2023 Annual Groundwater Monitoring Report

Belle River Power Plant Bottom Ash Basins
4505 King Road
China Township, Michigan

January 2024

Prepared For:

DTE Electric Company

Prepared By:

TRC
1540 Eisenhower Place
Ann Arbor, Michigan 48108

Vincent E. Buening, C.P.G.
Senior Project Manager

David B. McKenzie, P.E.
Senior Project Engineer

Sarah B. Holmstrom, P.G.
Senior Hydrogeologist

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Executive Summary

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), as amended. The CCR Rule, which became effective on October 19, 2015 (with amendments in 2018 and 2020), applies to the DTE Electric Company (DTE Electric) Belle River Power Plant (BRPP) Bottom Ash Basins (BABs) CCR unit. 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 DTE Electric, TRC Engineers Michigan, Inc., the engineering entity of TRC, has prepared this Annual Groundwater Monitoring Report for calendar year 2023 activities at the BRPP BABs CCR unit.

The BRPP BABs CCR unit was operating under the detection monitoring program at the start of the 2023 annual reporting period and remained in the detection monitoring program through the end of the 2023 annual reporting period. The semiannual detection monitoring events for 2023 were completed in April and October 2023 and included sampling and analyzing groundwater within the groundwater monitoring system for the indicator parameters listed in Appendix III to the CCR Rule. As part of the statistical evaluation, the data collected during detection monitoring events are evaluated to identify statistically significant increases (SSIs) in Appendix III parameters to determine if concentrations in groundwater exceed prediction limits. All the monitoring data that have been collected and evaluated under §257.90 through §257.98 in 2023 are presented in this report.

From December 2022 to April 2023 DTE Electric performed an additional uppermost aquifer characterization as detailed in the April 2023 *Additional Uppermost Aquifer Characterization Study, Belle River Power Plant Bottom Ash Basins CCR Unit, 4505 King Road, China Township, Michigan* (Aquifer Characterization Study) prepared by TRC. The Aquifer Characterization Study presents an analysis of geochemical, stable isotopic, and tritium data collected in December 2022 along with pre-existing data from the BRPP BABs CCR unit that confirms the uppermost aquifer is not in hydraulic communication with the CCR unit and further demonstrates that the uppermost aquifer groundwater is unaffected by the CCR unit water.

In addition, DTE Electric retrofitted the BRPP BABs with composite liners in accordance with §257.102(k) in 2023. The BABs were retrofitted from April to October 2023 in accordance with the February 10, 2023 *Belle River Retrofit Plan for Bottom Ash Impoundment prepared for DTE Electric Company, Coal Combustion Residual Rule Compliance, China Township, Michigan* (Retrofit Plan) prepared by Burns & McDonnell pursuant to §257.102(k)(2). The BABs were retrofitted by removing the existing CCR down to the clay-rich native soil and installing an alternative composite liner system that complies with §257.70(c) and §257.72. The north and south BABs were retrofitted sequentially so that one BAB could be retrofitted while the other remained in service. The retrofit construction activities along with the certification required by §257.102(k)(4) that certifies the retrofits were completed in accordance with the Retrofit Plan are summarized in the November 29, 2023 *DTE Electric Company Belle River Bottom Ash*

Impoundment Notification of Completion of Retrofit report (Retrofit Completion Report) prepared by Burns & McDonnell. Since October 2023, the BRPP BABs remain in service as lined CCR surface impoundments.

No SSIs over prediction limits were recorded through the 2023 monitoring period. Potential SSIs over prediction limits were noted for several Appendix III constituents in one or more monitoring wells during the April and October 2023 monitoring events. These potential SSIs were either not statistically significant (i.e. verification resampling did not confirm the exceedance) or were evaluated and determined to be a result of natural variability in groundwater quality as documented in alternate source demonstrations (ASDs) and not attributable to the BRPP BABs CCR unit. Therefore, detection monitoring will continue at the BRPP BABs CCR unit in accordance with §257.94.

1.0 Introduction

1.1 Program Summary

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), as amended. The CCR Rule, which became effective on October 19, 2015 (with amendments in 2018 and 2020), applies to the DTE Electric Company (DTE Electric) Belle River Power Plant (BRPP) Bottom Ash Basins (BABs) CCR unit. 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 DTE Electric, TRC Engineers Michigan, Inc., the engineering entity of TRC, has prepared this Annual Groundwater Monitoring Report for calendar year 2023 activities at the BRPP BABs CCR unit (2023 Annual Report).

This 2023 Annual Report presents the monitoring results and the statistical evaluation of the detection monitoring parameters (Appendix III to Part 257 of the CCR Rule) for the April and October 2023 semiannual groundwater monitoring events for the BRPP BABs CCR unit. Detection monitoring for these events continued to be performed in accordance with the *CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company Belle River Power Plant Bottom Ash Basins and Diversion Basin* (QAPP) (TRC, July 2016; revised August 2017) and statistically evaluated per the Stats Plan (TRC, October 2017). As part of the statistical evaluation, the data collected during detection monitoring events are evaluated to identify SSIs of detection monitoring parameters compared to background levels.

Additional site characterization was completed in late 2020 and in 2021 with soil hydraulic conductivity testing extending into December 2022 including additional soil borings, cone penetrometer testing (CPT), soil sample collection for additional clay-rich soil, laboratory hydraulic conductivity testing, and additional slug testing (to measure the hydraulic conductivity of the uppermost aquifer in wells not previously tested) in support of the Alternative Liner Demonstration (ALD) that was submitted to the EPA on April 10, 2023 (Geosyntec, 2023). The ALD concludes that there is no reasonable probability that water from the BABs will cause releases to groundwater throughout the active life of the CCR unit at concentrations that will exceed the groundwater protection standard at the waste boundary.

From December 2022 to April 2023 DTE Electric performed an additional uppermost aquifer characterization as detailed in the April 2023 *Additional Uppermost Aquifer Characterization Study, Belle River Power Plant Bottom Ash Basins CCR Unit, 4505 King Road, China Township, Michigan* (Aquifer Characterization Study) prepared by TRC (TRC, April 2023). A copy of the Aquifer Characterization Study is included in Appendix A. The Aquifer Characterization Study presents an analysis of geochemical, stable isotopic, and tritium data collected in December 2022 along with pre-existing data from the BRPP BABs CCR unit that confirms the uppermost aquifer is not in hydraulic communication with the CCR unit and further demonstrates that the uppermost aquifer groundwater is unaffected by the CCR unit water as

discussed more in Section 4.1 of this report.

In addition, in 2023, DTE Electric retrofitted the BRPP BABs CCR unit by removing the existing CCR from both the north and south BABs down to the clay-rich native soil, removing any potentially impacted subgrade material, and constructing an alternative composite liner system. The north and south BABs were retrofitted sequentially so that one BAB could be retrofitted while the other remained in service. Since October 2023 the BRPP BABs have been in service as a lined CCR surface impoundment. A more detailed summary of the retrofit is provided in Section 4.2 of this report.

1.2 Site Overview

The BRPP is located in Section 13, Township 4 North, Range 16 East, at 4505 King Road, China Township in St. Clair County, Michigan. The BRPP was constructed in the early 1980s with plant operations beginning in 1984. Prior to Detroit Edison Company's operations commencing in the 1980s, the BRPP property was generally wooded and farmland. The property has been used continuously as a coal fired power plant since Detroit Edison Company (now DTE Electric) began power plant operations at BRPP in 1984 and is generally constructed over a natural clay-rich soil base. The BABs have been in use by the BRPP since it began operation and have collected CCR bottom ash that is periodically cleaned out and either sold for beneficial reuse or disposed of at the Range Road Landfill (RRLF).

1.3 Geology/Hydrogeology

The BRPP BABs CCR unit is located approximately one mile west of the St. Clair River. The BRPP BABs CCR unit is underlain by more than 100 feet of glacially deposited unconsolidated sediments, with the lower confining Bedford Shale generally encountered from 140 to 150 feet below ground surface (bgs). In general, the BRPP BABs CCR unit is initially underlain by at least 90 to as much as 130 feet of laterally extensive low hydraulic conductivity silty clay-rich deposits (TRC, 2017 and Geosyntec, 2023). The depth to the top of the confined sand-rich uppermost aquifer encountered immediately beneath the silty clay-rich deposits varies up to 50 feet within the monitoring well network and rapidly thins to the south and east of the BABs and pinches out (i.e., no longer present) to the southeast in the vicinity of SB-16-01 (Figure 1). Consequently, the uppermost aquifer is not laterally contiguous across the entire BRPP BABs CCR unit, and not present beneath the southeastern corner of the BABs.

The variability in the depth to the uppermost aquifer is a consequence of the heterogeneity of the glacial deposits and is driven by the lateral discontinuity of the sand outwash within the encapsulating fine-grained, silty clay till that confines the uppermost aquifer. There is an apparent lack of interconnection and/or significant vertical variation between the uppermost aquifer sand unit(s) encountered across the BRPP BABs CCR unit as demonstrated by the extensive amount of time (months) it took for water levels in monitoring well MW-16-02 to reach equilibrium after well construction and development (TRC, 2017).

Given the horizontally expansive clay with substantial vertical thickness that isolates the uppermost aquifer from the BRPP BABs CCR unit, the heterogeneity of the glacial deposits (with the top of the uppermost aquifer elevation across the BABs, where present varying up to

46 feet vertically), the no flow boundary where no sand or gravel is present in the southeastern portion of the BABs CCR unit area, and the apparent lack of hydraulic interconnectedness of the uppermost aquifer encountered at the BABs in some areas, it is not appropriate to infer horizontal flow direction or gradients across the footprint of the BRPP BABs CCR unit.

2.0 Groundwater Monitoring

2.1 Monitoring Well Network

A groundwater monitoring system has been established for the BRPP BABs CCR unit as detailed in the Groundwater Monitoring System Summary Report – DTE Electric Company Belle River Power Plant Bottom Ash Basins and Diversion Basin Coal Combustion Residual Units (GWMS Report) (TRC, October 2017). The detection monitoring well network for the BABs CCR unit currently consists of five monitoring wells that are screened in the uppermost aquifer. Monitoring wells MW-16-01 through MW-16-04 and MW-16-09 are located around the north, east and south perimeter of the BABs and provide data on both background and downgradient groundwater quality that has not been affected by the CCR unit (total of five background/downgradient monitoring wells). The monitoring well locations are shown on Figure 2.

2.2 Semiannual Groundwater Monitoring

The semiannual monitoring parameters for the detection monitoring program were selected per the CCR Rule's Appendix III to Part 257 – Constituents for Detection Monitoring. The Appendix III indicator parameters consist of boron, calcium, chloride, fluoride, pH (field reading), sulfate, and total dissolved solids (TDS) and were analyzed in accordance with the sampling and analysis plan included within the QAPP. In addition to pH, the collected field parameters included dissolved oxygen, oxidation reduction potential, specific conductivity, temperature, and turbidity.

2.2.1 Data Summary

The first semiannual detection monitoring event for 2023 was performed on April 26 and 28, 2023 by TRC personnel and samples were analyzed by Eurofins Environment Testing America (Eurofins) in accordance with the QAPP. Static water elevation data were collected at all five monitoring well locations. Groundwater samples were collected from the five detection monitoring wells for the Appendix III indicator parameters and field parameters. A summary of the groundwater data collected during the April 2023 event is provided on Table 1 (static groundwater elevation data), Table 2 (field data), and Table 3 (analytical results).

The second semiannual detection monitoring event for 2023 was performed on October 9 and 10, 2023 by TRC personnel and samples were analyzed by Eurofins in accordance with the QAPP. Static water elevation data were collected at all five monitoring well locations. Groundwater samples were collected from the five detection monitoring wells for the Appendix III indicator parameters and field parameters. A summary of the groundwater data collected during the October 2023 event is provided on Table 1 (static groundwater elevation data), Table 2 (field data), and Table 4 (analytical results). The laboratory analytical reports for each detection monitoring event are included in Appendix B.

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. Data quality reviews are summarized in Appendix C.

2.2.3 Groundwater Flow Rate and Direction

As presented in the GWMS Report, and mentioned above, given the horizontally expansive clay with substantial vertical thickness that isolates the uppermost aquifer from the BRPP BABs CCR unit; the heterogeneity of the glacial deposits (with the top of the uppermost aquifer elevation across the BABs; where present, varying up to 46 feet vertically); the no flow boundary where no sand or gravel is present in the southeastern portion of the BRPP BABs CCR unit area; and the apparent lack of hydraulic interconnectedness of the uppermost aquifer encountered at the BABs in some areas, it is not appropriate to infer horizontal flow direction or gradients across the site. Groundwater elevations measured during the April 2023 sampling event are provided on Table 1 and are summarized in plan view on Figure 3. Groundwater elevations measured during the October 2023 sampling event are provided on Table 1 and are summarized in plan view on Figure 4.

Groundwater elevation data collected during the 2023 sampling events show that groundwater conditions within the uppermost aquifer are consistent with previous monitoring events and continue to demonstrate that the monitoring wells are appropriately positioned to detect the presence of Appendix III parameters that could potentially migrate from the BRPP BABs CCR unit.

3.0 Statistical Evaluation

3.1 Establishing Background Limits

As discussed in the Stats Plan, intrawell statistical methods for the BABs CCR unit were selected based on the geology and hydrogeology at the site (primarily the presence of clay/hydraulic barrier, the variability in the presence of the uppermost aquifer across the site, lack of consistent groundwater flow direction and presence of no flow boundary on the southeast side of the aquifer), in addition to other supporting lines of evidence that the aquifer is unaffected by the CCR unit that have been further demonstrated in the ALD and Aquifer Characterization Study. An intrawell statistical approach requires that each downgradient well doubles as a background and compliance well, where data from each individual well during a detection monitoring event is compared to a statistical limit developed using the background dataset from that same well.

Per the Stats Plan, background limits were established for the Appendix III indicator parameters following the collection of at least eight background monitoring events using data collected from each of the five established detection monitoring wells (MW-16-01 through MW-16-04 and MW-16-09). The initial statistical evaluation of the background data is presented in the 2017 Annual Report. The Appendix III background limits for each monitoring well will be used throughout the detection monitoring period to determine whether groundwater has been impacted from the BRPP BABs CCR unit by comparing concentrations in the detection monitoring wells to their respective background limits for each Appendix III indicator parameter.

Consistent with the Stats Plan and the *USEPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (Unified Guidance, USEPA, 2009), prediction limits are periodically updated to reflect the additional data and additional temporal variability observed over time. The Appendix III prediction limits for the BRPP BAB were updated per the Stats Plan and Unified Guidance in December 2021 to incorporate additional data collected since 2017 as presented in the December 15, 2021 *Technical Memorandum, Prediction Limit Update – DTE Electric Company, Belle River Power Plant Bottom Ash Basin* (included as Appendix C in the *2021 Annual Groundwater Monitoring Report – DTE Electric Company, Belle River Power Plant Bottom Ash Basins Coal Combustion Residual Unit*, TRC, January 2022).

3.2 Data Comparison to Background Limits – First Semiannual Event (April 2023)

The concentrations of the indicator parameters in each of the detection monitoring wells (MW-16-01 through MW-16-04 and MW-16-09) were compared to their respective statistical background limits calculated from the background data collected from each individual well (i.e., monitoring data from MW-16-01 is compared to the background limit developed using the background dataset from MW-16-01, and so forth).

The comparisons of the April 2023 monitoring event data to background limits are presented on Table 3. The statistical evaluation of the April 2023 Appendix III indicator parameters showed no potential initial potential SSIs over background.

The calcium exceedance at MW-16-09 during the first semiannual event in April 2023 has previously been demonstrated to be from natural variability and is not from a release from the CCR unit as presented in the still applicable February 2022 ASD that was included in the 2022 Annual Report.

3.3 Data Comparison to Background Limits – Second Semiannual Event (October 2023)

The concentrations of the indicator parameters in each of the detection monitoring wells (MW-16-01 through MW-16-04 and MW-16-09) were compared to their respective statistical background limits calculated from the background data collected from each individual well (i.e., monitoring data from MW-16-01 is compared to the background limit developed using the background dataset from MW-16-01, and so forth).

The comparisons of the October 2023 monitoring event are presented on Table 4. The statistical evaluation of the October 2023 Appendix III indicator parameters showed a potential initial SSI over background for:

- Sulfate at MW-16-02

The calcium exceedance at MW-16-09 during the Second Semiannual Event in October 2023 has previously been demonstrated to be from natural variability and is not from a release from the CCR unit as presented in the still applicable February 2022 ASD that was included in the 2022 Annual Report.

3.4 Verification Resampling for the Second Semiannual Event

Verification resampling is recommended per the Stats Plan and the Unified Guidance to achieve performance standards as specified by §257.93(g) in the CCR Rule. Per the Stats Plan, if there is an exceedance of a prediction limit for one or more of the parameters, the well(s) of concern will be resampled within 30 days of the completion of the initial statistical analysis. Only constituents that initially exceed their statistical limit (i.e., have no previously recorded SSIs) will be analyzed for verification purposes. As such, verification resampling for the October 2023 event was conducted on December 6, 2023 by TRC personnel. A groundwater sample was collected for sulfate at MW-16-02 in accordance with the QAPP. A summary of the analytical results collected during the resampling event is provided on Table 4. The associated data quality review is included in Appendix C.

The verification sampling result for sulfate at MW-16-02 is below the prediction limit. Therefore, in accordance with the Stats Plan and the Unified Guidance, the original exceedance is not statistically significant, and no SSI will be recorded for the October 2023 detection monitoring sampling event.

4.0 Additional Aquifer Characterization and Retrofit Activities

4.1 Additional Uppermost Aquifer Characterization Study

From December 2022 to April 2023 DTE Electric had an additional uppermost aquifer characterization performed as described in the April 2023 Additional Characterization Study (TRC, April 2023) prepared by TRC. From December 14 to 16, 2022 TRC collected groundwater samples from the BRPP BABs groundwater monitoring well network (MW-16-01 through MW-16-04 and MW-16-09), a water sample from the north BAB (the south BAB was dewatered at the time) and a surface water sample from the St. Clair River.

These samples were analyzed for:

- Calcium (Ca), magnesium (Mg), sodium (Na), potassium (K), sulfate (SO_4), chloride (Cl), HCO_3 and alkalinity (bicarbonate (HCO_3), carbonate (CO_3) and total alkalinity), boron (B), lithium (Li) and strontium (Sr);
- Stable isotopes $\delta^{11}B$, $\delta^{87}Sr$ and $\delta^{7}Li$, $\delta^{2}H$, $\delta^{18}O$ and;
- Tritium.

The geochemical, stable isotopic and tritium data collected in December 2022 along with pre-existing data collected from the BRPP BABs CCR unit was evaluated and confirmed that the uppermost aquifer is not in hydraulic communication with the CCR unit water with the following multiple lines of evidence:

- The geochemical composition of the uppermost aquifer groundwater is statistically distinct from the CCR unit water;
- The source of lithium, boron, strontium, hydrogen, and oxygen in the uppermost aquifer groundwater is from upgradient groundwater and, as demonstrated by the stable isotope data is distinct from the CCR unit water; and
- Age dating with tritium validates that the uppermost aquifer groundwater is not hydraulically connected to the CCR unit.

These multiple lines of evidence come together in an additive fashion to further validate the conceptual site model established in the ALD (Geosyntec, April 2023) and previous studies, which holds that the contiguous glacially compacted natural clay-rich soil beneath the BABs serves as a natural confining hydraulic barrier isolating the underlying uppermost aquifer from the CCR unit and maintains that the uppermost aquifer groundwater is unaffected by the CCR unit water (TRC, April 2023).

4.2 Bottom Ash Basins Retrofit

DTE Electric retrofitted the BRPP BABs with composite liner systems in accordance with §257.102(k) in 2023. As required by §257.102(k)(2) a written retrofit plan was completed by DTE Electric on February 10, 2023 entitled *Belle River Retrofit Plant for Bottom Ash Impoundment prepared for DTE Electric Company, Coal Combustion Residual Rule Compliance, China Township, Michigan* (Retrofit Plan) (Burns & McDonnell, February 2023). The Retrofit Plan included the north and south BAB and was approved by the Michigan Department of Environment, Great Lakes and Energy (EGLE) on April 14, 2023.

The BABs (north and south) were retrofitted from April to October 2023 in accordance with the Retrofit Plan by removing the existing CCR down to the clay-rich native soil, removing any potentially impacted subgrade material, and installing an alternative composite liner system that complies with §257.70(c) and §257.72 as described in the November 29, 2023 *DTE Electric Company Belle River Bottom Ash Impoundment Notification of Completion of Retrofit* report (Retrofit Completion Report) (Burns & McDonnell, November 2023b). The north and south BABs were retrofitted sequentially so that one BAB could be retrofitted while the other remained in service.

The south BAB CCR removal and retrofit construction activities occurred during April to June 2023. Completion of the south BAB retrofit construction was documented in the June 9, 2023 *Construction Quality Assurance Report, Belle River Bottom Ash Impoundment South Basin Retrofit* (Burns & McDonnell, June 2023) that was approved by the EGLE on June 30, 2023. The south BAB was returned to service as a lined CCR surface impoundment on July 6, 2023. The north BAB CCR removal and retrofit construction activities occurred during from July to October 2023. Completion of the north BAB retrofit construction was documented in the November 3, 2023 *Construction Quality Assurance Report, Belle River Bottom Ash Impoundment North Basin Retrofit* (Burns & McDonnell, November 2023a) that was approved by EGLE on January 8, 2023.

The certification required under §257.102(k)(4) that certifies the retrofits were completed in accordance with the Retrofit Plan prepared per §257.102(k)(2) is provided in the Retrofit Completion Report. Since approval of the North Basin retrofit in January 2024, both of the BRPP BABs are in service as a lined CCR surface impoundment.

