment Monitoring Sampling Event



Technical Memorandum

Date: January 30, 2026

To: Harold D. Register, Jr., Consumers Energy

From: Sarah Holmstrom, TRC
Kristin Lowery, TRC

Project No.: 634689.0000.0000 Phase 1 Task 2

Subject: Statistical Evaluation of October 2025 Assessment Monitoring Sampling Event,
JH Campbell Bottom Ash Pond A CCR Unit, Consumers Energy Company, West
Olive, Michigan

Consumers Energy is continuing semiannual assessment monitoring in accordance with §257.95 of the CCR Rule¹ at the JH Campbell Power Plant (JHC) Bottom Ash Pond A. The second semiannual assessment monitoring event of 2025 was conducted from October 7 through 9, 2025. In accordance with §257.95, the assessment monitoring data must be compared to Groundwater Protection Standards (GWPSs) to determine whether or not Appendix IV constituents are detected at statistically significant levels above the GWPSs. GWPSs were established in accordance with §257.95(h), as detailed in the October 15, 2018 Groundwater Protection Standards technical memorandum, which was also included in the 2018 Annual Groundwater Monitoring Report (2018 Annual Report) (TRC, January 2019). The following narrative describes the methods that were employed for comparisons to the GWPSs. The results obtained and the Sanitas™ output files are included as an attachment.

The statistical evaluation of the second semiannual assessment monitoring event for 2025 indicates that no constituents are present at statistically significant levels exceeding the GWPSs in downgradient monitoring wells at the Pond A CCR Unit.

<u>Constituent</u>	<u>GWPS</u>	<u># Downgradient Wells Observed</u>
--------------------	-------------	--------------------------------------

No constituents are present at statistically significant levels above the GWPSs.

These results are generally consistent with the results of the previous assessment monitoring data statistical evaluation, with no new statistically significant levels above the GWPSs. Consumers Energy will continue to evaluate corrective measures per §257.96 and §257.97. Consumers Energy will continue executing the self-implementing groundwater compliance schedule in conformance with §257.90 - §257.98.

¹ USEPA final rule for the regulation and management of Coal Combustion Residuals (CCR) under the Resource Conservation and Recovery Act (RCRA) published April 17, 2015, as amended.

Technical Memorandum

Assessment Monitoring Statistical Evaluation

The downgradient compliance well network at Pond A consists of five wells (JHC-MW-15006, JHC-MW-15007R, JHC-MW-15008R, JHC-MW-15009R and JHC-MW-150011R) located south and east of Pond A.²

Following the second semiannual assessment monitoring sampling event for 2025, compliance well data for Pond A were evaluated in accordance with the Groundwater Statistical Evaluation Plan (Stats Plan) (TRC, October 2017). The assessment monitoring program was developed to evaluate concentrations of CCR constituents present in the uppermost aquifer relative to acceptable levels (i.e. GWPSs). To evaluate whether or not a GWPS exceedance is statistically significant, the difference in concentration observed at the downgradient wells during a given assessment monitoring event compared to the GWPS must be large enough, after accounting for variability in the sample data, that the result is unlikely to have occurred merely by chance. Consistent with the Unified Guidance³, the preferred method for comparisons to a fixed standard is confidence limits. An exceedance of the standard occurs when the 99 percent lower confidence level of the downgradient data exceeds the GWPS. Based on the number of historical observations in the representative sample population, the sample mean, the sample standard deviation, and a selected confidence level (i.e. 99 percent), an upper and lower confidence limit is calculated. The actual mean concentration of the population, with 99 percent confidence, will fall between the lower and upper confidence limits.

The concentrations observed in the downgradient wells are deemed to be a statistically significant exceedance when the 99 percent lower confidence limit of the downgradient data exceeds the GWPS. If the confidence interval straddles the GWPS (i.e. the lower confidence level is below the GWPS but the upper confidence level is above), the statistical test result indicates that there is insufficient confidence that the measured concentrations are different from the GWPS and thus there is no compelling evidence that the measured concentration is a result of a release from the CCR unit versus the inherent variability of the sample data. This statistical approach is consistent with the statistical methods for assessment monitoring presented in §257.93(f) and (g). Statistical evaluation methodologies built into the CCR Rule, and numerous other federal rules, are key in determining whether or not individually measured data points represent a concentration increase over the baseline or a fixed standard (such as a GWPS in an assessment monitoring program).

For each detected Appendix IV constituent, the concentrations for each well were first compared directly to the GWPS, as shown on Table 1. Constituent-well combinations that included a direct exceedance of the GWPS within the past eight monitoring events (April 2022 through October 2025) were retained for further analysis (Attachment 1). Direct comparison GWPS exceedances included the following constituent-well combinations:

- Arsenic at JHC-MW-15006;

² As discussed in the 2019 Annual Groundwater Monitoring and Corrective Action Report and Fourth Quarter 2019 Hydrogeological Monitoring Report for the Pond A CCR Unit dated January 2020, monitoring well JHC-MW-15008 was decommissioned and replacement monitoring well JHC-MW-15008R was installed in June 2019. As detailed in the 2021 Annual Groundwater Monitoring and Corrective Action Report, JH Campbell Power Plant, Pond A (TRC, January 2022), monitoring wells JHC-MW-15007, JHC-MW-15009, and JHC-MW-15011 were decommissioned and replacement monitoring wells JHC-MW-15007R, JHC-MW-15009R, and JHC-MW-15011R were installed in July 2021 and JHC-MW-15010 was removed from the monitoring program. Statistical evaluation, i.e., trend or confidence interval analysis, were completed using only data from the replacement wells.

³ USEPA. 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance*. Office of Conservation and Recovery. EPA 530/R-09-007.

Technical Memorandum

- Selenium at JHC-MW-15009R; and,
- Arsenic and selenium at JHC-MW-15011R.

Groundwater data for the constituent-well combinations with direct-comparison exceedances of a GWPS were then evaluated utilizing Sanitas™ statistical software. Sanitas™ is a software tool that is commercially available for performing statistical evaluation consistent with procedures outlined in the Unified Guidance. Within the Sanitas™ statistical program, confidence limits were used to perform the statistical comparison of compliance data to a fixed standard. Parametric or non-parametric confidence intervals were calculated, as appropriate, for each of the CCR Appendix IV parameters using a 99 percent confidence level, i.e., a significance level (α) of 0.01. The following narrative describes the methods employed, the results obtained and the Sanitas™ output files are included as an attachment.

The statistical data evaluation included the following steps:

- Review of data quality checklists for the data sets;
- Graphical representation of the monitoring data as time versus concentration by well-constituent pair;
- Outlier testing of individual data points that appear from the graphical representations as potential outliers;
- Evaluation of visual trends apparent in the graphical representations for statistical significance;
- Evaluation of percentage of non-detects for each well-constituent pair;
- Distribution of the data; and
- Calculation of the confidence intervals for each cumulative dataset.

The results of these evaluations are presented and discussed below.

Data from each round were evaluated for completeness, overall quality, and usability and were deemed appropriate for the purposes of the CCR assessment monitoring program.

Initially, the results for these well-constituent pairs were observed visually for potential outliers and trends. No outliers were apparent. Visual trends were observed for multiple data sets (time-series plots in Attachment 1). The increasing trend for arsenic at JHC-MW-15006 was found to be significant. Groundwater conditions are re-equilibrating following capping activities at Pond A that were completed in Summer 2019. Because hydrogeologic conditions are in the process of stabilizing, temporary trending and sporadic outlier data are not unexpected. Therefore, all data is used in the statistical evaluation.