5.0 Conclusions and Recommendations

No SSIs over prediction limits were recorded for the Appendix III constituents in the downgradient wells during the 2023 monitoring period. Therefore, detection monitoring will be continued at the BRPP BABs CCR unit in accordance with §257.94. As discussed above and in the GWMS Report as well as the ALD and Aquifer Characterization Study, with the laterally contiguous clay with substantial vertical thickness that isolates the uppermost aquifer from the BRPP BABs CCR unit along with the recent BAB retrofit construction activities in which a composite liner system was installed in each BAB, there is no reasonable probability for the uppermost aquifer to be affected by CCR from BRPP operations.

No corrective actions were performed in 2023. The next semiannual monitoring event is scheduled for the second calendar quarter of 2024.

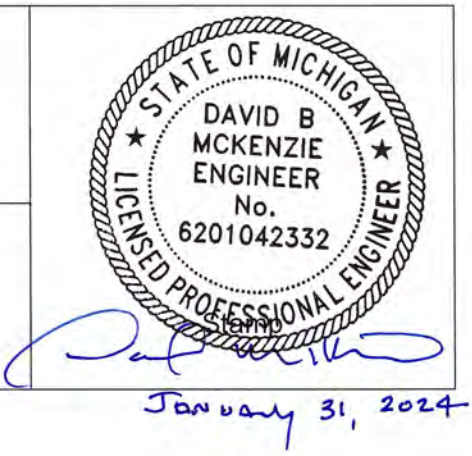
6.0 Groundwater Monitoring Report Certification

The U.S. EPA's Disposal of Coal Combustion Residuals from Electric Utilities Final Rule Title 40 CFR Part 257 §257.90(e) requires that the owner or operator of an existing CCR unit prepare an annual groundwater monitoring and corrective action report.

Annual Groundwater Monitoring Report Certification
Belle River Power Plant Bottom Ash Basins
China Township, Michigan

CERTIFICATION

I hereby certify that the annual groundwater monitoring and corrective action report presented within this document for the BRPP BABs CCR unit has been prepared to meet the requirements of Title 40 CFR §257.90(e) of the Federal CCR Rule. This document is accurate and has been prepared in accordance with good engineering practices, including the consideration of applicable industry standards, and with the requirements of Title 40 CFR §257.90(e).

Name: David B. McKenzie, P.E.	Expiration Date: December 17, 2025	
Company: TRC Engineers Michigan, Inc.	Date: January 31, 2024	

January 31, 2024

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Tables

Table 1

Summary of Groundwater Elevation Data – April to October 2023

Belle River Power Plant Bottom Ash Basins – RCRA CCR Monitoring Program

China Township, Michigan

Well ID	MW-16-01		MW-16-02		MW-16-03		MW-16-04		MW-16-09	
Date Installed	3/17/2016		3/15/2016		6/1/2016		3/8/2016		6/2/2016	
TOC Elevation	590.06		588.94		590.66		590.51		590.80	
Geologic Unit of Screened Interval	Sand		Sand		Silty Sand		Sand		Sand	
Screened Interval Elevation	496.3 to 491.3		494.3 to 489.3		456.0 to 451.0		468.5 to 463.5		452.3 to 447.3	
Unit	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft
Measurement Date	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation
04/26/2023	16.04	574.02	13.63	575.31	16.31	574.35	16.65	573.86	16.45	574.35
10/09/2023	15.73	574.33	13.44	575.50	15.92	574.74	16.02	574.49	16.25	574.55

Notes:

Elevations are reported in feet relative to the North American Vertical Datum of 1988.

ft BTOC - feet Below top of casing.

Table 2
Summary of Field Data – April to December 2023
Belle River Power Plant BABs
China Township, Michigan

Sample Location	Sample Date	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	pH (SU)	Specific Conductivity (umhos/cm)	Temperature (°C)	Turbidity (NTU)
MW-16-01	4/28/2023	1.34	-127.4	7.6	1,487	10.70	4.12
	10/9/2023	1.81	-67.0	7.4	1,185	11.60	1.22
MW-16-02	4/28/2023	1.26	-141.7	7.6	1,184	10.70	3.58
	10/9/2023	3.66	-83.7	7.4	959	12.60	1.54
	12/6/2023 (1)	1.37	-149.7	7.6	938	10.90	0.52
MW-16-03	4/28/2023	1.28	-149.5	7.7	1,761	11.20	3.53
	10/9/2023	1.25	-103.5	7.6	1,417	13.10	2.51
MW-16-04	4/28/2023	1.21	-201.9	7.9	1,599	11.60	15.80
	10/9/2023	2.17	-119.3	7.6	1,267	13.20	10.11
MW-16-09	4/28/2023	1.28	-159.3	7.9	2,793	11.20	51.70
	10/10/2023	1.36	-101.2	7.8	2,162	11.30	110.00

Notes:
mg/L -Milligrams per Liter.
mV - Millivolts.
SU - Standard Units.
umhos/cm - Micromhos per centimeter.
°C - Degrees Celsius.
NTU - Nephelometric Turbidity Unit
(1) Results shown for Verification sampling completed on 12/6/2023.

Table 3
Comparison of Groundwater Detection Monitoring Parameter Results to Background Limits – April 2023
Belle River Power Plant BABs
China Township, Michigan

Sample Location:		MW-16-01		MW-16-02		MW-16-03		MW-16-04		MW-16-09	
Sample Date:		4/28/2023	PL	4/28/2023	PL	4/28/2023	PL	4/28/2023	PL	4/28/2023	PL
Constituent	Unit	Data		Data		Data		Data		Data	
Appendix III											
Boron	ug/L	1,100	1,300	1,200	1,300	1,100	1,200	1,000	1,200	1,500	1,900
Calcium	ug/L	39,000	44,000	51,000	58,000	32,000	35,000	41,000	60,000	**67,000**(1)	42,000
Chloride	mg/L	450	510	350	390	550	800	470	520	940	1,100
Fluoride	mg/L	1.7	1.9	1.2	1.3	1.7	1.9	1.7	1.8	1.4	1.7
pH, Field	su	7.6	7.0 - 8.1	7.6	7.0 - 8.0	7.7	7.5 - 8.2	7.9	7.6 - 8.2	7.9	7.7 - 8.6
Sulfate	mg/L	13	14	9.2	15	< 1.0	5.9	9.0	36	9.6	37
Total Dissolved Solids	mg/L	860	970	700	910	960	1,100	880	1,100	1,700	2,000

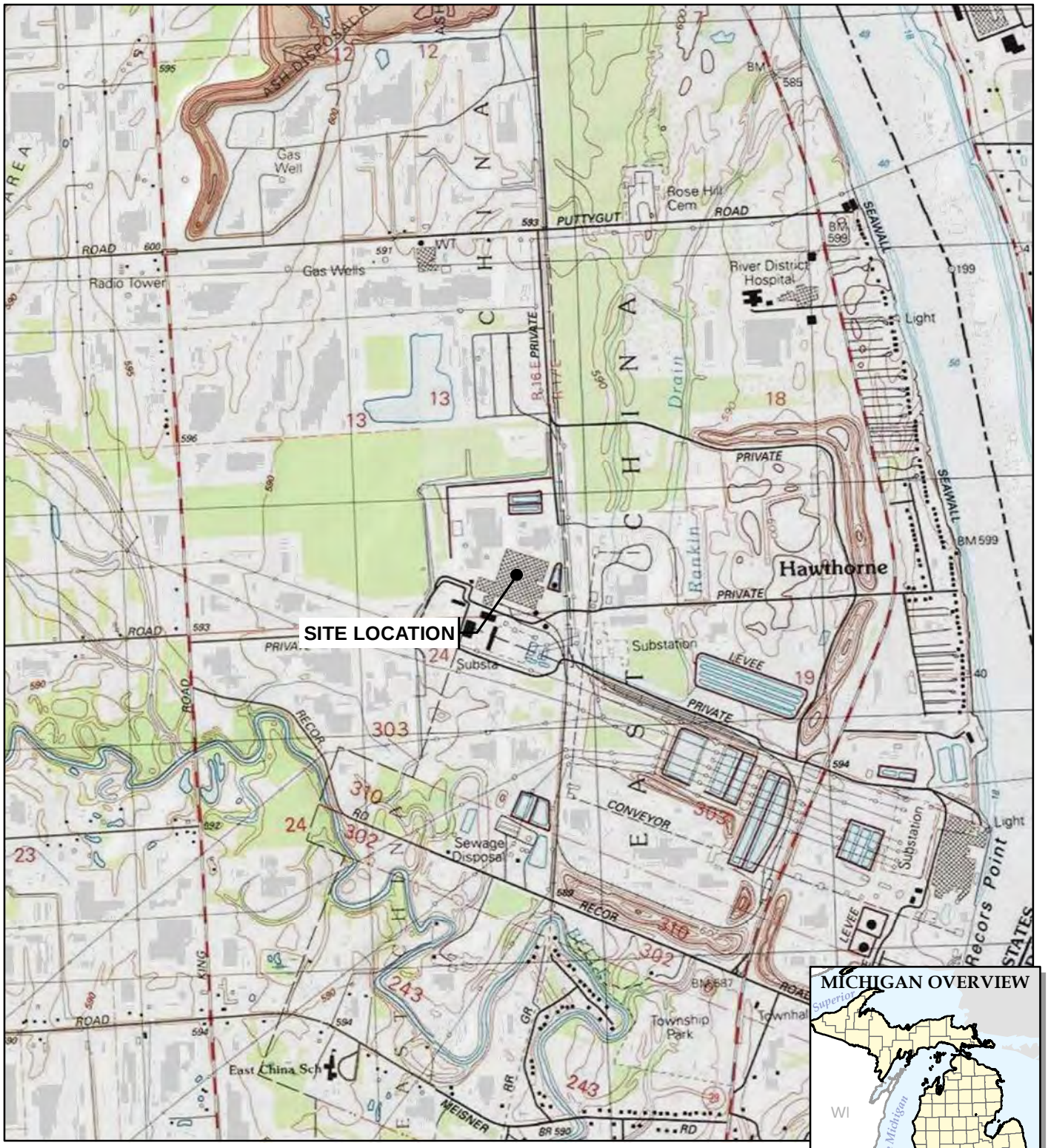
Notes:
ug/L - micrograms per liter.
mg/L - milligrams per liter.
SU - standard units; pH is a field parameter.
All metals were analyzed as total unless otherwise specified.
Bold font indicates an exceedance of the Prediction Limit (PL).
(1) - Exceedance was determined to be from an alternate source in the Second 2021 Semiannual alternative source demonstration dated 2/24/2022.

Table 4
Comparison of Detection Monitoring Parameter Results to Background Limits – October and December 2023
Belle River Power Plant BABs – RCRA CCR Monitoring Program
China Township, Michigan

Sample Location:		MW-16-01		MW-16-02			MW-16-03		MW-16-04		MW-16-09	
Sample Date:		10/9/2023	PL	10/9/2023	12/6/2023 (1)	PL	10/9/2023	PL	10/9/2023	PL	10/10/2023	PL
Constituent	Unit	Data		Data	Data		Data		Data		Data	
Appendix III					--							
Boron	ug/L	1,000	1,300	1,100	--	1,300	1,100	1,200	940	1,200	1,500	1,900
Calcium	ug/L	38,000	44,000	52,000	--	58,000	33,000	35,000	39,000	60,000	**110,000**(2)	**42,000**
Chloride	mg/L	470	510	360	--	390	570	800	500	520	960	1,100
Fluoride	mg/L	1.8	1.9	1.2	--	1.3	1.8	1.9	1.8	1.8	1.5	1.7
pH, Field	su	7.4	7.0 - 8.1	7.4	--	7.0 - 8.0	7.6	7.5 - 8.2	7.6	7.6 - 8.2	7.8	7.7 - 8.6
Sulfate	mg/L	6.8	14	**17**	2.7	**15**	< 1	5.9	13	36	5.9	37
Total Dissolved Solids	mg/L	900	970	740	--	910	1,000	1,100	910	1,100	1,600	2,000

Notes:
ug/L - micrograms per liter.
mg/L - milligrams per liter.
SU - standard units; pH is a field parameter.
All metals were analyzed as total unless otherwise specified.
Bold font indicates an exceedance of the Prediction Limit (PL).
(1) - Results Shown for Verification sampling performed on 12/6/2023.
(2) - Exceedance was determined to be from an alternate source in the Second 2021 Semiannual alternate source demonstration dated 2/24/2022.

Figures



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

1 " = 2,000 '
1:24,000

0 2,000 4,000
FEET

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

PROJECT:
DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT
4505 KING ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
SITE LOCATION MAP

DRAWN BY:	A. FOJTIK
CHECKED BY:	J. KRENZ
APPROVED BY:	V. BUENING
DATE:	JANUARY 2024
PROJ. NO.:	518728.0003
FILE:	518728-0003_SLM.mxd

FIGURE 1

E:\DTE\CCR_Sites\2017_265996\518728-0003_SLM.mxd -- Saved By: AFOJTIK on 11/27/2023, 10:09:12 AM

LEGEND

- SOIL BORING
- MONITORING WELL
- DECOMMISSIONED MONITORING WELL

NOTES

1. BASE MAP IMAGERY FROM ESRI WORLD IMAGERY, (03/2022).
2. WELL LOCATIONS SURVEYED IN MARCH, APRIL, JUNE 2016, AND JUNE 2017 BY BMJ ENGINEERS & SURVEYORS, INC.

N

0 200 400 Feet

1 " = 200 '

1:2,400

PROJECT:	DTE ELECTRIC COMPANY BELLE RIVER POWER PLANT 4505 KING ROAD CHINA TOWNSHIP, MICHIGAN
TITLE:	SITE PLAN
DRAWN BY:	A. FOJTIK
CHECKED BY:	J. KRENZ
APPROVED BY:	V. BUENING
DATE:	JANUARY 2024
PROJ NO.:	518728.0003
	FIGURE 2

TRC
1540 Eisenhower Place
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Phone: 734.971.7080
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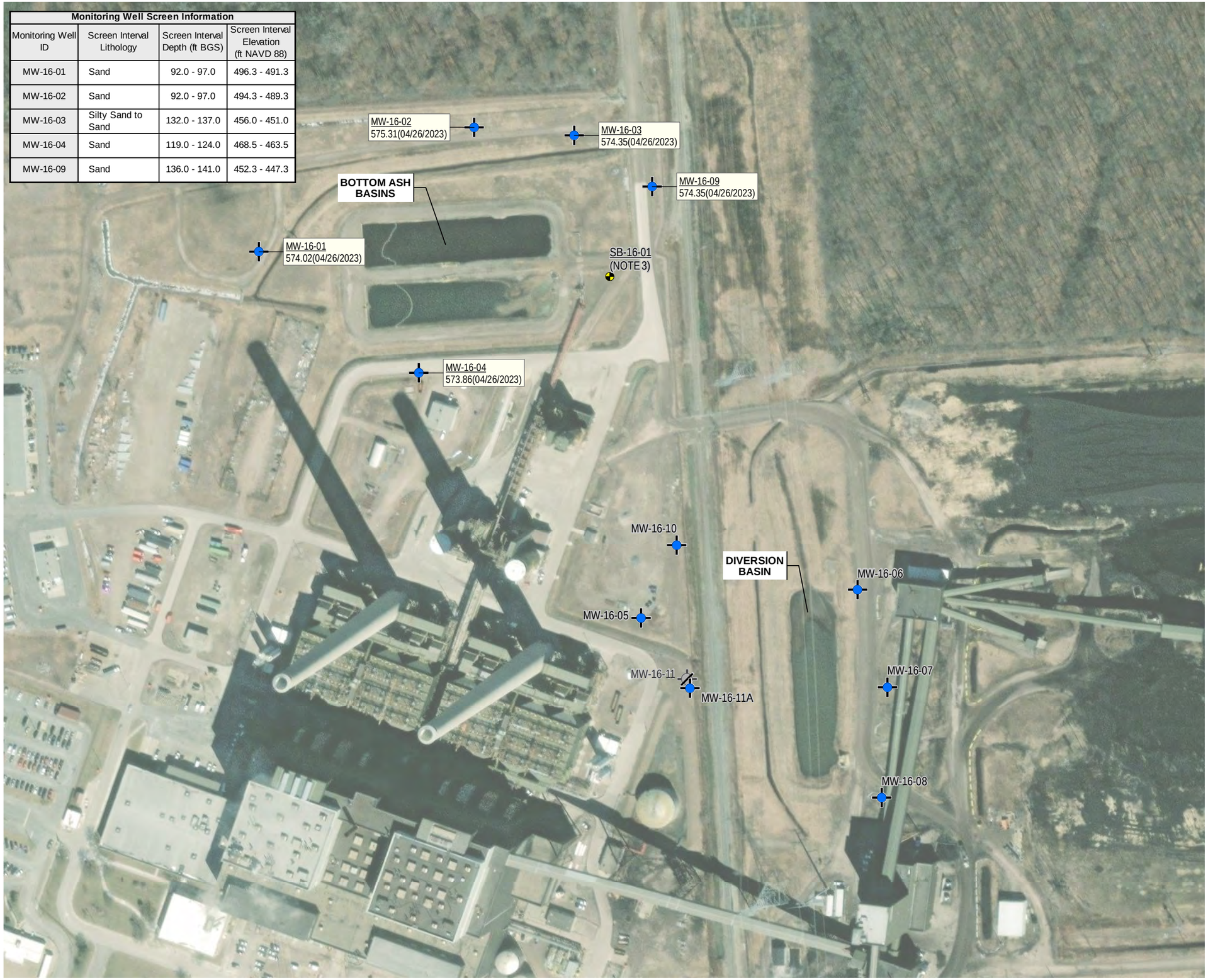
FILE NO.: 518728-0003-002.mxd

Plot Date: 11/27/2023, 09:55:39 AM by AFOJTIK -- LAYOUT: ANSI B (11"x17")
Path: E:\DTE\CCR_Sites\2017_265996\518728-0003-002.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0
TRC - GIS

Monitoring Well Screen Information			
Monitoring Well ID	Screen Interval Lithology	Screen Interval Depth (ft BGS)	Screen Interval Elevation (ft NAVD 88)
MW-16-01	Sand	92.0 - 97.0	496.3 - 491.3
MW-16-02	Sand	92.0 - 97.0	494.3 - 489.3
MW-16-03	Silty Sand to Sand	132.0 - 137.0	456.0 - 451.0
MW-16-04	Sand	119.0 - 124.0	468.5 - 463.5
MW-16-09	Sand	136.0 - 141.0	452.3 - 447.3



LEGEND

- SOIL BORING
- MONITORING WELL
- DECOMMISSIONED MONITORING WELL

MW ID
GROUNDWATER ELEVATION (DATE)

FT BGS
FEET BELOW GROUND SURFACE
FT NAVD 88
ELEVATION RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, (3/29/2022).
2. WELL LOCATIONS SURVEYED IN MARCH, APRIL AND JUNE 2016 AND JUNE 2017 BY BMJ ENGINEERS & SURVEYORS, INC.
3. NO SAND OR GRAVEL UNIT PRESENT ABOVE BEDROCK IN THIS LOCATION.

0 200 400 Feet

1 " = 200 '
1:2,400

PROJECT:
DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT BOTTOM ASH BASIN
4505 KING ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
BOTTOM ASH BASINS GROUNDWATER POTENTIOMETRIC ELEVATION SUMMARY APRIL 2023

DRAWN BY:	A. FOJTIK	PROJ NO.:	518728.0003
CHECKED BY:	J. KRENZ		
APPROVED BY:	V. BUENING		**FIGURE 3**
DATE:	JANUARY 2024		

TRC
1540 Eisenhower Place
Ann Arbor, MI 48108-3284
Phone: 734.971.7080
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FILE NO.: 518728-0003-003.mxd

Plot Date: 12/20/2023, 08:31:16 AM by AFOJTIK -- LAYOUT: ANSI B (11"x17")
Path: E:\DTE\CCR_Sites\2017_2659965\518728-0003-003.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

TRC - GIS

Monitoring Well Screen Information			
Monitoring Well ID	Screen Interval Lithology	Screen Interval Depth (ft BGS)	Screen Interval Elevation (ft NAVD 88)
MW-16-01	Sand	92.0 - 97.0	496.3 - 491.3
MW-16-02	Sand	92.0 - 97.0	494.3 - 489.3
MW-16-03	Silty Sand to Sand	132.0 - 137.0	456.0 - 451.0
MW-16-04	Sand	119.0 - 124.0	468.5 - 463.5
MW-16-09	Sand	136.0 - 141.0	452.3 - 447.3

LEGEND

- SOIL BORING
- MONITORING WELL
- DECOMMISSIONED MONITORING WELL

MW ID
GROUNDWATER ELEVATION (DATE)

FT BGS
FEET BELOW GROUND SURFACE
FT NAVD 88
ELEVATION RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, (3/29/2022).
2. WELL LOCATIONS SURVEYED IN MARCH, APRIL AND JUNE 2016 AND JUNE 2017 BY BMJ ENGINEERS & SURVEYORS, INC.
3. NO SAND OR GRAVEL UNIT PRESENT ABOVE BEDROCK IN THIS LOCATION.