The Sanitas™ software was then used to test compliance at the downgradient monitoring wells using the confidence interval method for the most recent eight compliance events. Eight independent sampling events provide the appropriate density of data as recommended per the Unified Guidance yet are collected recently enough to provide an indication of current condition. The tests were run with a per-well significance of $\alpha = 0.01$. The software outputs are included in Attachment 1 along with data reports showing the values used for the evaluation. Non-detect data was handled in accordance with the Stats Plan for the purposes of calculating the confidence intervals.

Technical Memorandum

The Sanitas™ software generates an output that includes graphs of the parametric or non-parametric confidence intervals for each well along with notes on data transformations, as appropriate. Data distributions were as follows:

Distribution	Parameter-Well Combinations
Normal	Arsenic at JHC-MW-15011R Selenium at JHC-MW-15009R
Normalized by square root transformation	Selenium at JHC-MW-15011R
Non-Parametric (not able to be normalized)	Arsenic at JHC-MW-15006

The confidence interval test compares the lower confidence limit to the GWPS. The statistical evaluation of the Appendix IV constituents shows no statistically significant exceedances of the GWPSs. Consumers Energy will continue executing the self-implementing groundwater compliance schedule in conformance with §257.90 - §257.98.

Attachments

- Table 1 Comparison of Groundwater Sampling Results to Groundwater Protection Standards for Statistical Evaluation
- Attachment 1 Sanitas™ Output

Table

Table 1
 Comparison of Groundwater Sampling Results to Groundwater Protection Standards for Statistical Evaluation
 JH Campbell Pond A – RCRA CCR Monitoring Program
 West Olive, Michigan

Sample Location:			JHC-MW-15006							
Sample Date:			4/14/2022	10/18/2022	4/11/2023	10/17/2023	4/16/2024	10/14/2024	4/14/2025	10/8/2025
Constituent	Unit	GWPS								
Appendix III										
Boron	ug/L	NA	676	765	670	757	609	695	600	609
Calcium	mg/L	NA	59.2	67.2	68.8	75.7	67.8	52.8	74.4	69.1
Chloride	mg/L	NA	17.0	18.3	13.3	18.3	12.5	17.0	11.8	14.0
Fluoride	ug/L	NA	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Sulfate	mg/L	NA	101	179	98.3	204	80.6	78.5	100	81.5
Total Dissolved Solids	mg/L	NA	341	458	385	552	393	308	418	415
pH, Field	SU	NA	7.8	8.3	7.8	8.2	8.0	8.5	8.1	8.2
Appendix IV										
Antimony	ug/L	6	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Arsenic	ug/L	10	7	7	7	8	9	11	11	12
Barium	ug/L	2,000	139	151	144	162	157	103	171	152
Beryllium	ug/L	4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Cadmium	ug/L	5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	ug/L	100	1	< 1	1	< 1	2	< 1	1	1
Cobalt	ug/L	15	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Fluoride	ug/L	4,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Lead	ug/L	15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Lithium	ug/L	40	13	13	12	14	15	13	16	15
Mercury	ug/L	2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	100	17	24	12	19	15	30	15	16
Radium-226/228	pCi/L	5.00	0.395	0.663	< 0.879	0.643	< 0.517	0.476	< 0.571	< 0.589
Selenium	ug/L	50	5	4	16	32	25	5	23	21
Thallium	ug/L	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2

Notes:

ug/L - micrograms per liter; mg/L - milligrams per liter.

pCi/L - picocuries per liter; SU - standard units; pH is a field parameter.

-- - not analyzed.

GWPS - Groundwater Protection Standard. GWPS is the higher of the Maximum Contaminant Level/Regional

Screening Level and Upper Tolerance Limit as established in TRC's Technical Memorandum dated October 15, 2018.

Bold value indicates an exceedance of the GWPS. Data from downgradient monitoring wells are screened against the GWPS for evaluation purposes only. Confidence intervals will be used to determine compliance per the CCR Rules.

All metals were analyzed as total unless otherwise specified.

Table 1
 Comparison of Groundwater Sampling Results to Groundwater Protection Standards for Statistical Evaluation
 JH Campbell Pond A – RCRA CCR Monitoring Program
 West Olive, Michigan

Sample Location:			JHC-MW-15007R							
Sample Date:			4/14/2022	10/18/2022	4/11/2023	10/17/2023	4/16/2024	10/14/2024	4/14/2025	10/8/2025
Constituent	Unit	GWPS								
Appendix III										
Boron	ug/L	NA	1,370	1,350	1,290	1,630	1,900	1,500	1,320	1,260
Calcium	mg/L	NA	66.5	69.5	77.9	68.3	56.6	63.6	71.9	73.6
Chloride	mg/L	NA	11.3	12.4	13.1	17.0	13.9	17.0	14.5	13.4
Fluoride	ug/L	NA	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Sulfate	mg/L	NA	69.3	102	143	118	88.4	91.4	87.2	83.6
Total Dissolved Solids	mg/L	NA	355	430	475	453	414	388	415	431
pH, Field	SU	NA	8.1	8.0	7.7	7.9	8.0	8.1	8.0	8.0
Appendix IV										
Antimony	ug/L	6	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Arsenic	ug/L	10	8	7	5	7	6	6	6	6
Barium	ug/L	2,000	215	249	281	233	211	212	249	252
Beryllium	ug/L	4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Cadmium	ug/L	5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	ug/L	100	2	< 1	< 1	< 1	1	< 1	< 1	1
Cobalt	ug/L	15	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Fluoride	ug/L	4,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Lead	ug/L	15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Lithium	ug/L	40	16	14	15	14	15	15	16	15
Mercury	ug/L	2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	100	14	18	23	27	52	35	23	21
Radium-226/228	pCi/L	5.00	0.780	0.786	< 0.608	0.862	0.925	1.08	1.36	0.781
Selenium	ug/L	50	2	7	4	9	8	5	3	7
Thallium	ug/L	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2

Notes:

ug/L - micrograms per liter; mg/L - milligrams per liter.

pCi/L - picocuries per liter; SU - standard units; pH is a field parameter.

-- - not analyzed.

GWPS - Groundwater Protection Standard. GWPS is the higher of the Maximum Contaminant Level/Regional

Screening Level and Upper Tolerance Limit as established in TRC's Technical Memorandum dated October 15, 2018.

Bold value indicates an exceedance of the GWPS. Data from downgradient monitoring wells are screened against the GWPS for evaluation purposes only. Confidence intervals will be used to determine compliance per the CCR Rules.

All metals were analyzed as total unless otherwise specified.

Table 1
 Comparison of Groundwater Sampling Results to Groundwater Protection Standards for Statistical Evaluation
 JH Campbell Pond A – RCRA CCR Monitoring Program
 West Olive, Michigan

Sample Location:			JHC-MW-15008R								
Sample Date:			4/14/2022	10/18/2022	4/10/2023	10/17/2023	4/16/2024	10/14/2024	10/14/2024	4/14/2025	10/7/2025
Constituent	Unit	GWPS									
Appendix III									Field Dup		
Boron	ug/L	NA	1,320	1,680	1,300	1,260	1,190	1,780	1,840	1,320	1,220
Calcium	mg/L	NA	61.6	71.6	75.7	52.9	56.0	62.8	62.3	80.4	72.8
Chloride	mg/L	NA	12.2	13.6	13.4	15.5	14.7	14.4	14.3	14.5	10.4
Fluoride	ug/L	NA	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Sulfate	mg/L	NA	80.3	85.3	107	67.0	80.2	98.5	98.7	117	57.0
Total Dissolved Solids	mg/L	NA	337	397	402	323	379	380	372	452	386
pH, Field	SU	NA	7.1	7.3	6.9	7.2	7.2	7.3	--	7.2	7.2
Appendix IV											
Antimony	ug/L	6	1	1	1	1	1	1	1	1	1
Arsenic	ug/L	10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Barium	ug/L	2,000	151	167	172	121	142	117	116	150	138
Beryllium	ug/L	4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Cadmium	ug/L	5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	ug/L	100	2	< 1	< 1	< 1	1	1	< 1	< 1	< 1
Cobalt	ug/L	15	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Fluoride	ug/L	4,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Lead	ug/L	15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Lithium	ug/L	40	20	20	18	18	18	19	19	22	20
Mercury	ug/L	2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	100	26	27	27	18	23	27	27	28	20
Radium-226/228	pCi/L	5.00	0.485	1.26	< 0.640	< 0.517	0.548	< 0.619	0.991	1.07	1.01
Selenium	ug/L	50	10	16	6	11	7	12	12	14	24
Thallium	ug/L	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2

Notes:

ug/L - micrograms per liter; mg/L - milligrams per liter.

pCi/L - picocuries per liter; SU - standard units; pH is a field parameter.

-- - not analyzed.

GWPS - Groundwater Protection Standard. GWPS is the higher of the Maximum Contaminant Level/Regional

Screening Level and Upper Tolerance Limit as established in TRC's Technical Memorandum dated October 15, 2018.

Bold value indicates an exceedance of the GWPS. Data from downgradient monitoring wells are screened against the GWPS for evaluation purposes only. Confidence intervals will be used to determine compliance per the CCR Rules.

All metals were analyzed as total unless otherwise specified.

Table 1
 Comparison of Groundwater Sampling Results to Groundwater Protection Standards for Statistical Evaluation
 JH Campbell Pond A – RCRA CCR Monitoring Program
 West Olive, Michigan

Sample Location:			JHC-MW-15009R													
Sample Date:			4/13/2022	10/18/2022	10/18/2022	4/10/2023	4/10/2023	10/17/2023	10/17/2023	4/16/2024	4/16/2024	10/14/2024	4/14/2025	4/14/2025	10/7/2025	10/7/2025
Constituent	Unit	GWPS														
Appendix III					Field Dup		Field Dup		Field Dup		Field Dup		Field Dup		Field Dup	
Boron	ug/L	NA	1,670	928	969	1,010	1,010	1,230	1,250	2,120	2,080	1,940	2,840	2,830	1,890	1,890
Calcium	mg/L	NA	64.8	58.8	59.4	90.8	89.4	74.1	71.5	85.6	83.6	59.9	72.6	71.7	74.4	75.1
Chloride	mg/L	NA	15.4	13.3	13.3	9.24	9.88	11.2	11.2	7.46	7.74	13.6	12.5	12.4	12.9	13.3
Fluoride	ug/L	NA	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Sulfate	mg/L	NA	38.3	28.1	28.3	57.8	57.9	33.1	32.9	55.7	58.8	28.4	43.1	42.7	37.8	37.8
Total Dissolved Solids	mg/L	NA	292	298	271	368	380	318	310	392	427	264	376	386	331	363
pH, Field	SU	NA	6.9	7.2	--	6.7	--	6.9	--	6.9	--	7.0	6.8	--	6.9	--
Appendix IV																
Antimony	ug/L	6	< 1	1	< 1	2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Arsenic	ug/L	10	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Barium	ug/L	2,000	206	225	234	281	282	273	270	342	332	249	274	266	240	244
Beryllium	ug/L	4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Cadmium	ug/L	5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	ug/L	100	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1	1	< 1	< 1	< 1	< 1	< 1
Cobalt	ug/L	15	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Fluoride	ug/L	4,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Lead	ug/L	15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Lithium	ug/L	40	15	12	12	14	15	13	13	16	16	12	15	15	13	14
Mercury	ug/L	2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	100	9	10	9	19	20	9	9	7	7	9	12	11	17	16
Radium-226/228	pCi/L	5.00	0.622	< 0.465	< 0.520	< 0.610	< 0.490	0.969	< 0.491	1.10	< 0.589	0.823	0.823	0.842	1.74	1.54
Selenium	ug/L	50	7	58	64	64	63	155	155	242	238	80	76	73	106	110
Thallium	ug/L	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2

Notes:

ug/L - micrograms per liter; mg/L - milligrams per liter.

pCi/L - picocuries per liter; SU - standard units; pH is a field parameter.

-- - not analyzed.

GWPS - Groundwater Protection Standard. GWPS is the higher of the Maximum Contaminant Level/Regional

Screening Level and Upper Tolerance Limit as established in TRC's Technical Memorandum dated October 15, 2018.

Bold value indicates an exceedance of the GWPS. Data from downgradient monitoring wells are screened against the GWPS for evaluation purposes only. Confidence intervals will be used to determine compliance per the CCR Rules.

All metals were analyzed as total unless otherwise specified.

Table 1
 Comparison of Groundwater Sampling Results to Groundwater Protection Standards for Statistical Evaluation
 JH Campbell Pond A – RCRA CCR Monitoring Program
 West Olive, Michigan

Sample Location:			JHC-MW-15011R								
Sample Date:			4/13/2022	4/13/2022	10/18/2022	4/11/2023	10/17/2023	4/16/2024	10/14/2024	4/14/2025	10/8/2025
Constituent	Unit	GWPS									
Appendix III				Field Dup							
Boron	ug/L	NA	3,780	3,910	3,050	2,310	3,420	3,400	3,800	4,190	5,040
Calcium	mg/L	NA	57.6	56.2	45.5	79.1	47.2	60.2	47.6	71.4	79.3
Chloride	mg/L	NA	14.6	14.6	9.79	8.05	8.27	6.83	6.60	5.61	3.38
Fluoride	ug/L	NA	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Sulfate	mg/L	NA	56.6	56.3	46.2	87.5	56.7	63.9	53.7	94.4	124
Total Dissolved Solids	mg/L	NA	276	269	253	373	238	335	225	343	385
pH, Field	SU	NA	7.0	--	7.7	6.8	7.0	7.0	6.9	6.8	6.7
Appendix IV											
Antimony	ug/L	6	1	1	< 1	2	< 1	2	< 1	1	< 1
Arsenic	ug/L	10	7	7	11	5	7	8	5	4	5
Barium	ug/L	2000	197	203	185	342	264	382	294	387	348
Beryllium	ug/L	4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Cadmium	ug/L	5	0.2	0.2	< 0.2	0.2	< 0.2	0.3	< 0.2	0.4	0.3
Chromium	ug/L	100	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Cobalt	ug/L	15	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Fluoride	ug/L	4,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Lead	ug/L	15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Lithium	ug/L	40	18	19	16	23	17	23	17	22	21
Mercury	ug/L	2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	100	16	15	16	21	19	18	11	11	9
Radium-226/228	pCi/L	5.00	0.434	0.402	< 0.462	< 0.552	0.547	0.674	< 0.687	1.93	1.28
Selenium	ug/L	50	40	40	76	64	79	77	60	140	145
Thallium	ug/L	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2

Notes:

ug/L - micrograms per liter; mg/L - milligrams per liter.

pCi/L - picocuries per liter; SU - standard units; pH is a field parameter.

-- - not analyzed.

GWPS - Groundwater Protection Standard. GWPS is the higher of the Maximum Contaminant Level/Regional

Screening Level and Upper Tolerance Limit as established in TRC's Technical Memorandum dated October 15, 2018.