N

0 200 400 Feet

1 " = 200 '
1:2,400

PROJECT:
DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT BOTTOM ASH BASIN
4505 KING ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
BOTTOM ASH BASINS GROUNDWATER POTENTIOMETRIC ELEVATION SUMMARY OCTOBER 2023

DRAWN BY:	A. FOJTIK	PROJ NO.:	518728.0003
CHECKED BY:	A. WHALEY		
APPROVED BY:	V. BUENING		**FIGURE 4**
DATE:	JANUARY 2024		

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

FILE NO.: 518728-0003-004b.mxd

Plot Date: 12/20/2023, 08:26:30 AM by AFOJTIK -- LAYOUT: ANSI B (11"x17")
Path: E:\DTE\CCR_Sites\2017_265996\518728-0003-004b.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0
TRC - GIS

Appendix A
April 2023 Aquifer Characterization Study

Additional Uppermost Aquifer Characterization Study

Belle River Power Plant Bottom Ash Basins CCR Unit, 4505 King Road, China Township, Michigan

April 2023

Prepared For:

DTE Electric Company

Prepared By:

TRC
1540 Eisenhower Pl.
Ann Arbor, MI 48108

Clint Miller, PhD., PG
Senior Project Geochemist

Alexander Eklund
Data Scientist

Vincent E. Buening, C.P.G.
Senior Project Manager

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FIGURES

APPENDICES

1.0 Introduction

1.1 Purpose and Objectives

The objective of this report is to document TRC's Additional Aquifer Characterization Study performed at the Belle River Power Plant Bottom Ash Basins CCR unit (BRPP BABs CCR unit) (hereinafter "the CCR unit"), which is located at the Belle River Power Plant, China Township, Michigan. This study was performed to determine if additional data, collected in December 2022, provide further lines of evidence to substantiate that groundwater in the uppermost aquifer is unimpacted by CCR operations. This additional uppermost aquifer characterization study is complementary to the preliminary alternative liner demonstration (ALD) prepared in accordance with 40 CFR §257.71 (d) that was submitted to the United States Environmental Protection Agency (EPA) on November 30, 2021 (Geosyntec, November 2021), and the previous studies (TRC, 2017, Bechtel, 1976) performed to establish the groundwater monitoring program developed pursuant to 40 CFR §257.91.

Previous studies performed at the site including the ALD have demonstrated and verified that the site is underlain by a thick laterally-continuous clay-rich deposit which meets the requirements of an alternate liner per 40 CFR §257.71 (d). The site characterization and groundwater data collected to-date from the CCR unit indicate that the natural underlying clay hydraulically separates the CCR unit from the uppermost aquifer and that groundwater quality is not affected by the CCR unit or any associated management activities. The data and analysis presented within the preliminary ALD further confirms the pre-existing site conceptual model, and through rigorous field testing and site-specific flow and transport modeling demonstrates the effectiveness of the clay. The preliminary ALD demonstrates that there is no reasonable probability that water from the CCR unit will result in a release to the uppermost aquifer throughout the CCR unit's active life, nor will data exceed the groundwater protection standard at the waste boundaries over the projected active life and post closure period of the CCR unit.

This additional characterization study included the collection of additional groundwater samples during December 2022, along with further analyses of existing data to further characterize the uppermost aquifer. Water samples were collected from the CCR unit groundwater monitoring well network, the BABs water, and a surface water sample was collected from the St. Clair River. Laboratory analysis performed during December 2022 included additional geochemical indicators, stable isotopes, and radiometric isotopes. Stable isotopes do not decay, but preferentially fractionate under physical, chemical and or environmental conditions. Radiometric isotopes are unstable and do decay; decay is at a constant rate, and therefore can be useful for age-dating different water sources. Additionally, data collected as part of monitoring under the state program (2020 to 2022) and the federal CCR program (2015-2022) were used as described and presented within this report.

In summary, the data collected in this assessment confirms that the uppermost aquifer is not in communication with the CCR unit water; groundwater geochemistry in the uppermost aquifer is reflective of the geogenic natural environmental conditions and is therefore unaffected by the CCR unit. Each of the multiple lines of evidence presented in this report independently supports this conclusion as discussed below.

1.2 Site Overview and Operational History

The BRPP is located in Section 13, Township 4 North, Range 16 East, at 4505 King Road, China Township in St. Clair County, Michigan (Figure 1). The BRPP was constructed in the early 1980s with plant operations beginning in 1984. Prior to Detroit Edison Company's operations commencing in the 1980s, the BRPP property was generally wooded and farmland. The property has been used continuously as a coal fired power plant since Detroit Edison Company (now DTE Electric) began power plant operations at BRPP in 1984 and is generally constructed over a natural clay-rich soil base. The BABs have been in use by the BRPP since it began operation and have collected CCR bottom ash that is periodically cleaned out and either sold for beneficial reuse or disposed of at the Range Road Landfill (RRLF).

The BRPP BABs are two adjacent physical sedimentation basins that are slightly raised CCR surface impoundments referred to as the North and South BABs, located north of the BRPP. These are considered one CCR unit. The BABs receive sluiced bottom ash and other process flow water from the power plant. Discharge water from each BAB flows over an outlet weir that gravity flows to a site storm water conveyance network of ditches and pipes, then flows into the diversion basin (DB) CCR unit, which is monitored as a separate CCR unit in accordance with the CCR Rule.

The DB is an incised CCR surface impoundment located east of the BRPP. Water flows into the DB from the North and South BABs through a network of pipes and ditches. The DB discharges to the St. Clair River with other site wastewater in accordance with a National Pollution Discharge Elimination System (NPDES) permit.

1.3 Geology/Hydrogeology

The geologic and hydrogeologic conditions at the CCR unit have been extensively studied and these studies (including TRC, 2017, Bechtel, 1976 and Geosyntec 2020), provide specific details on the hydrogeology and geology in the region, and at the BRPP. A brief discussion is provided below.

The CCR unit is located approximately one mile west of the St. Clair River. The CCR unit is underlain by more than 100 feet of unconsolidated sediments, with the lower confining Bedford Shale generally encountered from 140 to 150 feet below ground surface (bgs). In general, the CCR unit is initially underlain by at least 90 to as much as 130 feet of laterally extensive low hydraulic conductivity silty clay-rich deposits (TRC, 2017 and Geosyntec, 2021). The depth to the top of the confined sand-rich uppermost aquifer encountered immediately beneath the silty clay-rich deposits varies up to 46 feet within the monitoring well network and rapidly thins to the south and east of the BABs and pinches out (i.e., no longer present) to the southeast in the vicinity of SB-16-01 (Figure 2). Consequently, the uppermost aquifer is not laterally contiguous across the entire BRPP BABs CCR unit, and not present beneath the southeastern corner of the BABs. Monitoring wells MW-16-01 through MW-16-04 and MW-16-09 are all screened in the top of the sand-rich uppermost aquifer that is up to approximately 50 feet thick where it is present and underlain by the Bedford Shale.

The variability in the depth to the uppermost aquifer is a consequence of the heterogeneity of the glacial deposits and is driven by the lateral discontinuity of the sand outwash within the encapsulating fine-grained, silty clay till that is at least 82 feet thick that confines the uppermost aquifer beneath the BABs CCR unit. This is supported by the artesian conditions observed in the uppermost aquifer where the groundwater potentiometric surface elevation is well above the bottom of the overlying confining clay unit. There is a lack of interconnection and/or lack of significant vertical variation between the uppermost aquifer sand unit(s) encountered across the CCR unit as demonstrated by the extensive amount of time (months) it took for water levels in monitoring well MW-16-02 to reach equilibrium after well construction and development (TRC, 2017).

Given the horizontally expansive clay with substantial vertical thickness that isolates the uppermost aquifer from the CCR unit, the heterogeneity of the glacial deposits (with the top of the uppermost aquifer elevation across the BABs, where present varying up to 46 feet vertically), the no flow boundary where no sand or gravel is present in the southeastern portion of the CCR unit area, and the apparent lack of hydraulic interconnectedness of the uppermost aquifer encountered at the BABs in some areas, it is not appropriate to infer horizontal flow direction or gradients across the CCR unit (TRC, January 2023) (Figure 4).

2.0 Additional Data Collection

The additional groundwater, basin water and surface water sample collection was performed from December 14 to 16, 2022 to provide data to further characterize the uppermost aquifer at the CCR unit. These samples were collected in general accordance with the *CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company Belle River Power Plant Bottom Ash Basins and Diversion Basin* (QAPP) (TRC, July 2016; revised March and August 2017).

2.1 Groundwater Sample Collection

Groundwater samples were collected from the five wells within the CCR unit uppermost aquifer monitoring well network (MW-16-01 through MW-16-04 and MW-16-09) (Figure 2).

2.2 Bottom Ash Basin Water Sample Collection

A water sample was collected from the North BAB (North BAB) (Figure 2). A water sample could not be collected from the South BAB as it was dry in December 2022.

2.3 Surface Water Sample Collection

A surface water sample (SC-01) was collected from the St. Clair River from the approximate location shown on Figure 3.

2.4 Laboratory Analysis

The aforementioned samples were submitted to the laboratories listed below for analysis of the following parameters to support the additional aquifer characterization:

- Eurofins Environment Testing for analysis of calcium (Ca), magnesium (Mg), sodium (Na), potassium (K), sulfate (SO_4), chloride (Cl), HCO_3 and alkalinity (bicarbonate (HCO_3), carbonate (CO_3) and total alkalinity), boron (B), lithium (Li) and strontium (Sr);
- ALS Scandinavia for analysis of $\delta^{11}B$, $\delta^{87}Sr$ and $\delta^{7}Li$;
- Waterloo Environmental Isotope Laboratory for analysis of $\delta^{2}H$ and $\delta^{18}O$; and
- Miami Tritium Laboratory for analysis of tritium.

Note: the δ notation is explained in Section 3. The December 2022 water data are summarized in Tables 1 through 3 and the December 2022 laboratory data for these water samples are provided in Appendix A.

3.0 Geochemical and Isotopic Data Analysis

3.1 Geochemistry

In order to provide a comprehensive evaluation of the data collected in December 2022, all of the existing Appendix III and Appendix IV data from groundwater samples collected from 2016 through 2022, as provided in the 2017 to 2022 Annual Reports (TRC, January 2018 through January 2023) were also included in the evaluation. These parameters included boron, calcium, chloride, fluoride, pH, sulfate, total dissolved solids, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, lead, lithium, mercury, molybdenum, selenium, thallium, and radium 226/228 combined. Additionally, concentrations of magnesium, potassium, sodium, strontium, and total organic carbon (TOC), as well as field measured parameters including oxidation-reduction potential (ORP), dissolved oxygen (DO), specific conductivity (SC), temperature, and turbidity were analyzed/measured and utilized in this evaluation. The December 2022 field data are summarized in Table 1, and data for samples collected from the CCR unit water (2020 to 2022) and groundwater data collected from the uppermost aquifer monitoring wells (December 2022) are summarized in Table 2.

Analyte concentrations were compared to their historical values to verify consistency with past data (when possible). Samples collected from the BABs water were compared to groundwater samples collected from the uppermost aquifer (MW-16-01 to MW-16-04 and MW-16-09). In addition, a surface water sample for analysis was collected from the St. Clair River (SC-01). The purpose of the St. Clair River sample was to provide analytical data independent of either the CCR unit water or the uppermost aquifer groundwater. This data serves to augment the conceptual site model (CSM) by providing background information of other water types in the area, particularly the source of some of the stable isotopes.

3.1.1 General Chemistry

Data show that the December 2022 sampling results are consistent with historical data, and the results were within typical ranges of previously analyzed samples. The uppermost aquifer groundwater, North BAB CCR unit water, and St. Clair River sample geochemistries are broadly differentiated from each other in virtually every analysis. Figure 5 provides a Piper Diagram which plots the concentrations into groups or facies commonly recognized for comparison of major ions. The St. Clair River surface water sample plots in the calcium-bicarbonate while the uppermost aquifer groundwater is tightly packed in the sodium-chloride group. The CCR unit water falls into the mixed-sodium-sulfate facies and is distinctively different from the uppermost aquifer groundwater.

Sulfate concentrations within the uppermost aquifer groundwater ranged from below the laboratory reporting limit (RL) of 1.0 milligrams per liter (mg/L) to 16 mg/L, and the St. Clair River sample was 15 mg/L. The CCR unit water sulfate concentration was 150 mg/L (Figure 6). Chloride concentrations in the uppermost aquifer groundwater ranged from 350 mg/L to 930 mg/L, while the St. Clair River concentration was 9.6 mg/L, and the CCR unit was 8.2 mg/L. Bicarbonate concentrations in the uppermost aquifer groundwater ranged from 150 mg/L to 200 mg/L, but the CCR unit water concentration was only 50 mg/L. Conversely, the carbonate ion concentration in the uppermost aquifer groundwater and the St. Clair River sample was below

the laboratory reporting limit of 5 mg/L, but the CCR unit concentration was 47 mg/L. Fluoride concentrations in the uppermost aquifer groundwater ranged from 1.2 mg/L to 1.8 mg/L, but the CCR unit water concentration was only 0.09 mg/L.

Sodium concentrations in the uppermost aquifer groundwater ranged from 190 mg/L to 580 mg/L, and the CCR unit water concentration was 49 mg/L. The CCR unit potassium concentration (3.2 mg/L) was higher than the uppermost aquifer groundwater (average 2.9 mg/L). Similarly, the lithium concentration in the CCR unit water (0.026 mg/L) was approximately 25% higher than the uppermost aquifer groundwater (average 0.020 mg/L). Calcium was, on average more concentrated in the CCR unit water (49 mg/L) than in the uppermost aquifer groundwater (average 41 mg/L), and magnesium was more concentrated in the upper most aquifer groundwater (average 13.1 mg/L than in the CCR unit water (8.2 mg/L). Barium concentrations in the uppermost aquifer groundwater ranged from 0.22 mg/L to 0.32 mg/L, and concentrations in the CCR unit (Figure 7). Boron concentration in the uppermost aquifer groundwater (average 1.1. mg/L) was, on average six times higher than the CCR unit water (0.19 mg/L).

Groundwater in the uppermost aquifer was close to neutral (pH 7.6 to 7.9 standard units (SUs) while the CCR unit water was alkaline (pH 9.3 SU), and the uppermost aquifer ORP was negative (-177 to -73 millivolts [mV]) while the CCR unit water ORP was only -4.5 mV. Table 4 below provides a summary of the data, which is discussed more fully in Section 3.1.2.

Table 4 - Summary of Water Chemistry Results

Parameter	Units	Aquifer Avg	CCR unit	St. Clair River
Na^{+}+ K^{+}+ Li^{+}	mg/L	347	52	7
Ca^{2+}+ Mg^{2+}+ Ba^{2+}	mg/L	55	58	33
B^{3+}	mg/L	1.1	0.2	<0.1
HCO_3^{-}+ CO_3^{2-} + SO_4^{2-}+ Cl^{-}+ F^{-}	mg/L	729	255	106
pH	SU	7.8	9.3	8.3
Eh	mV	-121	-4.5	5.9

3.1.2 Ionic Speciation and Mineral Saturation

Using the measured data, the dominant dissolved species of each measured element was determined. Typically, the basis species were also the dominant ionic form. Due to the pH difference between the uppermost aquifer groundwater and the CCR unit water, dominant species were shifted because of the large quantity of hydroxide ions in the CCR unit water (e.g., bicarbonate to carbonate and boric acid to borate). The dominant calcium and magnesium species were Ca^{2+} and Mg^{2+} in the uppermost aquifer groundwater and St. Clair River, but additional masses of $CaCO_3$ and $MgCO_3$ in the CCR unit water. Similarly, boron was primarily $B(OH)_3$ in the uppermost aquifer groundwater and St. Clair River, but $B(OH)_4^{-}$ contributed mass in the CCR unit water. SO_4^{-}, Cl^{-}, and F^{-} were the dominant anions in all groups. HCO_3^{-} was the primary species in the uppermost aquifer groundwater, but the CCR unit water had equal

contribution of CO_3^{2-} due to the pH.

Geochemical parameters for the CCR unit water and the uppermost aquifer groundwater were calculated from the measured data using Geochemist's Workbench® (GW). The average of the chemical parameters for each water are presented below in Table 5.

Table 5 - Calculated Average Geochemical Parameters

Parameter	Units	CCR Unit Water	Uppermost Aquifer Average
f O2(g)	fugacity	1.756E-51	5.889E-64
pe	pe	-0.08	-2.15
Eh (O_2(aq)/H_2O)	Volts	-0.005	-0.121
Ionic strength	molal	0.008	0.019
Chlorinity	molal	0.001	0.016
Hardness	Micrograms/Kilogram (as $CaCO_3$)	156	158
Hardness (carbonate)	Micrograms/Kilogram (as $CaCO_3$)	86	123
Hardness (non-carbonate)	Micrograms/Kilogram (as $CaCO_3$)	71	35
Carbonate alkalinity	Micrograms/Kilogram (as $CaCO_3$)	86	131
Charge imbalance	equivalents/Liter	0.0002	-0.0002
Charge imbalance error	percentage	2.48	-0.05

Fugacity is a thermodynamic parameter that can be used to differentiate water masses based on their geochemical properties. Fugacity is a measure of the escaping tendency of a gas or volatile substance from a liquid or solid phase, and it is commonly used to describe the behavior of gases and other volatile substances in aqueous environments. A very low fugacity, as observed in each of these waters, means that a gas or volatile substance is not readily escaping from a liquid or solid phase. Both pe and Eh can be used to describe water masses based on their oxidative or reducing potential. The pe and Eh values correspond to slightly reducing conditions, meaning although both waters are near 0, they have a slight tendency to donate electrons to other species. In other words, there is a small excess of electron donors (such as ferrous iron) compared to electron acceptors (such as oxygen) in the system.

Ionic strength is a measure of the concentration of charged ions (e.g., Na^+, Cl^-, Mg^{2+}, etc.) in a solution. Chlorinity is a measure of the concentration of chloride ions (Cl^-) in a solution and is often used as a proxy for salinity. The CCR unit water and the uppermost aquifer groundwater

differ significantly in their Ionic strength and chlorinity values. The CCR water has a lower chlorinity and a higher ionic strength compared to the uppermost aquifer groundwater, which has a higher chlorinity and a lower ionic strength. The higher ionic strength of the CCR water indicates that there is a higher concentration of ions in the water, which could be due to the presence of dissolved salts, acids, or bases, or other dissolved ionic species.

Carbonate and non-carbonate hardness are two measures of water hardness that can be used to differentiate water masses based on their composition. Carbonate hardness, also known as temporary hardness, is caused by the presence of dissolved bicarbonate and carbonate ions in the water. These ions are derived from the dissolution of calcium and magnesium carbonates in the rock formations through which the water has passed. Non-carbonate hardness, also known as permanent hardness, is caused by the presence of dissolved calcium and magnesium ions in the water that are not associated with carbonate or bicarbonate ions. This type of hardness is typically caused by the dissolution of calcium and magnesium sulfates or chlorides in the water. The differences in carbonate and noncarbonate hardness between the CCR unit water and uppermost aquifer groundwater are significant. The CCR water has a lower carbonate hardness and a higher noncarbonate hardness compared to the uppermost aquifer.

Mineral saturation indices of 102 mineral phases were also calculated using GW. Log(Q/K) mineral saturation data is typically used to determine the saturation state of minerals. Q represents the activity of a particular mineral species, while K represents the equilibrium constant for the mineral reaction in question. The logarithm of the ratio of Q to K is taken to calculate log(Q/K), which provides an indication of the saturation state of the mineral. If log(Q/K) is positive, it indicates that the mineral is oversaturated and may precipitate out of solution. If log(Q/K) is negative, it indicates that the mineral is undersaturated and may dissolve into solution. If log(Q/K) is zero, it indicates that the mineral is in a state of equilibrium. The saturation results are provided in Table 6.

Based on the calculations presented in Table 6, the St. Clair River sample was undersaturated with respect to all minerals except witherite ($BaCO_3$) and several oxides. The CCR unit water was oversaturated with respect to the following minerals:

- Carbonates
  - Calcite/Aragonite – $CaCO_3$
  - Dolomite – $CaMg(CO_3)_2$
  - Strontianite – $SrCO_3$
  - Witherite – $BaCO_3$
- Sulfates
  - Barite – $BaSO_4$
- Oxides
  - Ferrite-Ca/Mg – $Ca(FeO_2)_2/MgFe_2O_4$
  - Goethite – α-FeO(OH)
  - Hematite – Fe_2O_3

Additionally, alstonite ($BaCa(CO_3)_2$), barytocalcite ($BaCa(CO_3)_2$), magnesite ($MgCO_3$), monohydrocalcite ($CaCO_3 \cdot H_2O$), and celestite ($SrSO_4$), were near equilibrium in the CCR unit water. The uppermost aquifer groundwater was only over saturated with respect to the following minerals:

- Carbonates
  - Dolomite – $CaMg(CO_3)_2$
  - Strontianite – $SrCO_3$
  - Witherite – $BaCO_3$
- Oxides
  - Ferrite-Ca/Mg – $Ca(FeO_2)_2/MgFe_2O_4$
  - Goethite – α-FeO(OH)
  - Hematite – Fe_2O_3

Additionally, calcite and aragonite (CaCO3), magnesite ($MgCO_3$), monohydrocalcite ($CaCO_3 \cdot H_2O$), and barite (BaSO4) were near equilibrium. In general, minerals with boron, chloride, fluoride, lithium, potassium, and sodium were undersaturated and minerals with calcium and magnesium were oversaturated in both waters. Oxides were oversaturated or near equilibrium in all samples. Carbonates were oversaturated in the CCR unit water, and near equilibrium in the uppermost aquifer groundwater. Sulfate minerals were oversaturated in the CCR unit water but were undersaturated in the uppermost aquifer groundwater. This is also presented in Figure 6, which provides the concentration of calcium plus magnesium as a function of concentration of dissolved sulfate.

Based on these results calcium, magnesium, strontium, and dissolved inorganic carbon (DIC) may be precipitating out of the uppermost aquifer groundwater, however this effect is likely minor given the saturation indices. Sulfate is expected to dissolve out of the uppermost aquifer material into the groundwater due to the substantial combined undersaturation of sulfate minerals (-4.8 average).

Although the carbonates are oversaturated in the CCR unit water, they may not be precipitating due to the pH. In alkaline conditions, carbonates can dissolve due to the formation of bicarbonate ions in solution. Note that calcium plus magnesium concentration as a function of the concentration of dissolved bicarbonate is provided in Figure 10 (discussed below).

3.2 Stable Isotopes

While concentration, speciation, and saturation data provide useful geochemical information to characterize water types, and can be particularly useful to determine if one body of water is in hydraulic connection with another, stable isotope analyses can provide unique “signatures” to differentiate and source waters. In order to build on the information presented above in Section 3.1, several isotopic evaluations were performed. For this study, lithium, boron strontium, hydrogen and oxygen isotopic data were used to determine the sources of various analytes and to build a CSM of the hydrogeologic and geochemical conditions. The stable isotope water data collected in December 2022 is summarized in Table 3.

Isotopes are commonly expressed with the delta notation (δ). The delta notation is a common way to express the relative abundance of isotopes in a sample, relative to a standard reference material. It is used to express the differences in the isotopic composition of a sample relative to the reference material, in parts per thousand (per mil or ‰). The delta notation is defined as:

$$\delta = \left(\frac{R_{Sample}}{R_{Standard}} - 1\right) 1{,}000$$

Where R is typically the rare isotope abundance divided by the abundant isotope abundance.

3.2.1 Lithium (δ^7Li) and Boron (δ^{11}B)

Lithium (δ^7Li) and boron (δ^{11}B) isotopes can be used to distinguish CCR water from background because the isotopic composition of lithium and boron in CCR is typically distinct from the composition in natural sources, such as rocks and sediments. The isotopic composition of lithium and boron in CCR is different from that of in natural sources because coal has a unique isotopic signature due to its geological origins and the processes involved in its formation.

The isotopic composition of lithium can change during coal formation due to several factors, including the geological origins of the coal, the depositional environment, and the processes involved in coal formation (Owen, 2015). Lithium has two stable isotopes, lithium-6 and lithium-7, and their relative abundance can be expressed as the delta value (δ^7Li) relative to a standard reference material (LSVEC NIST 8545 RM). The δ^7Li value can be used to track changes in the isotopic composition of lithium during coal formation (Teichert, 2022). The δ^7Li value of coal generally increases with increasing rank, or maturity, of the coal. This is because as coal is buried and subjected to increasing pressure and temperature, it undergoes a process called devolatilization, in which the volatile components of the coal, including lithium, are released. The released lithium preferentially enriches the remaining coal in the lighter isotope, lithium-6, leading to an enrichment in the δ^7Li value in the coal. The exact extent to which the δ^7Li value changes during coal formation can also depend on other factors, such as the depositional environment and the source of the organic matter that forms the coal. For example, coal formed from organic matter derived from plants that preferentially take up lithium-6 during growth may have a higher δ^7Li value than coal formed from marine organisms that have a higher δ^7Li value (Schlesinger, 2021).

Boron is a trace element that can be found in coal in varying amounts. The isotopic composition of boron in coal can change during coal formation, but the specifics of this process depend on several factors, including the source of boron, the depositional environment, and the conditions during coalification (Williams, 2004). In general, boron is derived from several sources during coal formation, including volcanic activity, seawater, and groundwater. Boron has two stable isotopes, boron-10 and boron-11, and their relative abundance can be expressed as the delta value (δ^{11}B) relative to a standard reference material (NIST SRM 951 RM). The isotopic composition of boron in these sources can vary, with different isotopic ratios of boron-10 to boron-11. During coal formation, boron can be incorporated into organic matter or minerals in the coal, and the isotopic composition of boron can be affected by processes such as adsorption, diffusion, and precipitation. For example, boron may be adsorbed onto clay minerals or organic matter in the coal, leading to a shift in the isotopic composition of boron towards the

composition of the adsorbent (Williams, 2004). The depositional environment can also play a role in determining the isotopic composition of boron in coal. In marine environments, boron may be more enriched in boron-11 due to the fractionation of boron isotopes during seawater evaporation (Xiao, 2007). In freshwater environments, boron isotopes may be more fractionated due to differences in boron uptake by plants (Xiao, 2022).

For these reasons, the $\delta^{7}Li$ and $\delta^{11}B$ values in water can provide information about the source and transport of CCR and CCR affected water. The unique isotopic composition of lithium and boron in CCRs can be used as a tracer. Therefore, this additional uppermost aquifer characterization utilized the measurement of $\delta^{7}Li$ and $\delta^{11}B$ values in the CCR unit water and the uppermost aquifer groundwater to determine if the unique CCR unit isotopic composition is observed in the uppermost aquifer groundwater. In order to make this effort even more robust, a surface water sample was collected from the nearby St. Clair River upstream from the CCR unit (Figure 3) in order to determine their $\delta^{7}Li$ and $\delta^{11}B$ values.

The $\delta^{7}Li$ and $\delta^{11}B$ of the CCR unit water was -0.13 per mil (‰) and -0.81 ‰, respectively, and the uppermost aquifer groundwater ranged from 28.75 to 31.21 ‰ and 39.26 to 43.49 ‰, respectively. As observed in Figure 8, the CCR unit water and the uppermost aquifer groundwater plot in two distinct groups. The St. Clair surface water sample plots in a distinct region at 20.8 ‰ and -4.82 ‰, respectively. The distinct CCR water, uppermost aquifer groundwater, and St. Clair River sample isotopic compositions are echoed in the distinctive concentration profiles in Figure 8. The CCR unit water lithium and boron isotopic compositions fall within ranges commonly observed of fractionated CCR material (Davidson, 1993; Spivak-Birndorf, 2006; Harkness 2015; Teichert, 2022). The $\delta^{7}Li$ and $\delta^{11}B$ vales of the uppermost aquifer groundwater samples and the surface water sample from St. Clair River are compositionally distinct from the CCR values (Ruhl, 2014; Owen, 2015) and fall within ranges commonly observed in the natural environment (Gonfiantini, 2006).

3.2.2 Strontium ($^{87}Sr/^{86}Sr$)

Similar to lithium and boron, the isotopic composition of strontium can be used to identify coal combustion residuals because coal and the minerals associated with it have a distinct strontium isotope signature that is different from other geologic materials (Brandt, 2018). During the coal combustion process, the strontium isotopic composition of the coal and any associated minerals is altered. CRR, including fly ash and bottom ash, can therefore be identified by analyzing their strontium isotopic composition and comparing it to the strontium isotopic composition of nearby liquids and solids that have not been affected by coal combustion (Hurst, 1981). The isotopic composition of strontium can be determined as a ratio of two of the stable isotopes, Sr-86, Sr-87, expressed as the ratio $^{87}Sr/^{86}Sr$ relative to a standard reference material (NIST SRM 987).

Strontium is a trace element that occurs naturally in coal-forming environments, and its isotopic composition can be affected by the source of the sedimentary materials, as well as by diagenetic processes. During coal formation, organic matter is buried and subjected to heat and pressure, which causes it to transform into coal. This process can lead to the release of fluids from the sedimentary rocks surrounding the coal seam, which can affect the isotopic composition of strontium in the coal (Spivak-Birndorf, 2012). In particular, the fluids may contain different concentrations of strontium isotopes compared to the original sedimentary rocks, which

can lead to changes in the isotopic composition of strontium in the coal.

In addition, strontium can be incorporated into the organic matter itself during coal formation, which can also alter its isotopic composition. The extent to which strontium is incorporated into the organic matter is dependent on several factors, including the original concentration of strontium in the sedimentary materials and the conditions during coal formation. The isotopic composition of strontium in coal can be influenced by both the source materials and the processes that occur during coal formation (Korte, 2003). This makes it a useful tool for determining if CCR impacted waters are in hydraulic connection with natural water.

Therefore, this additional uppermost aquifer characterization utilized the measurement of $^{87}Sr/^{86}Sr$ values in the CCR unit water and the uppermost aquifer groundwater to determine if the unique CCR unit isotopic composition is observed in the groundwater. Surface water collected from the nearby St. Clair River (Figure 3) in order to determine their $^{87}Sr/^{86}Sr$ values.

The $^{87}Sr/^{86}Sr$ ratios of the CCR unit water was 0.708901 while the uppermost aquifer groundwater ranged from 0.709290 to 0.709517. The $^{87}Sr/^{86}Sr$ ratio of the CCR unit water was approximately 0.0002 lower than the uppermost aquifer groundwater, which although seeming small, amounts to more than two times the internal range of all uppermost aquifer groundwater sample results. The St. Clair River sample strontium ratio was 0.709999, which is isotopically distinct from the other two groundwater groups. As observed in Figure 9, the CCR unit water, uppermost aquifer groundwater, and St. Clair surface water sample plot in three separate regions. The $^{87}Sr/^{86}Sr$ ratio of the CCR unit water is within published ranges of CCR leachate (Ruhl, 2014; Wang, 2020), and the uppermost aquifer groundwater samples and St. Clair River sample composition fit with values observed in natural waters (Shahand, 2009).

3.2.3 Hydrogen (δ^2H) and Oxygen ($\delta^{18}O$)

Hydrogen and oxygen isotopes are commonly used in environmental studies to trace the sources and fate of water molecules. The use of hydrogen and oxygen isotopes in water can provide valuable insights into the impacts of CCRs on water quality. In the case of CCR impacts in water, hydrogen and oxygen isotopes can be used to determine the source of water in ponds and if those molecules have migrated to natural waters (Liu, 2006). The isotopic composition of water molecules within these CCR water bodies can be compared to the isotopic composition of nearby uncontaminated water bodies. The isotopic composition of hydrogen and oxygen in water molecules is expressed as δ^2H and $\delta^{18}O$, respectively, and is measured in ‰ relative to a standard (Vienna Standard Mean Ocean Water [VMOW]). The isotopic signature of CCRs can vary depending on the source of coal, combustion conditions, and post-combustion processing (Huang, 2017).

Additionally, precipitation can have a significant effect on hydrogen and oxygen isotopes in groundwater. This is because the isotopic composition of precipitation varies in different regions (global and local meteoric water lines) due to variations in temperature, altitude, and atmospheric circulation patterns (Jouzel, 1984). When precipitation falls to the ground, it can either infiltrate into the soil and recharge the groundwater, or it can run off and enter streams or ponds. In the case of infiltration, the isotopic composition of the precipitation is generally preserved as it moves through the soil and into the groundwater. This means that the δ^2H and

$\delta^{18}O$ values of the groundwater will be similar to those of the precipitation that recharged it. The degree to which precipitation affects the isotopic composition of groundwater can vary depending on factors such as the depth and age of the groundwater, the nature of the subsurface materials, and the rate of recharge. Therefore, $\delta^{2}H$ and $\delta^{18}O$ values in groundwater can be used to trace the origin and movement of water in aquifers and to Identify if CCR has impacted water.

For these reasons this additional uppermost aquifer characterization utilized the measurement of $\delta^{2}H$ and $\delta^{18}O$ values in the CCR unit water and the uppermost aquifer groundwater to determine if the unique CCR unit isotopic composition is observed in the uppermost aquifer groundwater. Surface water was collected from the nearby St. Clair River where shown on Figure 3 in order to determine their $\delta^{2}H$ and $\delta^{18}O$ compositions.

The $\delta^{2}H$ and $\delta^{18}O$ compositions of the CCR unit water were -54.32 ‰ and -7.44 ‰, respectively, and the uppermost aquifer groundwater compositions ranged from -112.02 to -102.29 ‰ and -15.80 to -14.67 ‰, respectively. The uppermost aquifer groundwater samples all plot above the global meteoric water line[1], and the CCR unit water sample and the St. Clair River sample plot below the line (Craig, 1961). The St. Clair River sample and the CCR unit sample $\delta^{2}H$ and $\delta^{18}O$ compositions were essentially equal (percent difference of $\delta^{2}H$ and $\delta^{18}O$ were 1.14% and 1.12%, respectively). The CCR unit water $\delta^{2}H$, on was 50.84 ‰ heavier than the uppermost aquifer groundwater average, and the $\delta^{18}O$ was 7.59 $\delta^{18}O$ more positive. As observed in Figure 10, the CCR unit water and the uppermost aquifer groundwater plot in two distinct groups. The differences between the $\delta^{2}H$ and $\delta^{18}O$ CCR water and the uppermost aquifer groundwater are more than 5 times and 7 times, respectively greater than the total range of uppermost aquifer groundwater compositions.

3.3 Age Dating with Tritium Isotopes

The use of the isotope tritium to age date water is a well-established science and it has been successfully used to age date water sources for decades (Schlosser, 1988). Tritium (^{3}H) is a radioactive isotope of hydrogen, that decays at a constant rate to Helium-3 ($^{3}He^{*}$) with a half-life of about 12.3 years. It is a naturally occurring radioactive isotope, but also can be produced by human activities such as nuclear weapons testing. Tritium can be used to determine the age of groundwater because it can serve as a tracer of the time since the water was last in contact with the atmosphere (Telloli, 2022). Tritium is introduced into the atmosphere through nuclear weapons testing and naturally occurring cosmic radiation. It then becomes incorporated into precipitation and infiltrates into the ground, where it is taken up by plants or recharges groundwater. There are no subsurface reactions that generate tritium. Because tritium has a relatively short half-life, its concentration in precipitation, surface water and groundwater can be used to determine the age of the water (Dove, 2021).

When groundwater is recharged by precipitation that contains tritium, the concentration of tritium in the groundwater will be proportional to the age of the water since it was last in contact with the atmosphere. For example, if the concentration of tritium in the groundwater is high, it

[1] The global meteoric water line describes the global annual average relationship between hydrogen and oxygen isotope ratios (deuterium and oxygen 18) in natural meteoric waters. It is widely used to track water masses in environmental geochemistry and hydrogeology (Craig, 1961).

indicates that the water was recharged relatively recently, whereas if the concentration of tritium is low or undetectable, it indicates that the water is older. This information is important for understanding the hydrology of aquifers and for managing and protecting groundwater resources.

The groundwater age can be estimated using the concentration of tritium in the water and the known rate of decay of tritium. The basic equation for calculating tritium age is:

$$Age = ln\left(\frac{A/A_0}{\lambda}\right)$$

Where A is the measured tritium in the water sample in tritium units (TU), A_0 is the tritium concentration in precipitation, and λ is the decay constant which is 0.693 divided by the half-life of 12.3 years. The tritium age calculated from this equation represents the time since the water was last in contact with the atmosphere. However, it is important to note that the tritium age reflects the time since the water entered the subsurface but may not necessarily reflect the time since the water was first recharged into the aquifer. This is because the water may have spent some time in the unsaturated zone (i.e., the soil and rock above the water table) before entering the aquifer, and this time is not accounted for in the tritium age calculation.

This additional uppermost aquifer characterization utilized tritium to determine if water from the CCR unit was impacting the uppermost aquifer groundwater. This was accomplished by collecting a water sample from within the CCR unit water, uppermost aquifer groundwater samples, and a surface water sample from nearby St. Clair River upgradient of the unit. The tritium water data collected in December 2022 is summarized in Table 3. The St. Clair River and CCR unit water measured tritium values were 23.9 and 26.4 TU while the while the uppermost aquifer groundwater ranged from less than the detection limit of 0.1 TU to 0.18 TU. Using the equation above, either the St. Clair River sample or the CCR unit water can be used to represent A_0. Therefore, age estimates are calculated using both values. Using the CCR water as A_0, the water in the St. Clair River would be 2.5 years old, MW-16-09 would be approximately 90 years old, and the remaining aquifer samples would be greater than 100 years old (Figure 11). Using the St. Clair River sample as A_0 yields similar results (MW-16-09 at 85 years old and the remaining aquifer samples are greater than 98 years old). If a significant amount of CCR-impacted water were entering the groundwater, we should see an impact on the tritium concentration. Therefore, the downgradient uppermost aquifer groundwater is not in hydraulic communication with the CCR unit water and the uppermost aquifer has not been affected.

It is important to note that diffusion may affect tritium concentrations. Diffusion can affect tritium values in groundwater by altering the concentration gradient of tritium in the subsurface. Diffusion is the process by which molecules move from areas of high concentration to areas of low concentration due to random thermal motion. In the subsurface, diffusion can cause tritium to move from areas of higher concentration to areas of lower concentration, resulting in a decrease in tritium concentration over time. In groundwater systems, tritium is introduced into the subsurface through infiltration of tritium-containing precipitation. The tritium concentration in

the groundwater is initially highest near the recharge zone and decreases as the water flows through the subsurface. As the tritium moves through the subsurface, it can be affected by diffusion, which can cause it to move from areas of higher concentration to areas of lower concentration.

The rate of diffusion of tritium in groundwater is therefore primarily dependent on the hydraulic conductivity of the subsurface materials and the concentration gradient of tritium. It is important to consider the effects of diffusion when interpreting tritium data in groundwater studies, as it can impact the accuracy of age estimates and the interpretation of the hydrogeological processes in the subsurface.

The control of diffusion in a groundwater system can be demonstrated by calculating the Peclet number. The Peclet number is a dimensionless number that describes the relative importance of advection and diffusion in a fluid system. In groundwater, the Peclet number can be calculated using the following equation:

$$Pe = \frac{(Lv)}{D}$$

where *Pe* is the Peclet number, *L* is the characteristic length scale of the system (e.g. the distance between the source and the monitoring well), *v* is the groundwater velocity, and *D* is the molecular diffusion coefficient. A Peclet number greater than 1 indicates that advection is dominant, while a Peclet number less than 1 indicates that diffusion is dominant. Given the distance (100 ft) to the monitoring wells and a seepage velocity of 3 ft/year, at standard temperature and pressure the Peclet number for tritium is greater than 10. Therefore, diffusion can be ruled out as an influence on the downgradient tritium age.

4.0 Statistical Analysis

TRC performed statistical evaluations of the data collected as part of this study to evaluate additional lines of evidence to support aquifer characterization. In order to compare the different water groups (CCR unit vs uppermost aquifer groundwater) to each other in a holistic manner, principal component analysis (PCA) and linear discriminant analysis (LDA) were selected as appropriate data analysis tools. PCA and LDA are statistical techniques that are used for large data sets containing a high number of dimensions/features per observation allowing for visualization of multidimensional data. PCA is a well-established statistical method for evaluating data and has been around for over 100 years. Likewise, LDA analysis is a statistical method that has been used to evaluate large data sets since the 1930s. Geochemists and groundwater statisticians use these tools because they are effective to evaluate large data sets that are typical for sites that have numerous wells and numerous parameters tested, which result in potentially large data dimensionality.

The data used for this analysis consisted of the data collected from the uppermost aquifer monitoring well network from August 2016 through December 2022 and bottom ash basin water samples from December 2020 through December 2022. Based on the recommendations from the Electric Power Research Institute (EPRI) New Technique in Alternative Source Demonstrations (EPRI, October 2022) guidance and the minimum requirements of LDA, only Appendix III analytes (boron, calcium, chloride, fluoride, sulfate, pH, and total dissolved solids (TDS)) were retained for analysis. Furthermore, it was found that TDS was not consistently reported in all the CCR unit water data and was removed from the analyte suite leaving boron, calcium, chloride, fluoride, sulfate, and pH. Due to the limited number of diversion basin and bottom ash basin samples and the minimum requirements of LDA, the diversion basin and bottom ash basin samples were combined to form a diversion basin and bottom ash basin group for the linear discriminant analysis. Non-detects were multiplied by 0.5 as this has been found to produce the most accurate results for PCA (Farnham et al, 2002).

4.1 Principal Component Analysis

The goal of principal component analysis is to reduce the dimensionality of the data while preserving the variation contained within the dataset. To reduce the dimensionality, the data is linearly transformed from *n* dimensions to *n* linearly transformed dimensions or principal components (PCs). These resulting PCs are ordered in terms of which components contain the most variation of the original dataset from PC1 having the most variation to PC*n* having the least variation. The amount of variation each PC contains can be found in the eigenvalue of the PC, with higher eigenvalues corresponding to a higher percentage of the original dataset variation explained. These eigenvalues can be plotted to compare PCs to each other on what's known as a scree plot. Typically, the first two PCs are retained for further analysis, but any PCs with eigenvalues near or above 1 can be beneficial for analysis. The results of the PCA are commonly presented on a plot that contains both the loading scores of the PCs and the original data points projected using the PCs in what is known as a biplot. The loading scores indicate how much each analyte affects the corresponding PC and the projected points can be used to find clusters of similar data within the original dataset.

Figure 12, called a Scree plot, shows the eigenvalues for the six PCs created from the original data. PC1 and PC2 are above 1 and are therefore retained for further analysis. Figure 13 (Biplot) contains two sets of data, the blue arrows centered around the origin represent the loading scores for the PCs and the colored points represented the projected data. As can be seen in the percentages provided for each axis, PC1 contains 40.91% of the variation of the original dataset, meaning that most of the variation of the data can be seen in the horizontal axis. PC2 contains 28.79% of the variation of the original dataset. Together PC1 and PC2 account for 69.71% of the variation of the original data, showing that the data has been reduced from six dimensions to two dimensions while only losing 30.29% of the variation. There is no established criteria for how much variation is required to be explained by the PCs but at least 70% is a common target which the first two PCs are close to (Jolliffe and Cadima 2016).

Because the data are standardized before PCA is performed, the loading scores are multiplied to the standardized score of each analyte. As can be seen by the arrows in Figure 13 (Biplot), fluoride points almost directly left, meaning that higher than average concentrations of fluoride in a sample would project that sample further to the left on the biplot. Conversely, if a sample has lower than average concentrations of fluoride it would be projected more to the right. From the loading scores we can see that PC1 is strongly influenced by fluoride, chloride, boron, and pH and weakly influenced by calcium, sulfate. PC2 is strongly influenced by calcium and sulfate and weakly influenced by chloride, boron, fluoride, and pH. The standardized data points are projected using the loading scores and are displayed as the color-coded points on the biplot. 95% confidence intervals were calculated to observe possible separation between the groups. As can be seen on the graph, most of the uppermost aquifer groundwater samples fall close to the origin and within the 95% confidence interval with a few outliers. The CCR unit water samples are also located around the origin and the confidence interval encompasses a similar area to the uppermost aquifer groundwater. While this graph does not show the uppermost aquifer groundwater and BABs CCR unit water samples are neatly separated, it does not conclusively show that they are inseparable. Because PCA attempts to preserve the most amount of variation within the data, it is not attempting to separate the groups from each other and can choose a projection which may not separate the groups but does preserve the most variation.