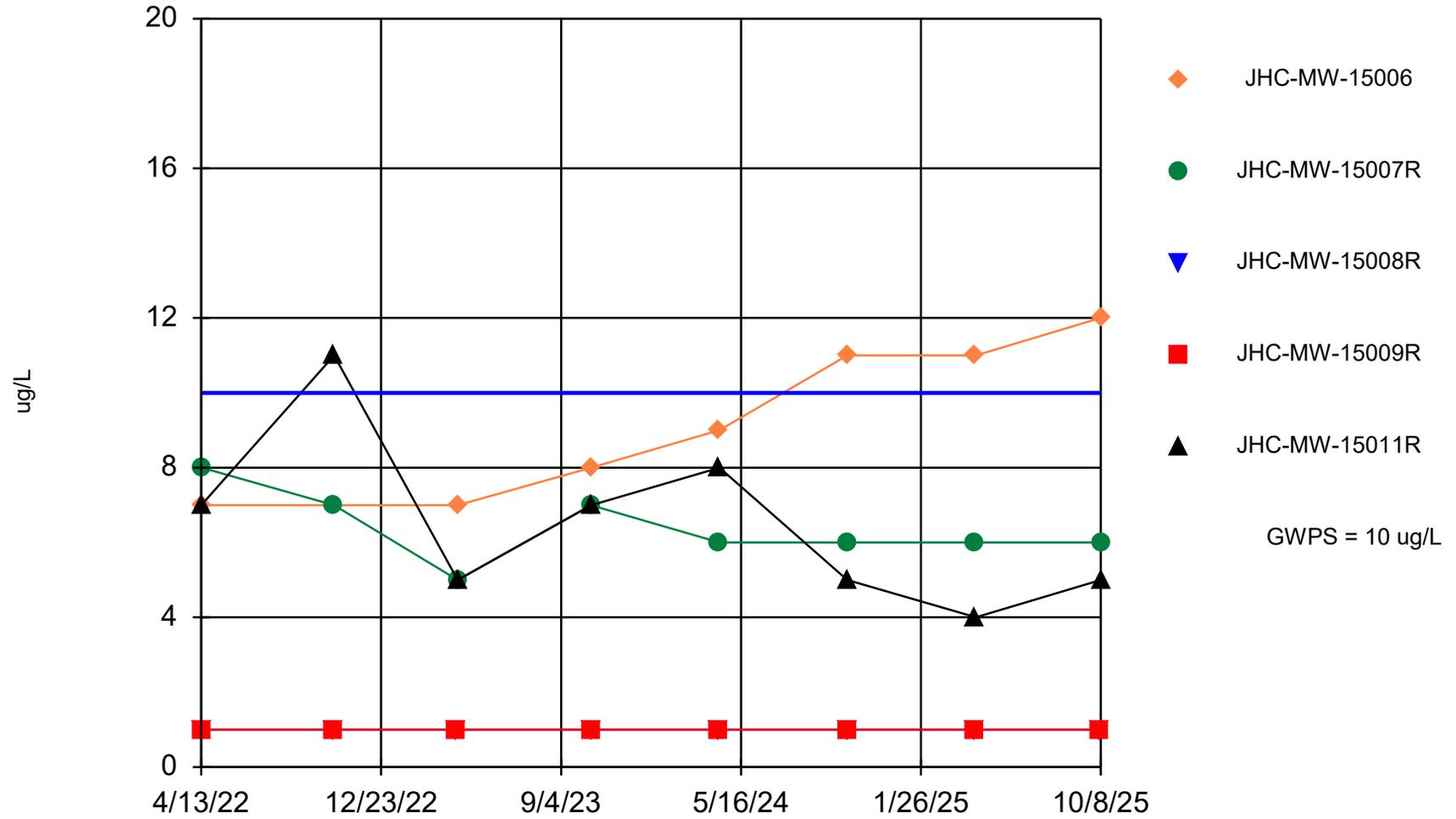
Bold value indicates an exceedance of the GWPS. Data from downgradient monitoring wells are screened against the GWPS for evaluation purposes only. Confidence intervals will be used to determine compliance per the CCR Rules.

All metals were analyzed as total unless otherwise specified.

Attachment 1

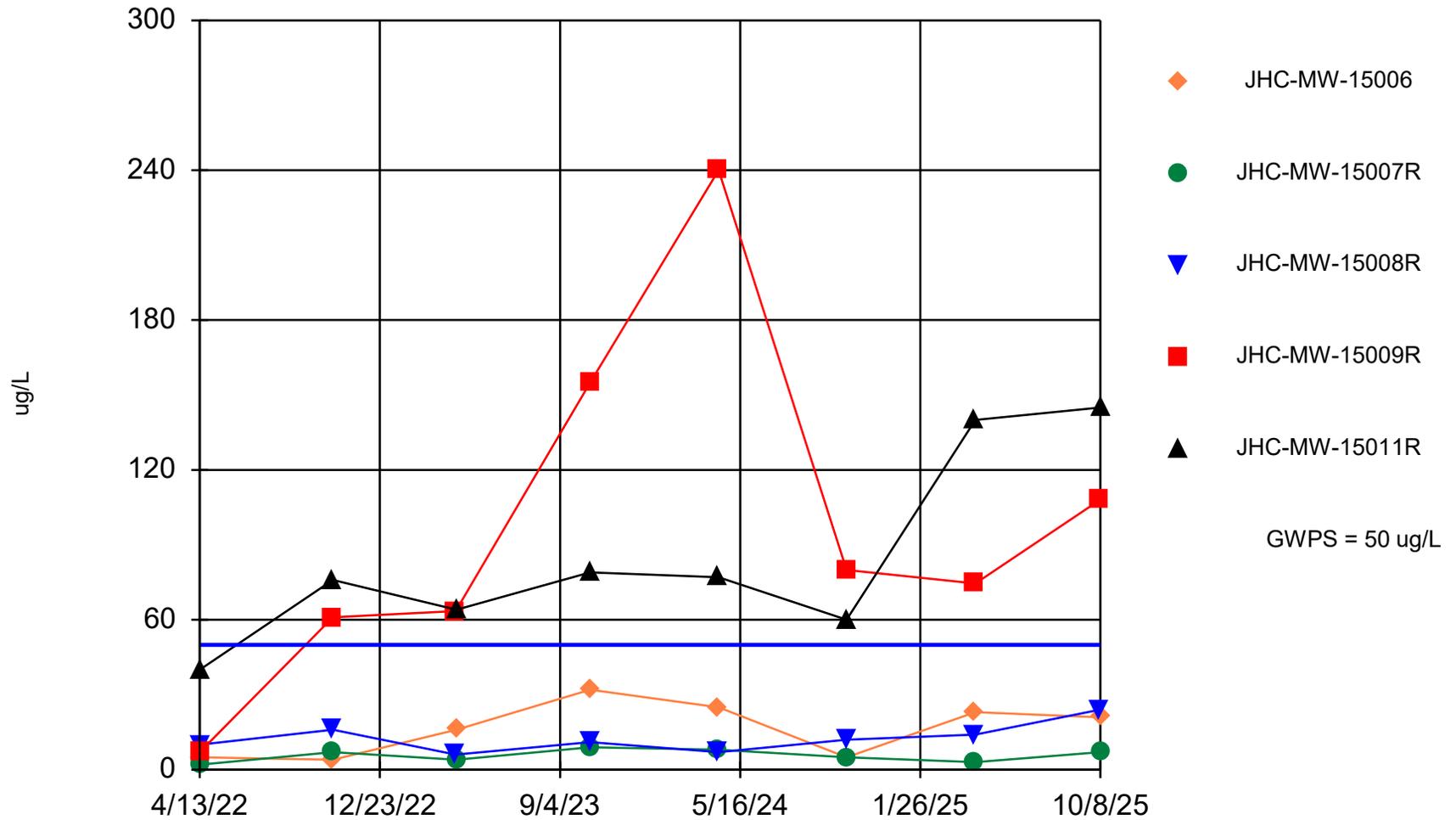
Sanitas™ Output

Arsenic Comparison to GWPS



Time Series Analysis Run 12/17/2025 2:33 PM
Client: Consumers Energy Data: JHC_4Q25