4.2 Linear Discriminant Analysis

In addition to PCA, linear discriminant analysis (LDA) was performed to demonstrate separation between the groups. LDA is similar to PCA in that it performs dimensionality reduction on the data, however, instead of preserving the most amount of variation of the dataset, it attempts to separate the provided groups and then predicts the group membership of each data point. Because LDA is a classification method, we can directly measure the separability of the groups based on the performance of the model. There is an additional requirement of LDA in which each group must have at least as many samples as there are analytes used in the model. Since there are only five samples from the bottom ash basin, four samples from the nearby diversion basin, were added to the bottom ash basin dataset to ensure complete coverage of the six analytes.

Figure 14 (LDA Origin) shows the eigenvalues, canonical coefficients which are analogous to loading scores in PCA, the prediction matrix, and the error rate of the LDA. Because LDA is attempting to separate the groups from each other the percentage of variance shown in the eigenvalues table is the variance between the different groups and not the total variance of the dataset. The canonical variables, which are analogous to PCs, are able to explain all of the variation between groups in just one variable instead of the six variables PCA produced. Similar to PCA, when we observe the standardized canonical coefficients table, we can see that the canonical variable is strongly influenced by chloride and fluoride while only being weakly influenced by boron, calcium, and sulfate; it is insignificantly influenced by pH. The classification count table shows the predicted classification of each point in the columns while the actual classification are the rows. Where the predicted class column intersects the matching actual class row represents the correct classification, where the prediction class column doesn't match the actual class row represents a misclassification. The LDA model only classified the points into the correct classes, demonstrating that the groups are separate from each other, this can also be seen in the error rate table within Figure 14 (LDA Origin) that the total error rate is 0%.

Figure 15, called an LDA Histogram, visually represents where each point is projected to using CV1. The rows represent the true classification of the data within them while the colors represent the model's prediction. As can be seen, the model perfectly separated the groups showing that the groups are distinct from each other. Additionally, an analysis of variance (ANOVA) was performed on the projected data to demonstrate a statistically significant difference between the three groups, the output of this analysis is presented in Figure 16 (LDA ANOVA). As can be seen in the figure, at the $p = 0.05$ level, the population means of the uppermost aquifer groundwater and the BABs and DB CCR units water are significantly different.

5.0 Findings and Conclusions

The data analyzed in this assessment demonstrate that the CCR unit water is not in hydraulic communication with the uppermost aquifer and therefore has not impacted the uppermost aquifer groundwater. Each of the individual analyzes provides a line of evidence in support of this conclusion.

5.1 Geochemistry

The geochemistry data provides three distinct lines of evidence that the uppermost aquifer and the CCR unit are not in communication. The first is the distribution of mass or concentration of individual analytes in the three water groups (uppermost aquifer groundwater, St. Clair River upgradient surface water, and CCR unit water). The second is the geochemical condition of each water group, and the third is calculated environmental conditions calculated from the first two lines of evidence. From a simple perspective it can be seen that the concentrations of individual analytes in the CCR unit water are very different than within the uppermost aquifer groundwater. These differences are not minor. For example, sulfate is 15 times more concentrated in the CCR unit water than the concentration in the uppermost aquifer groundwater. The differences are very apparent in the Piper diagram.

When two water masses become hydraulically connected, they tend to become more like each other chemically and physically. For example, the uppermost aquifer groundwater has more than 67 times more chloride and 16 times more fluoride than the CCR unit water. The chloride and fluoride are not coming from the CCR unit. They are naturally in the uppermost aquifer groundwater.

Geochemical conditions in the CCR unit water are very different from the uppermost aquifer groundwater. The pH of the CCR unit water pH is approximately 9 SU, but the uppermost aquifer groundwater is only 7.8 SU. This means that there are approximately 17 times as many hydroxide ions in the CCR unit water than in the underlying groundwater. Similarly, the ORP of the uppermost aquifer groundwater is significantly higher than the uppermost aquifer groundwater.

The third line of geochemical evidence adds weight to the first two. The minerals which are undersaturated in the uppermost aquifer groundwater have component elements which are higher downgradient, and conversely the minerals which are oversaturated have component elements which are lower downgradient. Therefore, these geochemical calculations represent the natural conditions in the uppermost aquifer groundwater quite well. Therefore, the water geochemistry demonstrates that the uppermost aquifer groundwater and the CCR unit water are not in communication, the existing concentrations of Appendix III and IV analytes in groundwater are geogenic and the uppermost aquifer has not been affected.

5.2 Stable Isotopes

Similar to the multiple lines of evidence described in the preceding section, the stable isotope results reinforce the conclusions described above. The stable isotope analyses provide five distinct lines of evidence ($\delta^{7}Li$, $\delta^{11}B$, $^{87}Sr/^{86}Sr$, $\delta^{2}H$, and $\delta^{18}O$) which unequivocally show that the lithium, boron, strontium, hydrogen, and oxygen in the uppermost aquifer groundwater does not

come from nor is it in communication with the CCR unit water. Not only do the compositions of each of these species fall within well-known natural ranges in the uppermost aquifer groundwater, but each is also statistically different than the corresponding composition in the CCR unit water at 95% confidence intervals. Therefore, the stable isotopes demonstrate that the uppermost aquifer groundwater and the CCR unit water are not in communication and the uppermost aquifer has not been affected.

5.3 Age Dating with Tritium Isotopes

Each of the previously discussed lines of evidence develops different aspects of the CSM and by themselves conclusively show that the CCR unit water is not in communication with the uppermost aquifer and the uppermost aquifer groundwater has not been affected. The tritium data, likewise, reinforces the concept that the uppermost aquifer groundwater is not in communication with the CCR unit. Tritium has a half-life of 12.3 years, and the reporting limit is 0.1 TU. Therefore, groundwater ages up to 95 years in age from recharge should be observable. Based on the results presented within Section 3.3, groundwater within all of the BABs monitoring wells was recharged at least 85 years ago (the BABs entered service 39 years ago). If a significant amount of CCR-impacted water were entering the groundwater, we should see an impact on the tritium concentration. Therefore, the downgradient uppermost aquifer groundwater is not in hydraulic communication with the CCR unit water and the uppermost aquifer has not been affected.

5.4 Statistical Analysis

Principal component analysis was performed on bottom ash basin samples for App III analytes to compare the uppermost aquifer groundwater to the CCR unit water in a holistic manner. The results of the PCA were inconclusive in separating the CCR unit water from the uppermost aquifer groundwater and additional analysis was required.

Linear discriminant analysis was performed to further investigate if the CCR unit water from the uppermost aquifer groundwater are in communication with each other. Linear discriminant analysis is similar to PCA in that they are both dimensionality reduction techniques, but LDA attempts to separate the groups while PCA simply attempts to preserve the variance within the dataset. The model created by the LDA had perfect accuracy and was able to completely separate the groups from each other with a large distance between them. To further provide evidence that the separation is strong, an ANOVA was performed on the data transformed by the LDA. Analysis of variance compares groups of data to each other to determine if it is statistically probable for the data to be from the same population or different populations. The results of the ANOVA showed that at the 95% confidence level, the units are distinct from each other demonstrating that the uppermost aquifer groundwater, and the CCR unit water are not in communication and the uppermost aquifer has not been affected.

5.5 Final Assessment

In conclusion, the data collected in this assessment confirms that the uppermost aquifer is not in hydraulic communication with the CCR unit water. This conclusion is supported by each of the multiple lines of evidence presented in this report:

- The geochemical composition of the uppermost aquifer groundwater is statistically distinct from the CCR unit water;
- The source of lithium, boron, strontium, hydrogen, and oxygen in the uppermost aquifer groundwater is from upgradient groundwater and, as demonstrated by the stable isotope data is distinct from the CCR unit water; and
- Age dating with tritium validates that the uppermost aquifer groundwater is not hydraulically connected to the CCR unit.

These multiple lines of evidence come together in an additive fashion to further validate the CSM established in the ALD and previous studies, which holds that the contiguous glacially compacted natural clay-rich soil natural liner system serves as a natural confining hydraulic barrier isolating the underlying uppermost aquifer from the CCR unit and the uppermost aquifer groundwater is unaffected by the CCR unit water.

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Tables

Table 1
Summary of Field Data – December 2022
Belle River Power Plant Bottom Ash Basins CCR Unit
China Township, Michigan

Sample Location	Sample Date	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	pH (SU)	Specific Conductivity (umhos/cm)	Temperature (deg C)	Turbidity (NTU)
Bottom Ash Basins Monitoring Wells/Uppermost Aquifer							
MW-16-01	12/14/2022	1.31	-110.6	7.8	1,371	9.9	1.54
MW-16-02	12/14/2022	1.28	-72.6	7.6	1,085	10.2	1.85
MW-16-03	12/14/2022	1.23	-128.9	7.9	1,615	10.7	0.91
MW-16-04	12/15/2022	1.15	-176.9	7.8	1,498	11.5	10.6
MW-16-09	12/16/2022	1.37	-117.2	7.8	2,527	9.8	46.9
Bottom Ash Basins Water							
North BAB	12/14/2022	10.21	-4.5	9.3	411	10.5	3.68
Surface Water/St. Clair River							
SC-01	12/16/2022	12.01	5.9	8.3	149	4.5	5.57

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

Table 2
Summary of Analytical Results – December 2020 to December 2022
Belle River Power Plant Bottom Ash Basin CCR Unit
China Township, Michigan

Constituent:		Alkalinity, bicarbonate	Alkalinity, carbonate	Alkalinity, total	Barium	Boron	Calcium	Chloride	Fluoride	Lithium	Magnesium	Molybdenum	Potassium	Sodium	Strontium	Sulfate	Total Organic Carbon
Unit:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sample Location	Sample Date																
Bottom Ash Basins Monitoring Wells/Uppermost Aquifer																	
MW-16-01	12/14/2022	**170**	< 5	**170**	**0.22 F1**	**1.0**	**42**	**450**	**1.8**	**0.015**	**14**	**0.071**	**2.7**	**300**	**1.2**	**9.0**	0.79 J
MW-16-02	12/14/2022	**150**	< 5	**150**	**0.25**	**1.1**	**54**	**350**	**1.2**	**0.015**	**16**	**0.025**	**3.4**	**190**	**1.5**	**9.1**	0.72 J
MW-16-03	12/14/2022	**160**	< 5	**160**	**0.32**	**0.99**	**34**	**550**	**1.8**	**0.020**	**11**	**0.087**	**2.8**	**350**	**0.96**	< 1	0.73 J
MW-16-04	12/15/2022	**160**	< 5	**160**	**0.29**	**1.0**	**46**	**470**	**1.8**	**0.019**	**15**	**0.068**	**3.0**	**300**	**1.2**	**16**	0.75 J
MW-16-09	12/16/2022	**200**	< 5	**200**	**0.22**	**1.4**	**31**	**930**	**1.5**	**0.025**	**9.6**	**0.035**	**2.7**	**580**	**0.84**	**13**	**2.5**
Bottom Ash Basins Water																	
NORTH BAB	1/29/2021	**88**	< 10	**88**	**0.48**	**0.17**	**42**	**9.0**	**0.26**	**0.017**	**8.1**	**0.018**	**3.0**	**28**	--	**100**	--
	12/14/2022	**50**	**47**	**97**	**0.27**	**0.19**	**49**	**8.2**	**0.099**	**0.026**	**8.2**	**0.023**	**3.2**	**49**	**2.0**	**150**	**1.1**
SOUTH BAB	1/29/2021	**46**	**14**	**60**	**0.42**	**0.41**	**29**	**9.6**	**0.52**	< 0.01	**7.4**	**0.024**	**3.8**	**44**	--	**110**	--
BAB-E(1)	12/16/2020	**71**	**20**	**91**	**0.21**	**0.26**	**39**	**8.6**	**0.25**	**0.014**	**7.9**	**0.024**	**3.0**	**29**	--	**94**	**--**
BAB-W(2)	12/16/2020	**83**	< 10	**89**	**0.30**	**0.21**	**54**	**9.9**	**0.22**	**0.013**	**10**	**0.016**	**3.4**	**33**	--	**140**	**--**
Surface Water/St. Clair River																	
SC-01	12/16/2022	**81**	< 5	**81**	**0.013**	< 0.1	**25**	**9.6**	**0.08**	< 0.008	**7.6**	< 0.005	**1.1**	**5.9**	**0.086**	**15**	**1.9**

Notes:

mg/L = milligram per liter, -- = not analyzed.

Bold font denotes concentrations detected above laboratory reporting limits.

J = estimated value. Concentration above the laboratory method detection limit but below the reporting limit.

F1 = MS and/or MSD recovery exceeds control limits

(1) = same location as NORTH BAB, (2) = same location as SOUTH BAB

Table 3
Summary of Stable Isotope and Tritium Results – December 2022
Belle River Power Plant Bottom Ash Basins CCR Unit
China Township, Michigan

Constituent:		$\delta^{87}Sr$	$\delta^{11}B$	$\delta^{7}Li$	$\delta^{2}H$	$\delta^{18}O$	Tritium
Units:		‰	‰	‰	‰	‰	TU
Sample Location	Sample Date						
Bottom Ash Basins Monitoring Wells/Uppermost Aquifer							
MW-16-01	12/14/2022	**0.709290**	**39.26**	**31.21**	**-103.940542**	**-14.96447**	<0.1
MW-16-02	12/14/2022	**0.709517**	**39.32**	**30.67**	**-104.862778**	**-15.035052**	<0.1
MW-16-03	12/14/2022	**0.709430**	**39.49**	**29.15**	**-102.293772**	**-14.683754**	<0.1
MW-16-04	12/15/2022	**0.709343**	**40.63**	**28.75**	**-102.675451**	**-14.665324**	<0.1
MW-16-09	12/16/2022	**0.709459**	**43.49**	**29.89**	**-112.022478**	**-15.80079**	**0.18**
Bottom Ash Basins Water							
North BAB	12/14/2022	**0.708901**	**-0.81**	**-0.13**	**-54.318947**	**-7.441738**	**26.4**
Surface Water/St. Clair River							
SC-01	12/16/2022	**0.709999**	**-4.82**	**20.80**	**-53.700517**	**-7.358694**	**23.9**

Notes:

‰ = per mil

TU = Tritium Units

Bold font denotes concentrations detected above laboratory reporting limits.