Selenium Comparison to GWPS

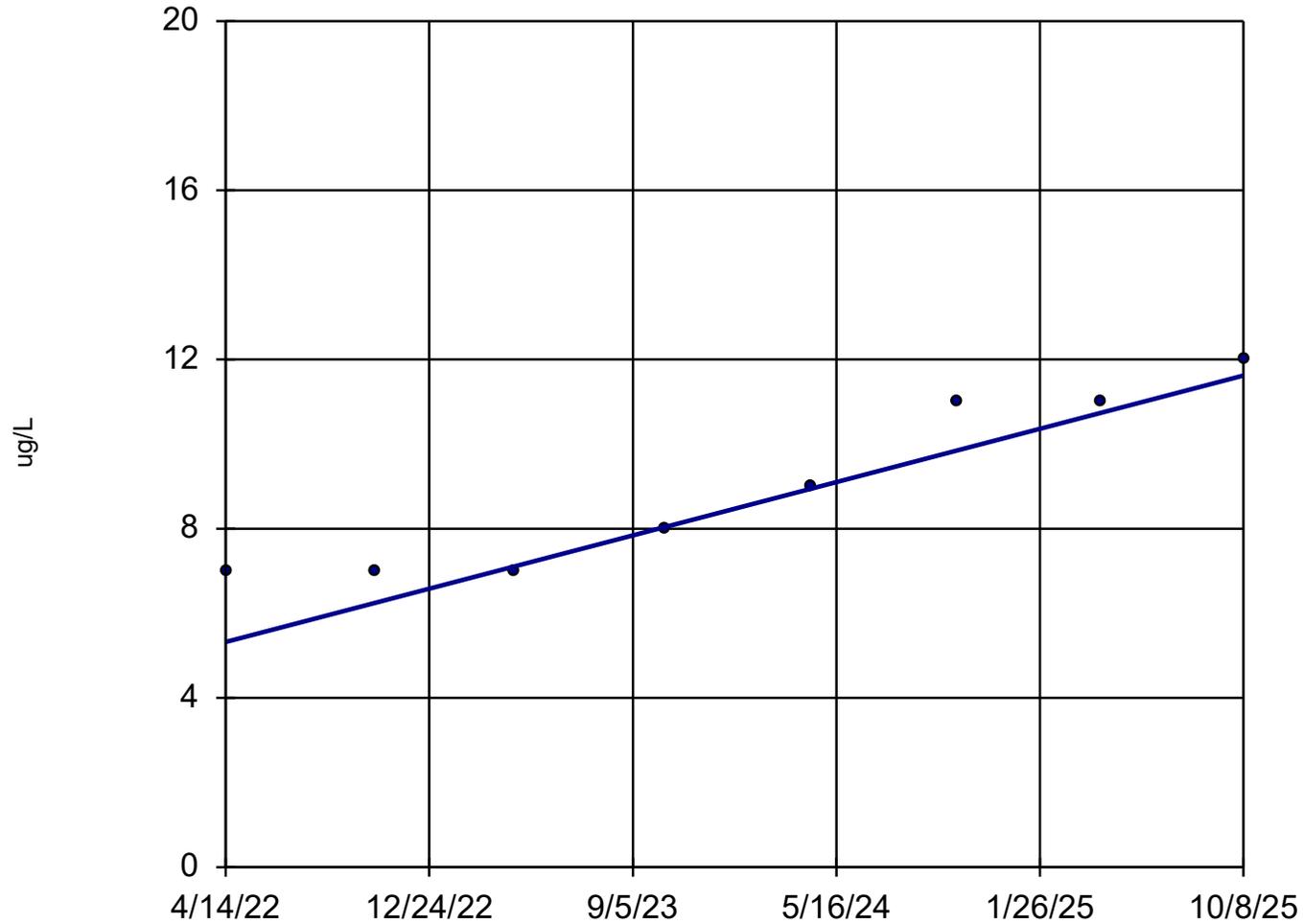


Time Series Analysis Run 12/17/2025 2:35 PM

Client: Consumers Energy Data: JHC_4Q25

Arsenic, Total

JHC-MW-15006



n = 8

Slope = 1.806
units per year.

Mann-Kendall
statistic = 24
critical = 20

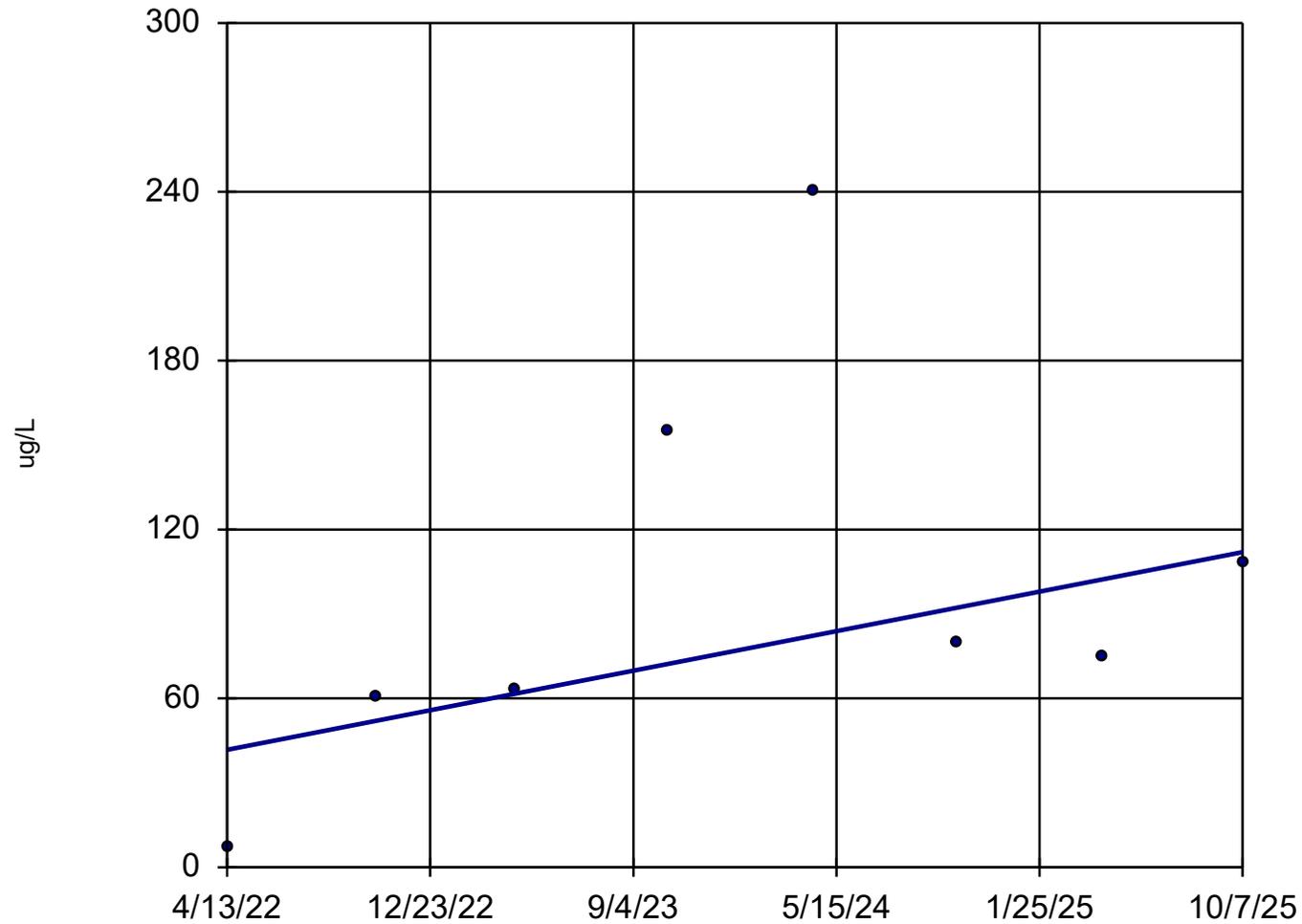
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Sen's Slope Estimator Analysis Run 12/17/2025 2:37 PM

Client: Consumers Energy Data: JHC_4Q25

Selenium, Total

JHC-MW-15009R



n = 8

Slope = 20.14
units per year.

Mann-Kendall
statistic = 14
critical = 20

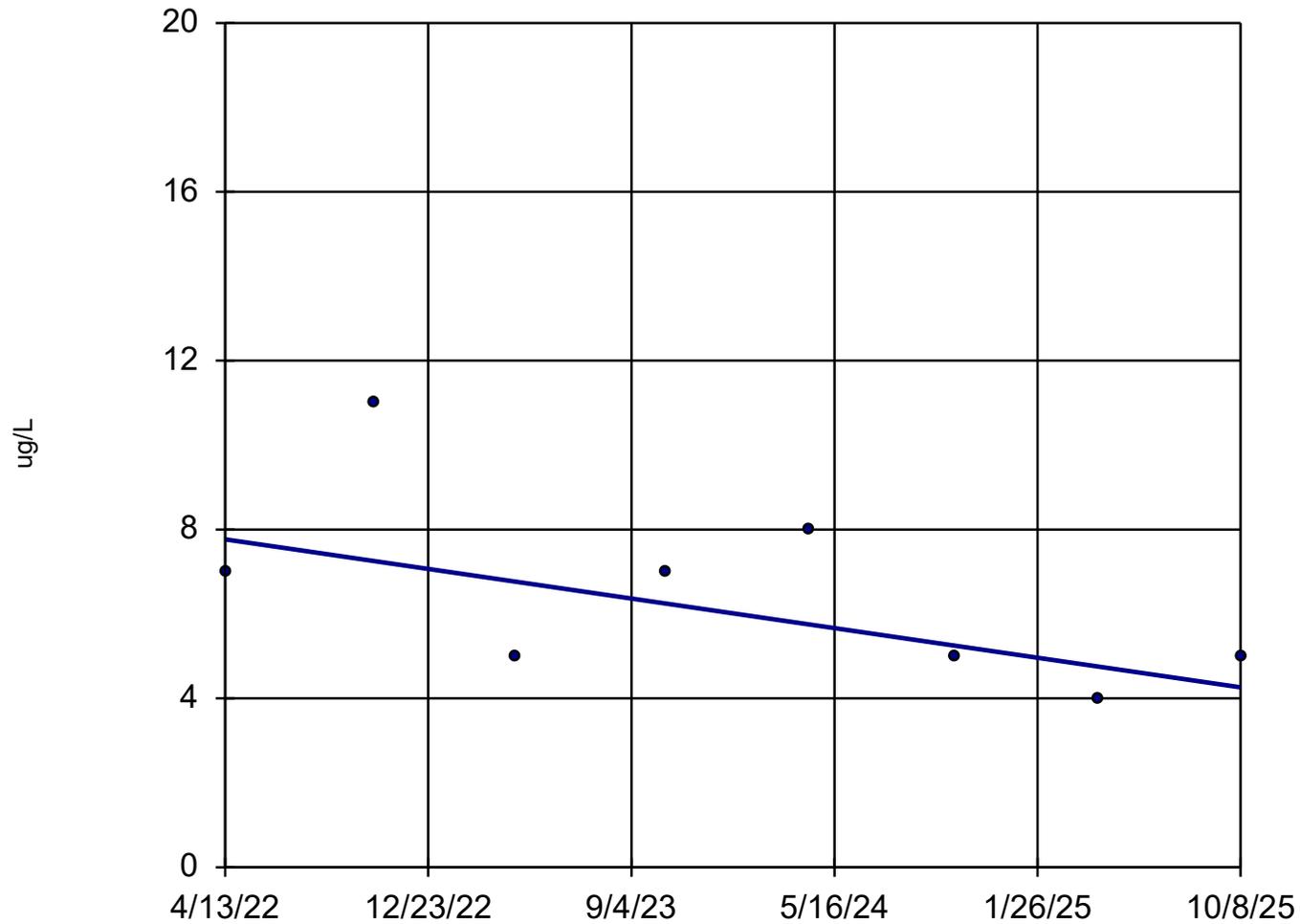
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Sen's Slope Estimator Analysis Run 12/17/2025 2:37 PM

Client: Consumers Energy Data: JHC_4Q25

Arsenic, Total

JHC-MW-15011R

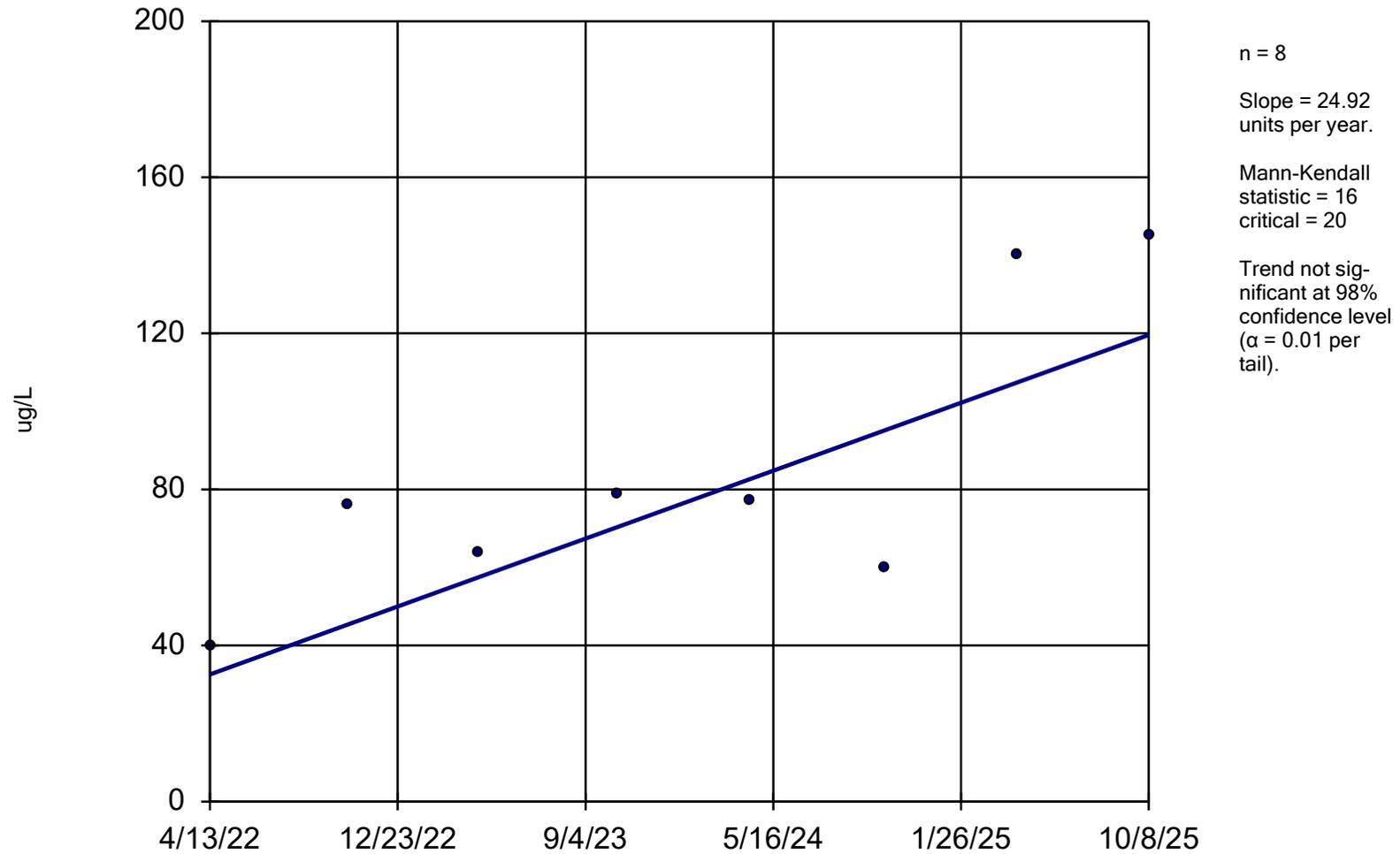


n = 8
Slope = -1.005
units per year.
Mann-Kendall
statistic = -12
critical = -20
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Sen's Slope Estimator Analysis Run 12/17/2025 2:38 PM
Client: Consumers Energy Data: JHC_4Q25