Table 6

Summary Calculated Mineral Saturation – December 2022

Belle River Power Plant – RCRA CCR Monitoring Program

China Township, Michigan

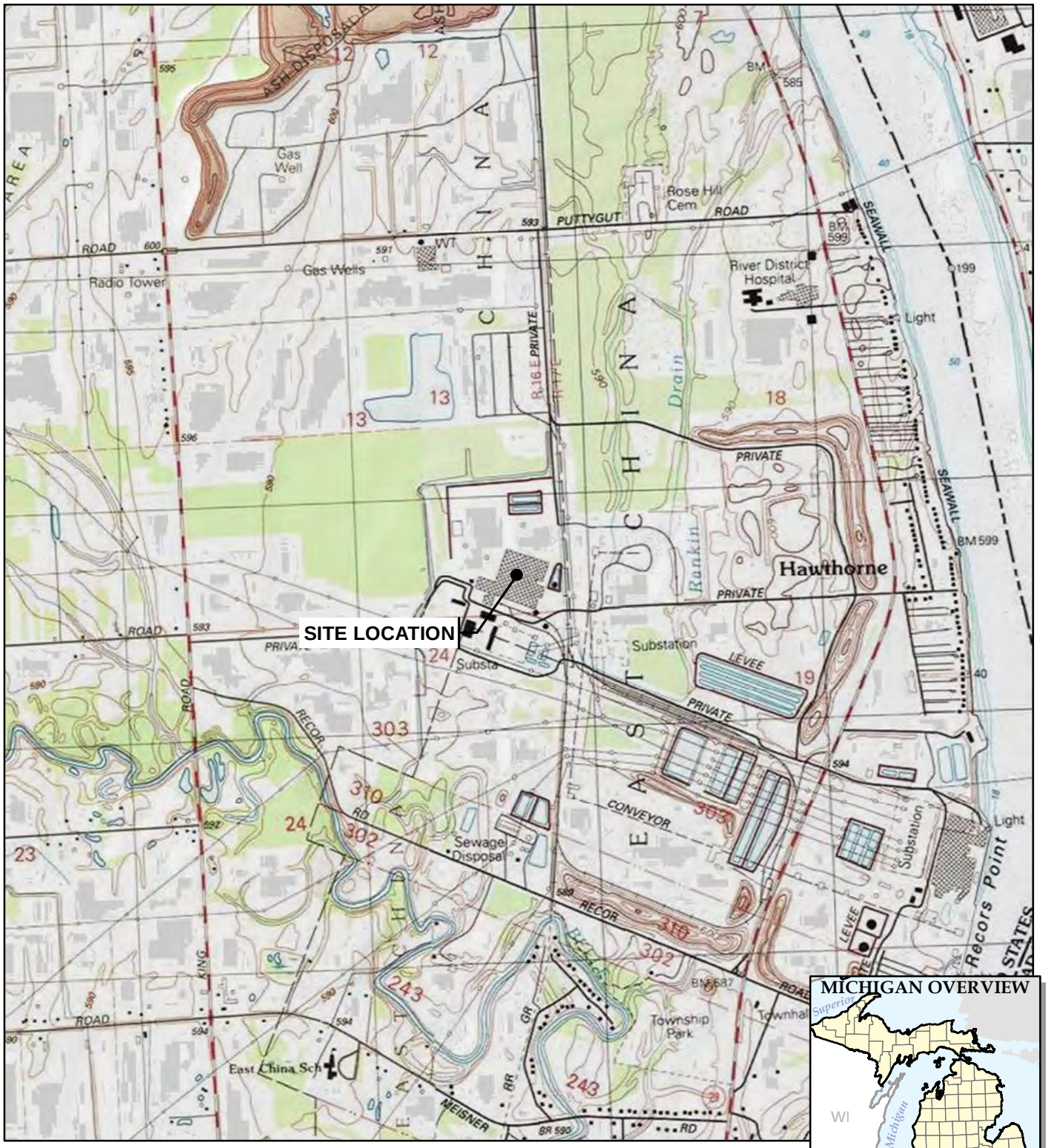
Sample Location	Unit	MW-16-01	MW-16-02	MW-16-03	MW-16-04	MW-16-09	North BAB	SC-01	N BAB MW Avg
Alstonite (BaCa(CO3)2)	log Q/K	-1.45	-1.53	-1.46	-1.41	-3.87	-1.28	-3.70	-1.94
Anhydrite (CaSO4)	log Q/K	-3.40	-3.25	-4.45	-3.11	-3.48	-2.00	-3.17	-3.54
Antarcticite ($CaCl_2 \cdot 6H_2O$)	log Q/K	-11.18	-11.26	-11.12	-11.12	-10.77	-14.53	-14.52	-11.09
Aragonite ($CaCO_3$)	log Q/K	0.05	0.03	-0.08	0.03	-1.24	0.16	-0.59	-0.24
Arcanite (K2SO4)	log Q/K	-10.80	-10.58	-11.74	-10.49	-10.71	-9.34	-11.05	-10.86
Artinite ($Mg_2(OH)_2 \cdot 3H_2O$)	log Q/K	-6.69	-6.85	-6.85	-6.68	-10.30	-6.62	-8.28	-7.47
Ba(OH)2^8H2O	log Q/K	-15.06	-15.16	-14.84	-14.97	-17.22	-14.54	-16.76	-15.45
BaCl2(c)	log Q/K	-12.28	-12.42	-11.96	-12.13	-11.73	-15.68	-16.70	-12.10
BaCl2^2H2O	log Q/K	-9.98	-10.12	-9.68	-9.86	-9.43	-13.39	-14.30	-9.81
BaCl2^H2O	log Q/K	-10.73	-10.86	-10.41	-10.59	-10.18	-14.12	-15.09	-10.55
BaF2(c)	log Q/K	-8.41	-8.68	-8.27	-8.31	-8.64	-10.84	-12.14	-8.46
BaO(c)	log Q/K	-40.34	-40.41	-40.02	-40.05	-42.51	-39.75	-42.76	-40.67
Barite (BaSO4)	log Q/K	-0.08	0.00	-0.90	0.25	-0.01	1.25	-0.72	-0.15
Barytocalcite ($BaCa(CO_3)_2$)	log Q/K	-1.61	-1.69	-1.62	-1.57	-4.03	-1.44	-3.86	-2.10
BaS(c)	log Q/K	-165.10	-164.80	-165.30	-163.60	-165.10	-165.20	-171.10	-164.78
Bassanite ($CaSO_4 \cdot 1/2H_2O$)	log Q/K	-4.03	-3.88	-5.08	-3.74	-4.11	-2.63	-3.81	-4.17
Bischofite ($MgCl_2 \cdot 6H_2O$)	log Q/K	-12.04	-12.17	-11.97	-11.96	-11.64	-15.68	-15.52	-11.96
Bloedite (Bloedite)	log Q/K	-13.69	-13.97	-15.58	-13.18	-13.12	-12.85	-16.48	-13.91
Borax ($Na_2H_{20}B_4O_{17}$)	log Q/K	-20.14	-20.52	-19.76	-20.13	-21.05	-24.14	-28.18	-20.32
Boric acid (H3BO3)	log Q/K	-5.02	-4.97	-4.96	-4.99	-4.86	-5.74	-6.10	-4.96
Brucite ($Mg(OH)_2$)	log Q/K	-4.94	-5.03	-4.95	-4.89	-7.25	-4.66	-5.84	-5.41
Burkeite (Na6(CO3)(SO4)2)	log Q/K	-23.66	-24.96	-25.27	-23.35	-22.88	-25.74	-33.11	-24.02
Ca(OH)2(c)	log Q/K	-11.01	-11.04	-11.00	-10.93	-13.31	-10.41	-11.90	-11.46
Ca2Cl2(OH)2^H2O	log Q/K	-21.50	-21.62	-21.45	-21.40	-23.39	-24.26	-25.61	-21.87
Ca4Cl2(OH)6^13H2O	log Q/K	-37.53	-37.78	-37.63	-37.60	-44.01	-39.23	-42.36	-38.91
CaCl2^2H2O	log Q/K	-15.64	-15.71	-15.54	-15.52	-15.23	-18.96	-19.15	-15.53
CaCl2^4H2O	log Q/K	-12.11	-12.19	-12.03	-12.03	-11.70	-15.45	-15.50	-12.01
CaCl2^H2O	log Q/K	-15.84	-15.91	-15.75	-15.72	-15.44	-19.16	-19.38	-15.73
Calcite (CaCO3)	log Q/K	0.21	0.20	0.09	0.20	-1.07	0.32	-0.42	-0.07
Carnallite (KMgCl3·6(H2O))	log Q/K	-17.91	-18.04	-17.75	-17.79	-17.22	-23.19	-23.29	-17.74
CaSO4^1/2H2O(beta)	log Q/K	-4.22	-4.07	-5.27	-3.92	-4.30	-2.82	-4.00	-4.36
Celestite (SrSO4)	log Q/K	-2.94	-2.81	-4.00	-2.70	-3.03	-1.40	-3.59	-3.09
Chloromagnesite (MgCl2)	log Q/K	-30.83	-30.93	-30.69	-30.61	-30.44	-34.42	-34.81	-30.70
Colemanite (Ca2B6O11·5H2O)	log Q/K	-27.62	-27.42	-27.35	-27.43	-31.25	-30.82	-35.51	-28.21
Dolomite (CaMg(CO3)2)	log Q/K	1.01	0.93	0.75	0.98	-1.57	0.92	-0.36	0.42
Dolomite-dis (CaMg(CO3)2)	log Q/K	-0.65	-0.72	-0.90	-0.67	-3.23	-0.73	-2.06	-1.23
Dolomite-ord (CaMg(CO3)2)	log Q/K	1.01	0.93	0.75	0.98	-1.57	0.92	-0.36	0.42
Epsomite (MgSO4·7H2O)	log Q/K	-5.86	-5.77	-6.93	-5.60	-5.96	-4.78	-5.63	-6.02
Fe(OH)3(ppd)	log Q/K	2.56	2.65	2.46	2.56	3.61	1.52	2.70	2.77
Fe2(SO4)3(c)	log Q/K	-47.51	-46.71	-50.66	-46.43	-38.78	-47.02	-45.35	-46.02
FeF3(c)	log Q/K	-8.83	-9.00	-9.03	-8.77	-4.90	-14.29	-11.87	-8.11
Ferrite-2-Ca (Ca2Fe2O5)	log Q/K	-19.27	-19.15	-19.45	-19.07	-21.79	-20.16	-20.98	-19.75
Ferrite-Ca (Ca(FeO2)2)	log Q/K	5.16	5.30	4.94	5.21	4.95	3.65	4.63	5.11
Ferrite-Mg (MgFe2O4)	log Q/K	5.22	5.31	5.00	5.28	5.00	3.41	4.57	5.16
Fluorite (CaF2)	log Q/K	-0.24	-0.46	-0.35	-0.23	-0.61	-2.63	-2.89	-0.38
Gaylussite ($Na_2Ca(CO_3)_2 \cdot 5H_2O$)	log Q/K	-6.53	-7.10	-6.63	-6.76	-8.35	-8.01	-10.50	-7.07
Goethite (α-FeO(OH))	log Q/K	7.12	7.21	7.01	7.10	8.17	6.07	7.33	7.32
Graphite (C)	log Q/K	-77.98	-77.85	-77.81	-77.47	-77.02	-79.15	-80.55	-77.63
Gypsum (CaSO 4·2H2O)	log Q/K	-3.07	-2.93	-4.13	-2.79	-3.15	-1.68	-2.79	-3.21
Halite (NaCl)	log Q/K	-5.44	-5.74	-5.29	-5.43	-4.87	-7.94	-8.73	-5.36
Hematite (Fe2O3)	log Q/K	15.16	15.33	14.93	15.12	17.25	13.05	15.54	15.56
Hexahydrite (MgSO4 · 6H2O)	log Q/K	-6.20	-6.12	-7.27	-5.93	-6.30	-5.12	-6.01	-6.36
Huntite (Mg3Ca(CO3)4)	log Q/K	-4.42	-4.62	-4.92	-4.44	-9.60	-4.89	-7.41	-5.60
Hydroboracite (CaMgB6O8(OH)6·3H2O)	log Q/K	-24.04	-23.95	-23.93	-24.16	-27.66	-27.66	-30.94	-24.75
Hydromagnesite ($Mg_5(CO_3)_4(OH)_2 \cdot 4H_2O$)	log Q/K	-14.04	-14.38	-14.55	-14.01	-21.54	-14.54	-18.02	-15.70
Hydrophilite (CaCl2)	log Q/K	-19.69	-19.75	-19.58	-19.54	-19.28	-23.00	-23.32	-19.57
Jarosite-K (KFe3(SO4)2(OH)6)	log Q/K	-5.11	-4.44	-7.41	-4.49	1.39	-6.25	-3.65	-4.01
Jarosite-Na (NaFe3(SO4)2(OH)6)	log Q/K	-5.05	-4.72	-7.40	-4.68	1.74	-7.13	-4.23	-4.02
K2CO3^3/2H2O	log Q/K	-16.14	-16.08	-16.17	-16.17	-17.25	-15.97	-17.16	-16.36
K8H4(CO3)6^3H2O	log Q/K	-58.65	-58.37	-59.01	-58.89	-61.07	-58.94	-62.46	-59.20
Kainite (KMg(SO4)Cl·3H2O)	log Q/K	-13.90	-13.81	-14.87	-13.56	-13.71	-14.45	-15.72	-13.97
Kalicinite (KHCO3)	log Q/K	-6.64	-6.60	-6.72	-6.69	-6.69	-6.80	-7.08	-6.67
Kieserite (MgSO4·H2O)	log Q/K	-8.10	-8.01	-9.14	-7.78	-8.20	-7.00	-8.07	-8.25
KMgCl3	log Q/K	-36.19	-36.30	-35.96	-35.94	-35.51	-41.43	-42.06	-35.98
KMgCl3^2H2O	log Q/K	-28.36	-28.49	-28.17	-28.17	-27.69	-33.62	-34.04	-28.18
KNaCO3^6H2O	log Q/K	-9.81	-10.07	-9.84	-9.98	-10.63	-10.54	-11.82	-10.07
Leonhardtite (MgSO4•4H2O)	log Q/K	-7.12	-7.02	-8.17	-6.82	-7.21	-6.03	-6.99	-7.27
Lime (CaO)	log Q/K	-21.73	-21.75	-21.70	-21.59	-24.04	-21.11	-22.86	-22.16
Magnesite (MgCO3)	log Q/K	-0.93	-0.99	-1.05	-0.93	-2.23	-1.12	-1.70	-1.23
Mercallite (KHSO4)	log Q/K	-14.72	-14.51	-15.70	-14.43	-13.56	-13.57	-14.37	-14.58
Mg2Cl(OH)3^4H2O	log Q/K	-11.62	-11.84	-11.66	-11.61	-14.89	-13.07	-14.35	-12.32
MgCl2^2H2O	log Q/K	-21.10	-21.22	-20.99	-20.94	-20.71	-24.72	-24.84	-20.99
MgCl2^4H2O	log Q/K	-15.22	-15.35	-15.14	-15.11	-14.83	-18.86	-18.80	-15.13
MgCl2^H2O	log Q/K	-24.70	-24.82	-24.58	-24.52	-24.31	-28.31	-28.54	-24.59
MgF2(c)	log Q/K	-3.59	-3.86	-3.70	-3.56	-3.98	-6.28	-6.43	-3.74
MgOHCl	log Q/K	-14.56	-14.66	-14.50	-14.44	-15.52	-16.22	-16.94	-14.74
MgSO4(c)	log Q/K	-13.59	-13.49	-14.61	-13.24	-13.69	-12.48	-13.69	-13.72
MHSH(Mg1.5)	log Q/K	-11.78	-11.72	-12.82	-11.42	-13.03	-10.54	-12.25	-12.15
Mirabilite (Na2SO4·10H2O)	log Q/K	-6.40	-6.79	-7.26	-6.23	-5.74	-6.67	-9.14	-6.48
Misenite (K8H8(SO4)7)	log Q/K	-97.94	-96.50	-104.80	-95.98	-90.94	-89.64	-95.91	-97.23
Molysite (FeCl3)	log Q/K	-36.52	-36.45	-36.39	-36.26	-31.43	-43.37	-41.01	-35.41
Monohydrocalcite (CaCO3·H2O)	log Q/K	-0.75	-0.77	-0.88	-0.77	-2.04	-0.64	-1.38	-1.04
Na3H(SO4)2	log Q/K	-20.96	-21.44	-22.74	-20.51	-18.86	-20.94	-24.83	-20.90
NaFeO2(c)	log Q/K	-7.15	-7.33	-7.13	-7.11	-6.89	-8.71	-9.17	-7.12
Nesquehonite (MgCO3 · 3H2O)	log Q/K	-4.05	-4.11	-4.16	-4.03	-5.35	-4.23	-4.91	-4.34
Pentahydrite (MgSO4•5(H2O))	log Q/K	-6.53	-6.44	-7.59	-6.26	-6.62	-5.44	-6.33	-6.69
Pirssonite (Na2Ca(CO3)2•2(H2O))	log Q/K	-7.27	-7.83	-7.34	-7.44	-9.09	-8.73	-11.45	-7.79
Portlandite (Ca(OH)2)	log Q/K	-11.01	-11.04	-11.00	-10.93	-13.31	-10.41	-11.90	-11.46
Sr(OH)2(c)	log Q/K	-17.03	-17.08	-17.02	-16.98	-19.35	-16.29	-18.93	-17.49
SrCl2(c)	log Q/K	-16.60	-16.69	-16.51	-16.52	-16.20	-19.78	-21.06	-16.50
SrCl2^2H2O	log Q/K	-11.62	-11.71	-11.54	-11.58	-11.22	-14.81	-15.95	-11.53
SrCl2^6H2O	log Q/K	-9.41	-9.51	-9.35	-9.40	-9.01	-12.61	-13.62	-9.33
SrCl2^H2O	log Q/K	-13.23	-13.32	-13.15	-13.18	-12.84	-16.43	-17.62	-13.14
SrF2(c)	log Q/K	-4.64	-4.88	-4.75	-4.66	-5.03	-6.88	-8.27	-4.79
SrO(c)	log Q/K	-32.45	-32.48	-32.39	-32.30	-34.77	-31.67	-34.67	-32.88
SrS(c)	log Q/K	-165.40	-165.00	-165.90	-164.00	-165.60	-165.20	-171.40	-165.18
Strontianite (SrCO3)	log Q/K	1.35	1.32	1.21	1.27	0.06	1.60	-0.14	1.05
Sulfur-Rhmb (S)	log Q/K	-112.60	-112.20	-113.20	-111.50	-110.40	-112.80	-115.40	-111.98
Sylvite (KCl)	log Q/K	-6.96	-6.96	-6.87	-6.92	-6.67	-8.60	-8.89	-6.88
Tachyhydrite (CaMg2Cl6·12H2O)	log Q/K	-40.06	-40.39	-39.83	-39.78	-38.86	-50.67	-50.56	-39.78
Thenardite (Na2SO4)	log Q/K	-7.95	-8.32	-8.77	-7.71	-7.29	-8.20	-10.93	-8.01
Witherite (BaCO3)	log Q/K	2.52	2.44	2.62	2.54	1.38	2.56	1.00	2.30

Notes:

Positive values are oversaturated and may precipitate out of solution

Negative values are undersaturated and may dissolve into solution

Figures



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

1 " = 2,000 '
1:24,000

0 2,000 4,000
FEET

TRC

1540 Eisenhower Place
Ann Arbor, MI 48108-3284
Phone: 734.971.7080
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TRC - GIS

PROJECT:

DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT
4505 KING ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:

SITE LOCATION MAP

DRAWN BY:	A. FOJTIK
CHECKED BY:	J. KRENZ
APPROVED BY:	V. BUENING
DATE:	JANUARY 2023
PROJ. NO.:	461816.0003
FILE:	461816-0003_001.mxd

FIGURE 1

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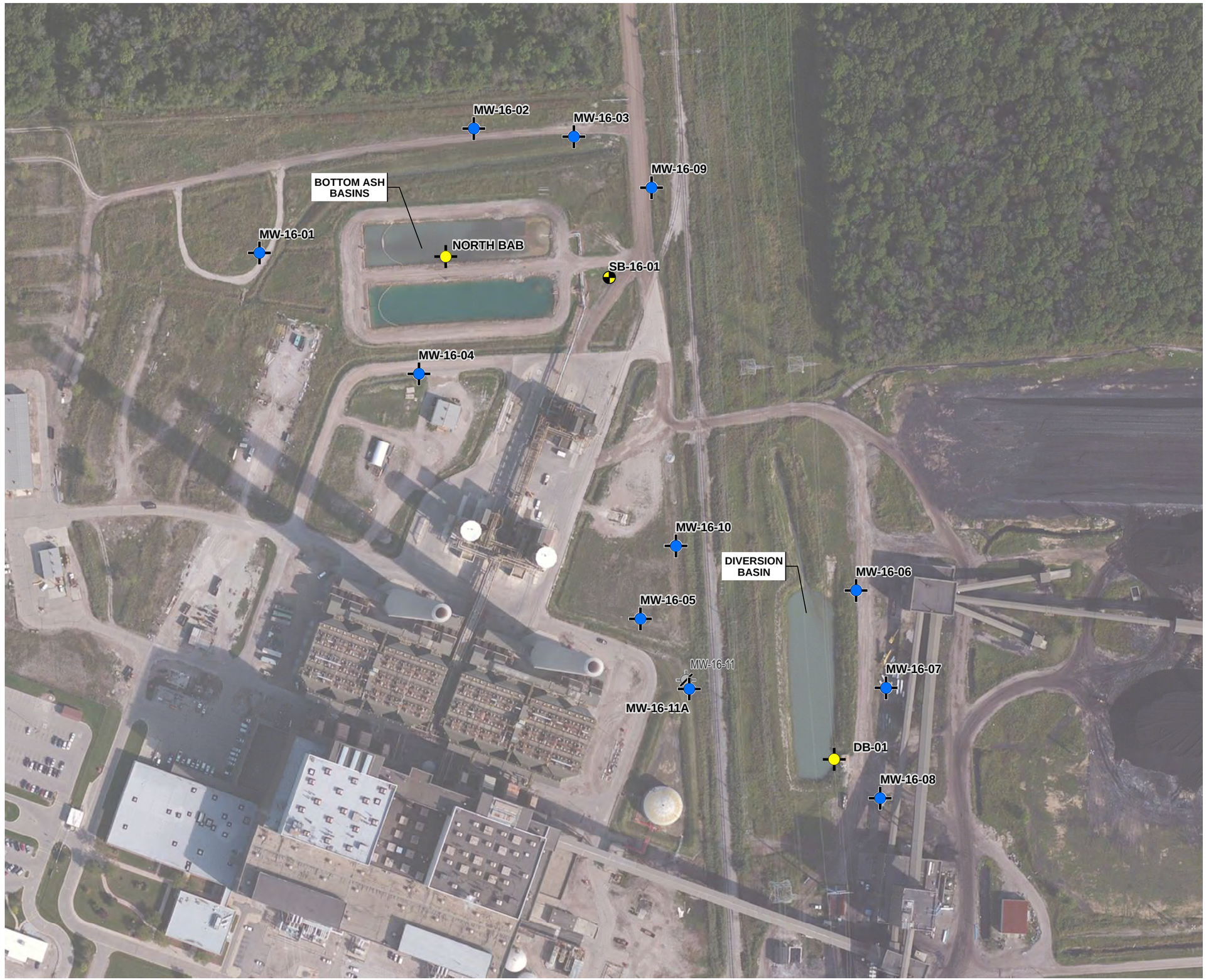

LEGEND

- SOIL BORING
- SURFACE WATER SAMPLE POINT
- MONITORING WELL
- DECOMMISSIONED MONITORING WELL

NOTES

1. BASE MAP IMAGERY FROM ESRI WORLD IMAGERY, (08/13/2021).
2. WELL LOCATIONS SURVEYED IN MARCH, APRIL, JUNE 2016, AND JUNE 2017 BY BMJ ENGINEERS & SURVEYORS, INC.

N

0 200 400 Feet

1 " = 200 '
1:2,400

PROJECT:
DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT
4505 KING ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
SITE PLAN

DRAWN BY:	A. ADAIR	PROJ NO.:	522172.0000
CHECKED BY:	J. KRENZ		
APPROVED BY:	V. BUENING		**FIGURE 2**
DATE:	JANUARY 2023		

TRC
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Ann Arbor, MI 48108-3284
Phone: 734.971.7080
www.trccompanies.com

FILE NO.: 522172-0003_002.mxd

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Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

TRC - GIS

LEGEND

SURFACE WATER SAMPLE POINT

NOTES

1. BASE MAP IMAGERY FROM ESRI WORLD IMAGERY, (08/13/2021).
2. SURFACE WATER SAMPLE LOCATION IS APPROXIMATE.

N

0 2,000 4,000 Feet

1 " = 2,000 '
1:24,000

PROJECT:	DTE ELECTRIC COMPANY BELLE RIVER POWER PLANT 4505 KING ROAD CHINA TOWNSHIP, MICHIGAN
TITLE:	OFFSITE SURFACE WATER SAMPLE LOCATION
DRAWN BY: A. ADAIR	PROJ NO.: 522171.0000
CHECKED BY: J. KRENZ	FIGURE 3
APPROVED BY: V. BUENING	
DATE: JANUARY 2023	

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

FILE NO.: 522172-0003_003.mxd

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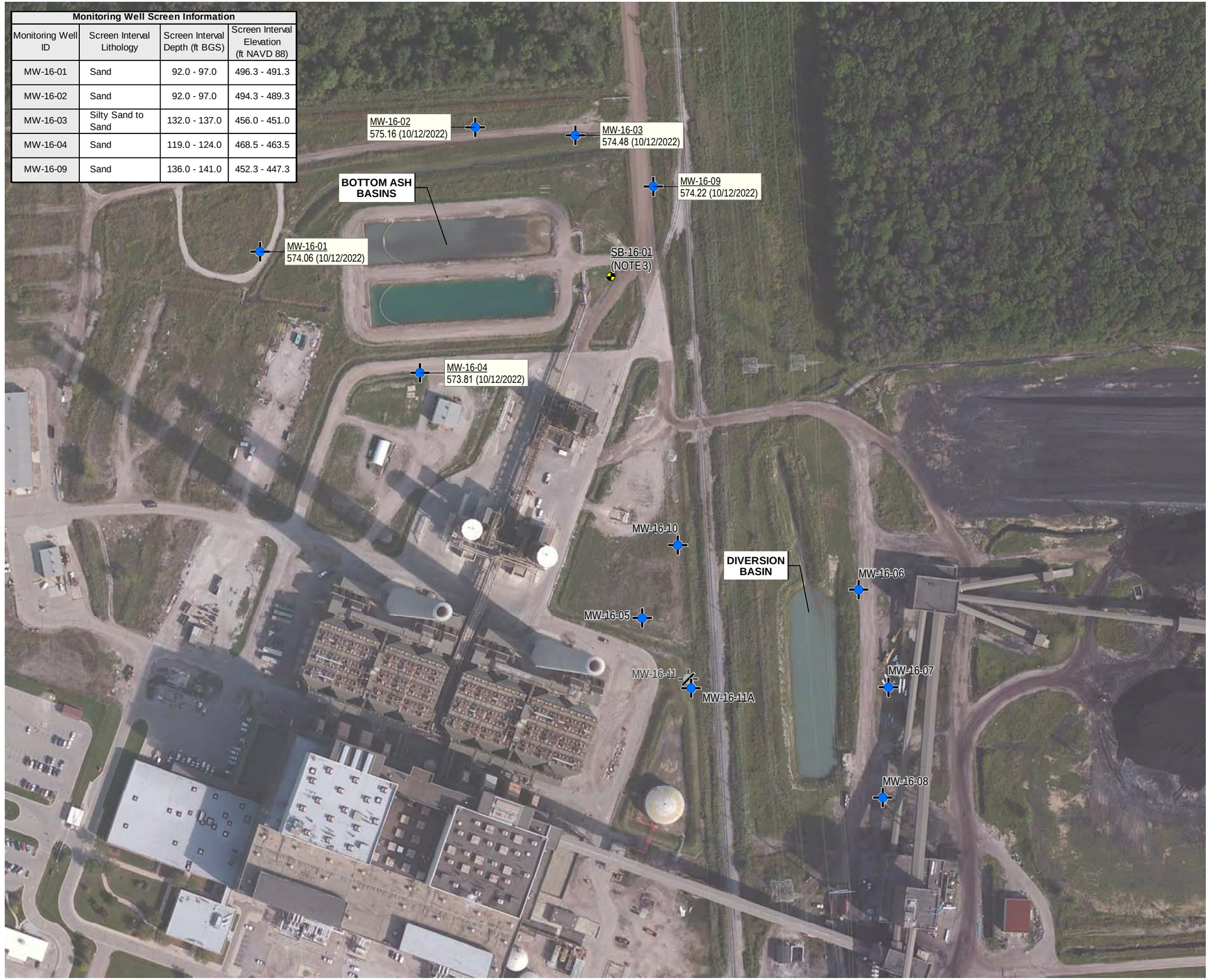
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

TRC - GIS

TRC - GIS

Monitoring Well Screen Information			
Monitoring Well ID	Screen Interval Lithology	Screen Interval Depth (ft BGS)	Screen Interval Elevation (ft NAVD 88)
MW-16-01	Sand	92.0 - 97.0	496.3 - 491.3
MW-16-02	Sand	92.0 - 97.0	494.3 - 489.3
MW-16-03	Silty Sand to Sand	132.0 - 137.0	456.0 - 451.0
MW-16-04	Sand	119.0 - 124.0	468.5 - 463.5
MW-16-09	Sand	136.0 - 141.0	452.3 - 447.3



LEGEND

- SOIL BORING
- MONITORING WELL
- DECOMMISSIONED MONITORING WELL

MW ID
GROUNDWATER ELEVATION (DATE)

FT BGS
FEET BELOW GROUND SURFACE
FT NAVD 88
ELEVATION RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, (3/23/2019).
2. WELL LOCATIONS SURVEYED IN MARCH, APRIL AND JUNE 2016 AND JUNE 2017 BY BMJ ENGINEERS & SURVEYORS, INC.
3. NO SAND OR GRAVEL UNIT PRESENT ABOVE BEDROCK IN THIS LOCATION.