Selenium, Total

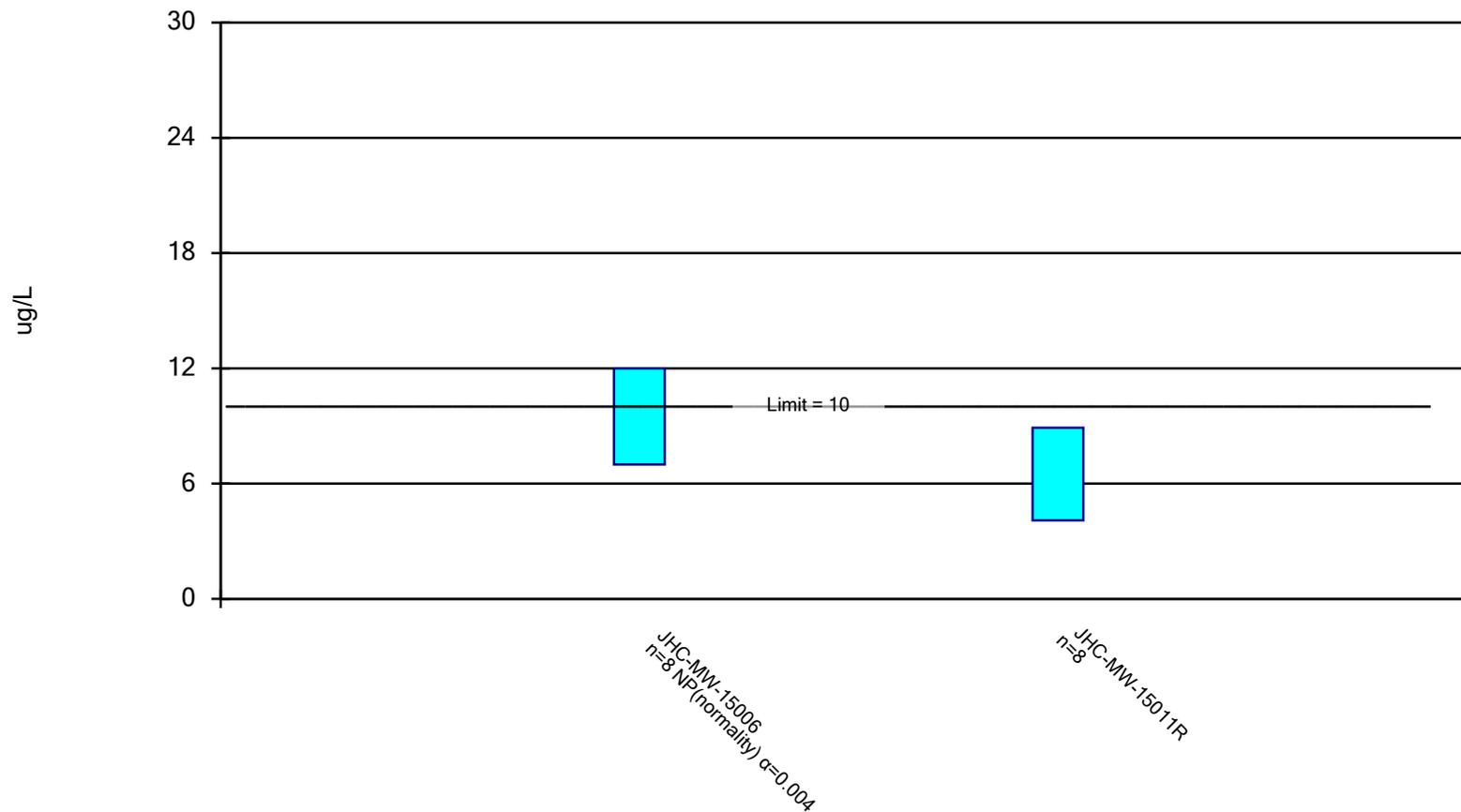
JHC-MW-15011R



Sen's Slope Estimator Analysis Run 12/17/2025 2:37 PM
Client: Consumers Energy Data: JHC_4Q25

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic, Total Analysis Run 12/17/2025 2:39 PM

Client: Consumers Energy Data: JHC_4Q25

Confidence Interval

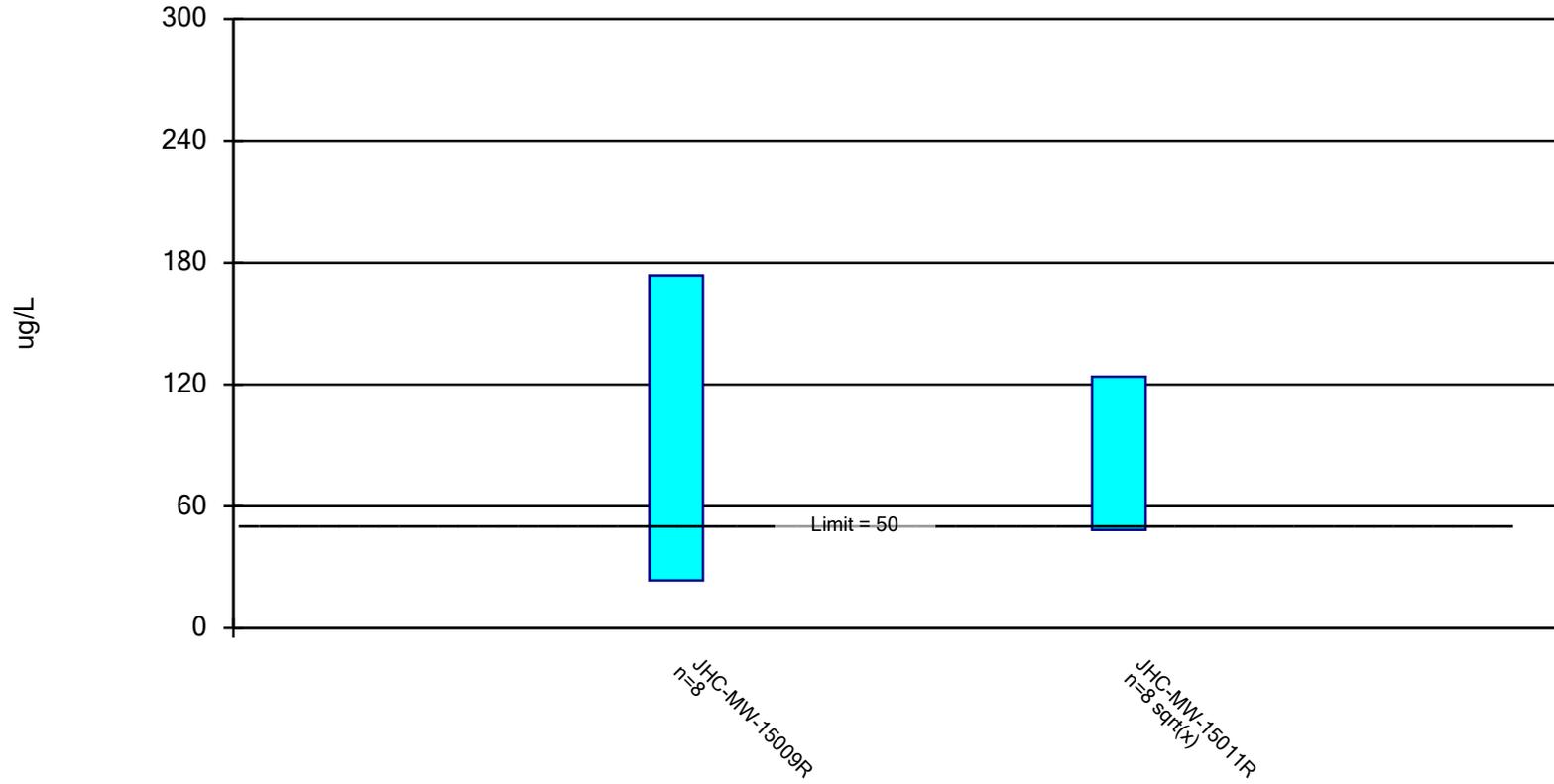
Constituent: Arsenic, Total (ug/L) Analysis Run 12/17/2025 2:40 PM

Client: Consumers Energy Data: JHC_4Q25

	JHC-MW-15006	JHC-MW-15011R
4/13/2022		7 (D)
4/14/2022	7	
10/18/2022	7	11
4/11/2023	7	5
10/17/2023	8	7
4/16/2024	9	8
10/14/2024	11	5
4/14/2025	11	4
10/8/2025	12	5
Mean	9	6.5
Std. Dev.	2.07	2.268
Upper Lim.	12	8.904
Lower Lim.	7	4.096

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium, Total Analysis Run 12/17/2025 2:39 PM

Client: Consumers Energy Data: JHC_4Q25

Confidence Interval

Constituent: Selenium, Total (ug/L) Analysis Run 12/17/2025 2:40 PM

Client: Consumers Energy Data: JHC_4Q25

	JHC-MW-15009R	JHC-MW-15011R
4/13/2022	7	40 (D)
10/18/2022	61 (D)	76
4/10/2023	63.5 (D)	
4/11/2023		64
10/17/2023	155 (D)	79
4/16/2024	240 (D)	77
10/14/2024	80	60
4/14/2025	74.5 (D)	140
10/7/2025	108 (D)	
10/8/2025		145
Mean	98.63	85.13
Std. Dev.	70.94	37.6
Upper Lim.	173.8	123.8
Lower Lim.	23.43	48.36

Appendix F

Semiannual Corrective Action Progress Report

January 30, 2026

Subject:

Semiannual Progress Report - Selection of Remedy
JH Campbell Pond A CCR Unit

This Semiannual Progress Report, prepared as a requirement of §257.97(a) of 40 CFR Parts 257 and 261, Disposal of Coal Combustion Residuals from Electric Utilities, under subtitle D of the Resource Conservation and Recovery Act (RCRA), also known as the Coal Combustion Residuals (CCR) Rule, describes progress toward selecting and designing remedies for the Pond A CCR unit that triggered Assessment of Corrective Measures (ACM) under the CCR Rule at the JH Campbell Solid Waste Disposal Area. Based on the schedule of self-implementation prescribed in the CCR Rule, a progress report is required to be prepared semiannually upon completion of the Assessment of Corrective Measures Report until the remedy is selected. It is noteworthy that remedy selection for the Pond A, prescribed by the CCR Rule, is being undertaken in coordination with a Michigan Department of Environment, Great Lakes, and Energy (EGLE) Consent Agreement 115-01-2018, which was executed on December 28, 2018.

Consumers Energy (CE) reported statistically significant exceedances above the groundwater protection standard (GWPS) for a single Appendix IV constituent, arsenic, in the “Notification of Appendix IV Constituent Exceeding Groundwater Protection Standard per §257.95(g)” (Consumers Energy Company, January 2019).

Unit with GWPS Exceedance	Constituent	# of Downgradient Wells Observed
Pond A	Arsenic	1 of 6

Subsequently, the Assessment of Corrective Measures Report (TRC, September 2019) was completed on September 11, 2019 for Pond A. Five remedial approaches were evaluated and presented based on source control by construction of a final cover and certifying the closure in place for Pond A.

Semi-annual progress reports have been completed by placing the document in the operating record and making it available on the CE public-facing website starting with the 2019 Annual Groundwater Monitoring and Corrective Action Report and Fourth Quarter Hydrogeological Monitoring Report (TRC, 2020).

Assessment Activities

CE closed Pond A according to the “*JH Campbell Generating Facility Pond A Closure Plan, West Olive, Michigan*” (Golder, October 2016) and an updated closure plan detailing the final cover system was submitted to EGLE in February 2019. The state closure certification as required by Paragraph 4.2 of Consent Agreement WMRPD No. 115-01-2018 was approved by EGLE on November 25, 2019.

Post-closure increases in Appendix III constituents (e.g. boron) at multiple well locations and direct exceedances of the selenium GWPS in JHC-MW-15011R, JHC-MW-15009R, and JHC-MW-15008R and arsenic at JHC-MW-15006 that have not yet resulted in a statistically significant exceedance suggest a detectable influence from the immediately adjacent, upgradient, closed, pre-existing CCR units on-site. The closed, pre-existing units are not regulated CCR units under the RCRA CCR Rule, but remedial action is being taken under Consent Agreement WMRPD No. 115-01-2018. A remedial action plan (RAP) for these units was submitted to EGLE on September 30, 2021. In a letter sent June 10, 2022, CE committed to revising elements of the RAP based on comments received and ongoing discussion with EGLE. Ongoing discussions have continued with EGLE since then, with the latest version of the RAP submitted to EGLE on July 11, 2025.

Conclusions

Arsenic at JHC-MW-15011/R continues to demonstrate attenuation in visual downward concentration trends and has shown a statistically significant decrease to concentrations below the GWPS (upper confidence limit is below the GWPS). Nature and extent sampling data indicate that arsenic is not detected above the GWPS immediately downgradient from Pond A.

Groundwater monitoring data since the installation of the final cover indicates an observable influence from immediately adjacent, upgradient, closed, pre-existing units. Remedial action for the upgradient units is being taken under Consent Agreement WMRPD No. 115-01-2018.

Remedy Selection Process

The ACM Report identified a final cover system as the primary corrective action for Pond A, but also considered five technically feasible groundwater management alternatives to address the potential for residual arsenic. The first alternative was to monitor post-source control groundwater concentration improvements (e.g. no additional measures required once source control was completed), but four other alternatives were retained in the event GWPS could not be achieved for all constituents in all monitoring wells in the groundwater monitoring system.

Consumers Energy held a public meeting on May 28, 2025 to discuss the results of the corrective measures assessment for site-wide corrective actions that are inclusive of remedies for Pond A consistent with §257.96(e). The remedy for Pond A will be formally selected per §257.97 once the preferred option has been approved by EGLE through a corrective action order.

References

Consumers Energy Company. January 14, 2019. Notification of Appendix IV Constituent Exceeding Groundwater Protection Standard per §257.95(g), JH Campbell Pond A CCR Unit.

Golder Associates. October 2016. JH Campbell Generating Facility Pond A Closure Plan, West Olive, Michigan. Prepared for Consumers Energy Company.

TRC Environmental Corporation. September 2019. Assessment of Corrective Measures, Consumers Energy Company JH Campbell Ponds 1-2 North and 1-2 South and Pond A Coal Combustion Residual Units. Prepared for Consumers Energy Company.