N

0 200 400 Feet

1 " = 200 '
1:2,400

PROJECT:
DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT BOTTOM ASH BASIN
4505 KING ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
BOTTOM ASH BASINS GROUNDWATER POTENTIOMETRIC ELEVATION SUMMARY OCTOBER 2022

DRAWN BY:	A. FOJTIK	PROJ NO.:	413591.0003
CHECKED BY:	J. KRENZ		**FIGURE 4**
APPROVED BY:	V. BUENING		
DATE:	JANUARY 2023		

1540 Eisenhower Place
Ann Arbor, MI 48108-3284
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FILE NO.: 413591.0003-004_20211124.mxd

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Map Rotation: 0

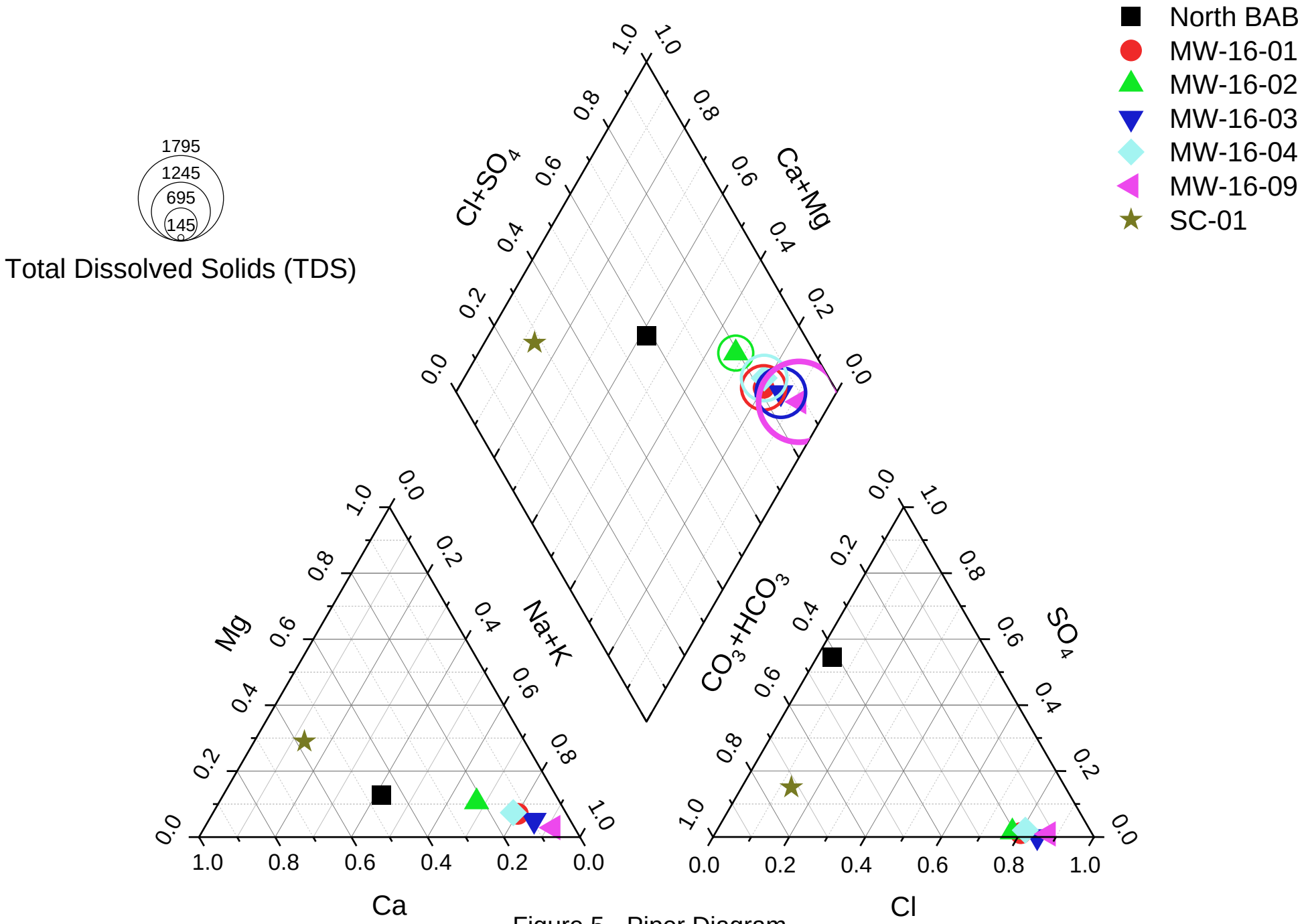
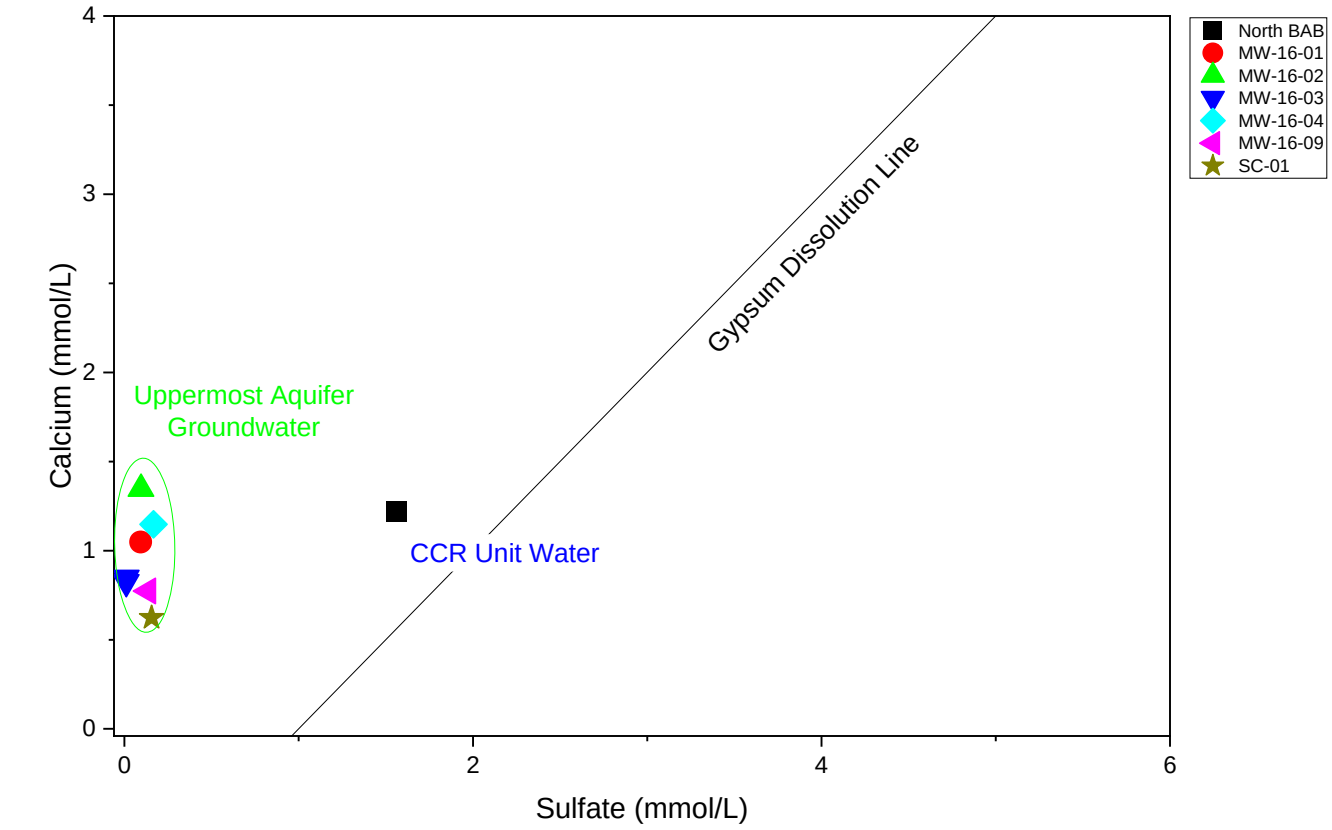


Figure 5 - Piper Diagram
Belle River Power Plant
4505 King Rd, China Township, Michigan

Figure 6
Summary of Calcium and Sulfate Saturation with Chloride and Sulfate Concentrations
Belle River Power Plant
4505 King Rd, China Township, Michigan



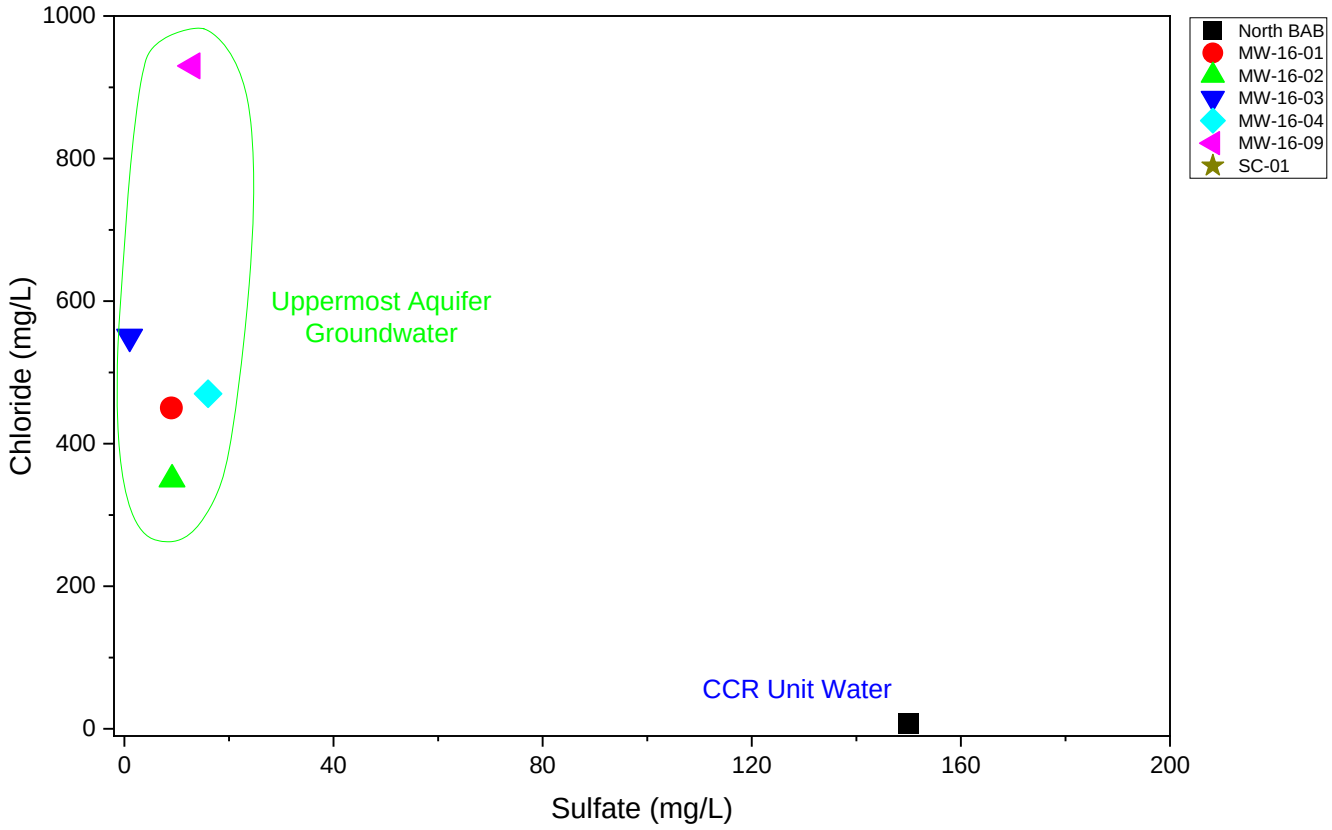
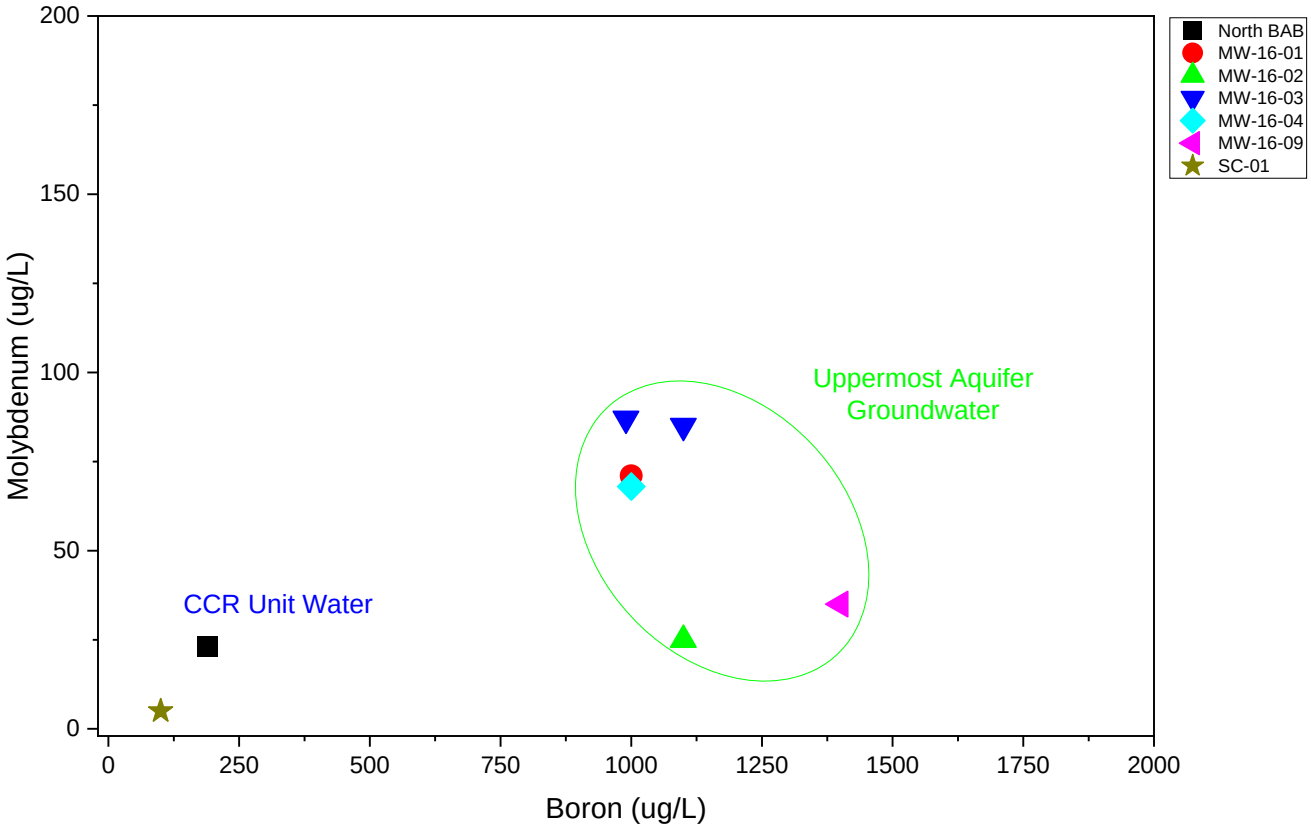


Figure 7
Molybdenum and Barium with Boron Concentrations
Belle River Power Plant
4505 King Rd, China Township, Michigan



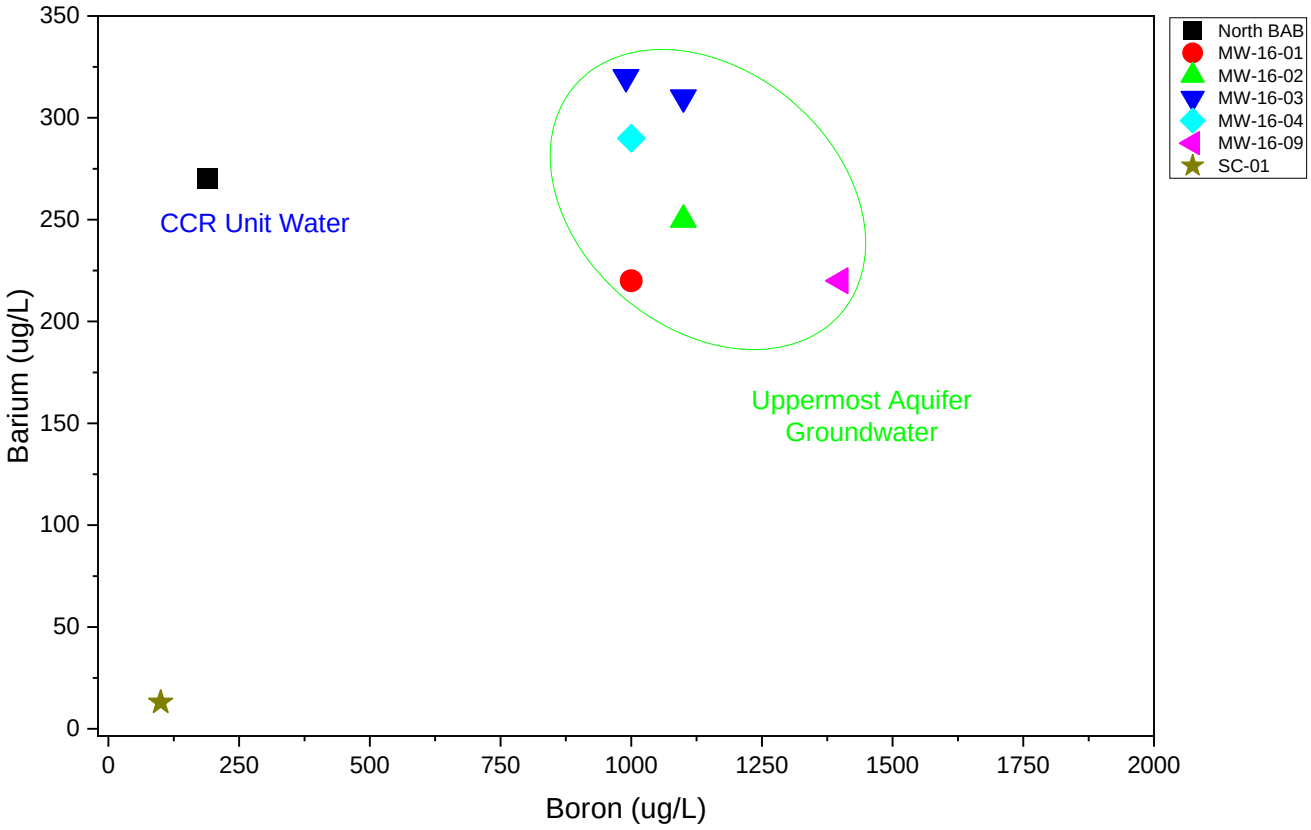
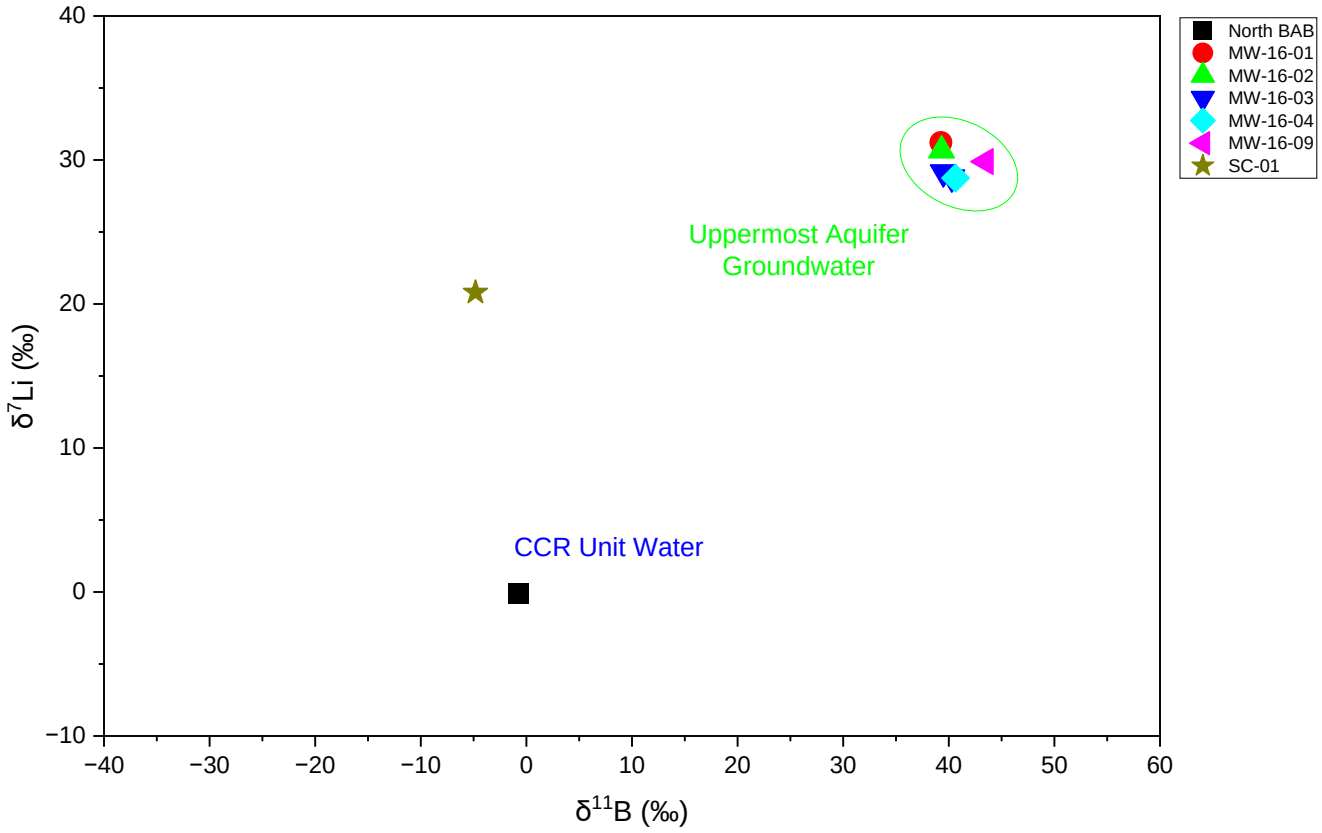


Figure 8
Lithium and Boron Isotopic Compositions and Concentrations
Belle River Power Plant
4505 King Rd, China Township, Michigan



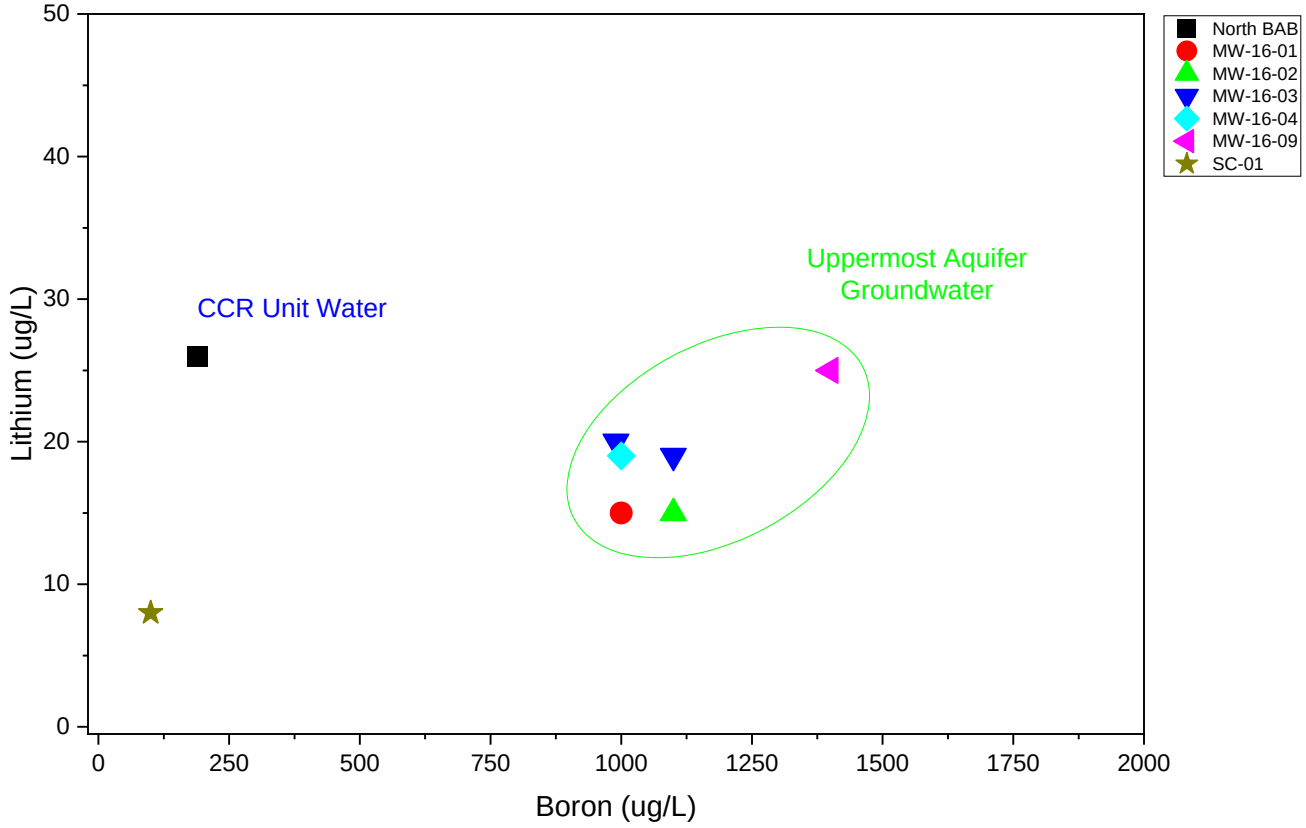
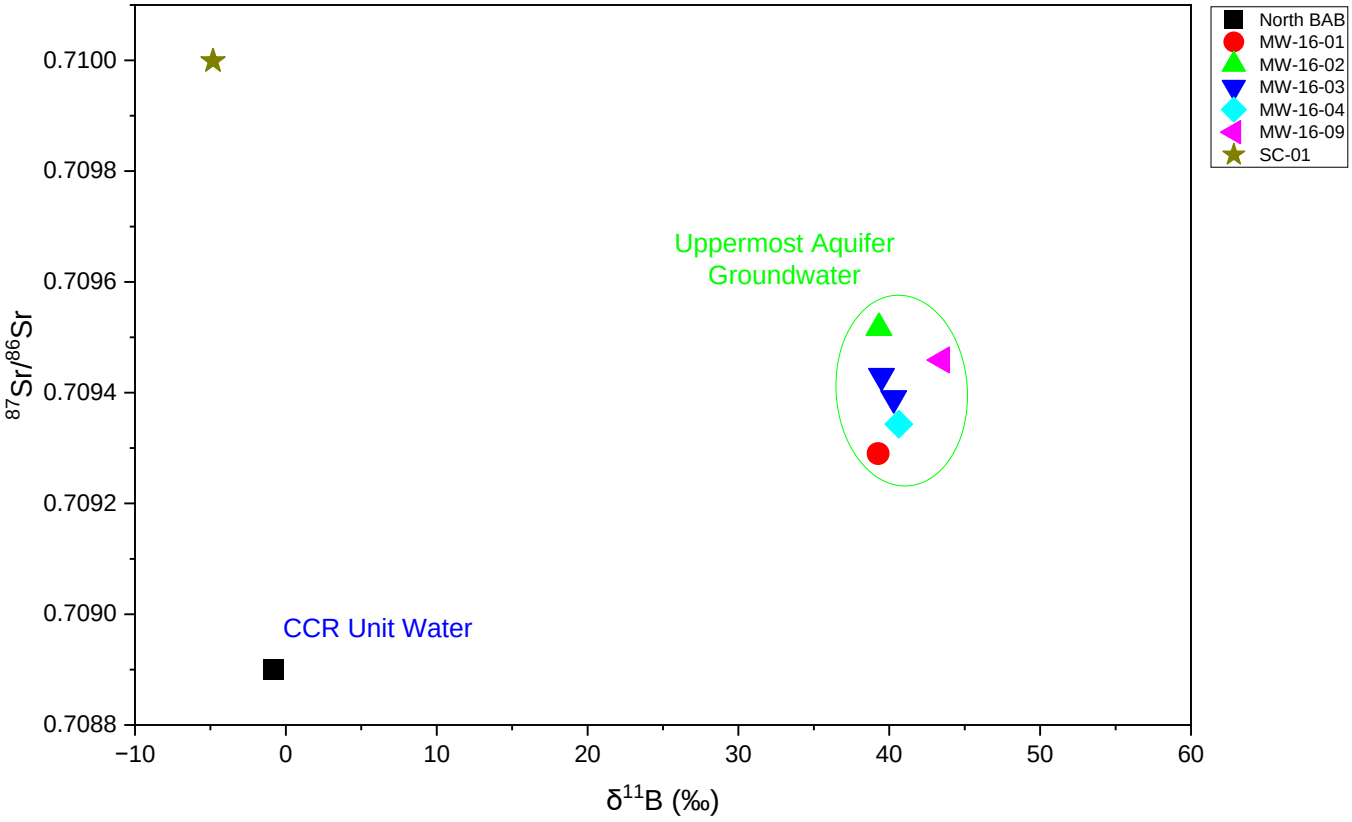


Figure 9
Strontium and Boron Isotopic Compositions and Concentrations
Belle River Power Plant
4505 King Rd, China Township, Michigan



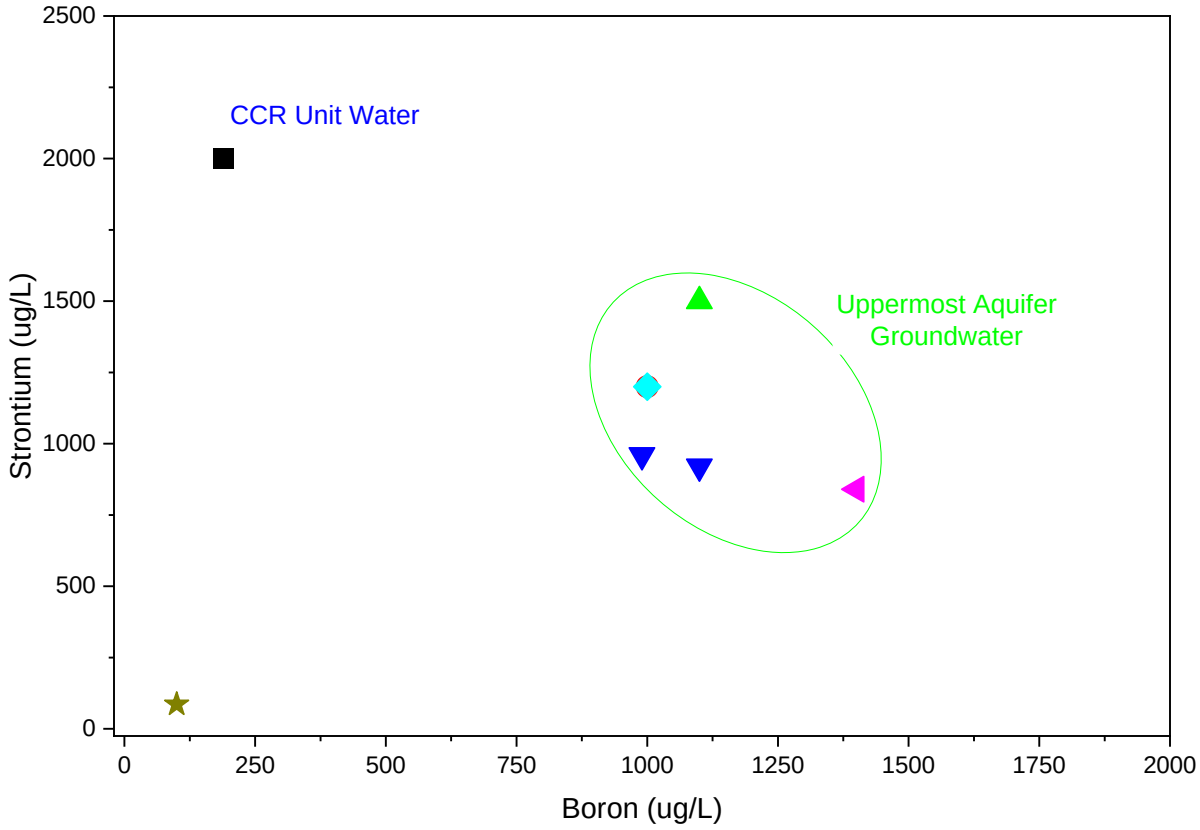
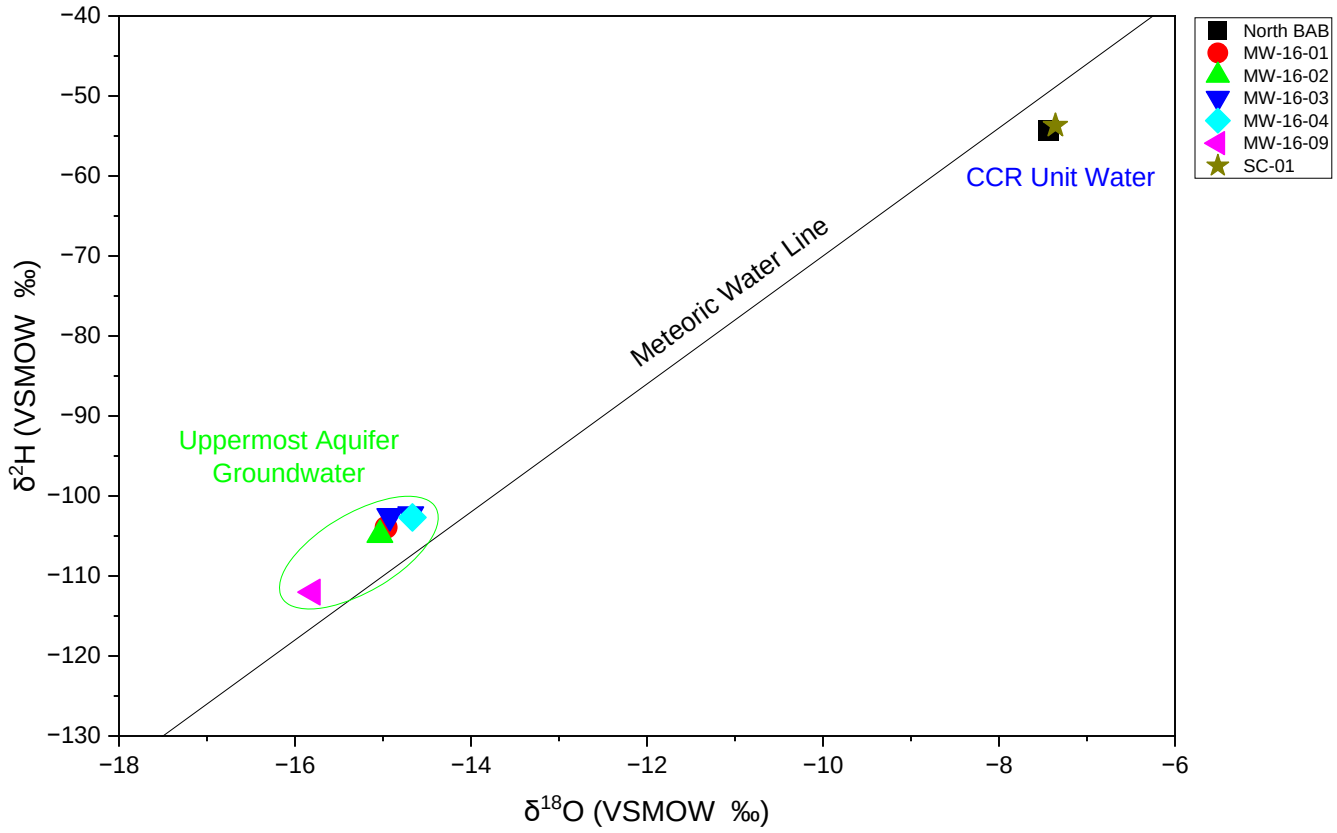


Figure 10
Hydrogen and Oxygen Isotopic Compositions and Carbonate Saturation
Belle River Power Plant
4505 King Rd, China Township, Michigan



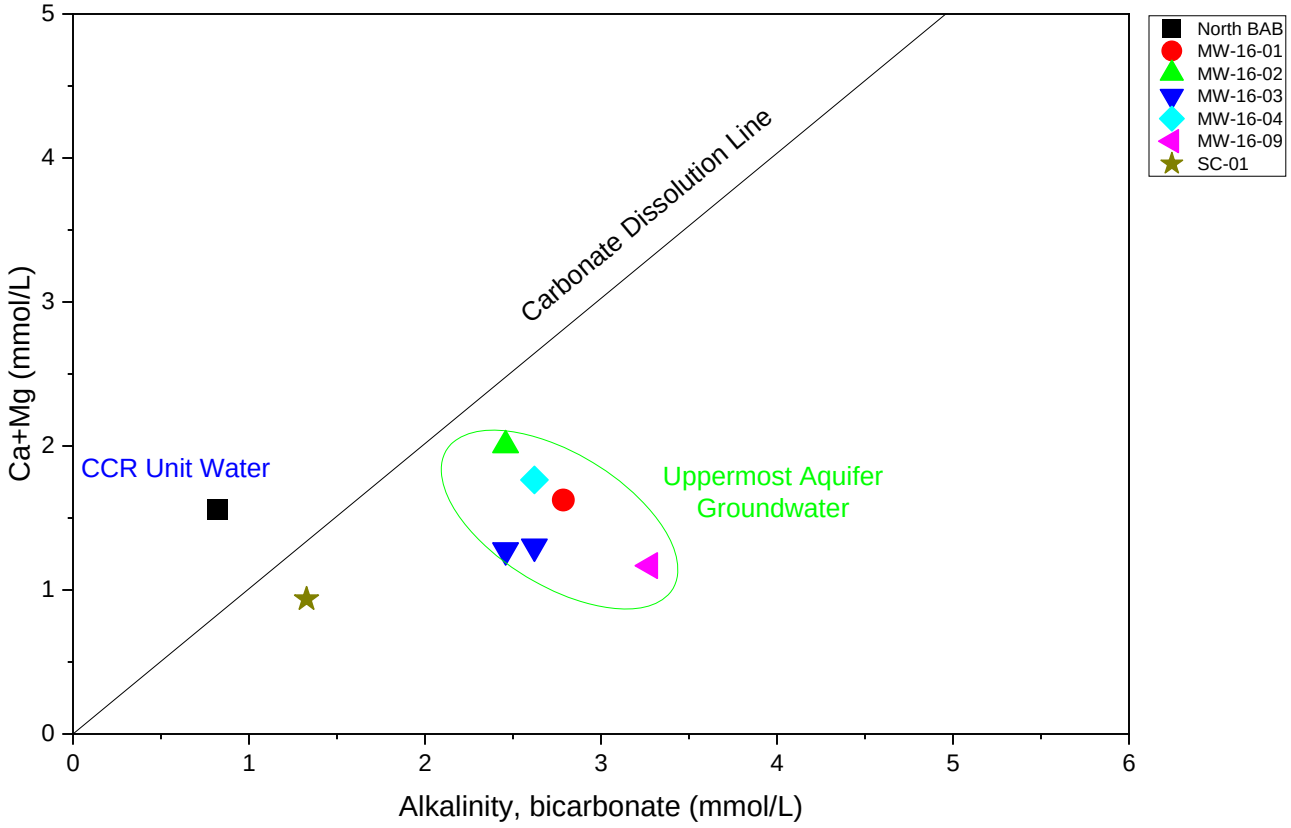
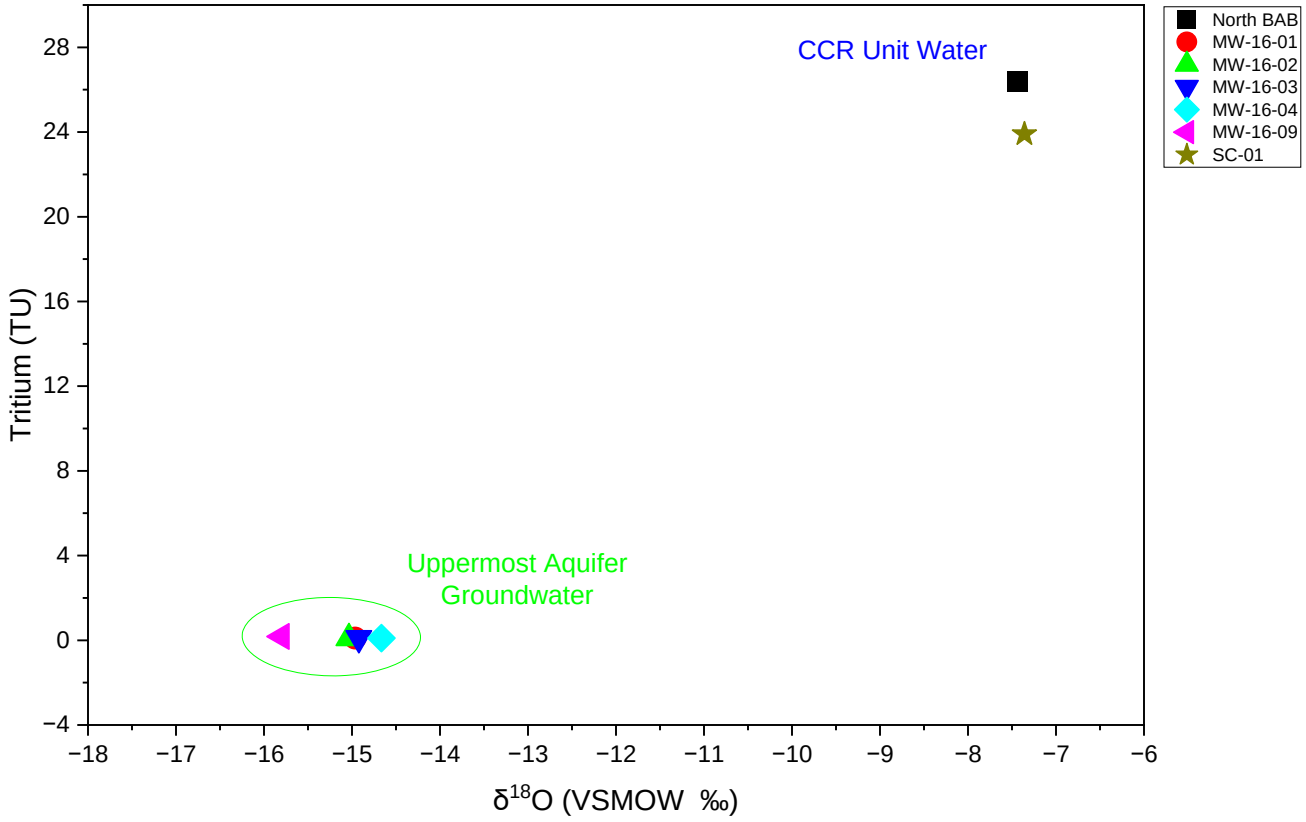


Figure 11
Tritium Data and Age Model
Belle River Power Plant
4505 King Rd, China Township, Michigan



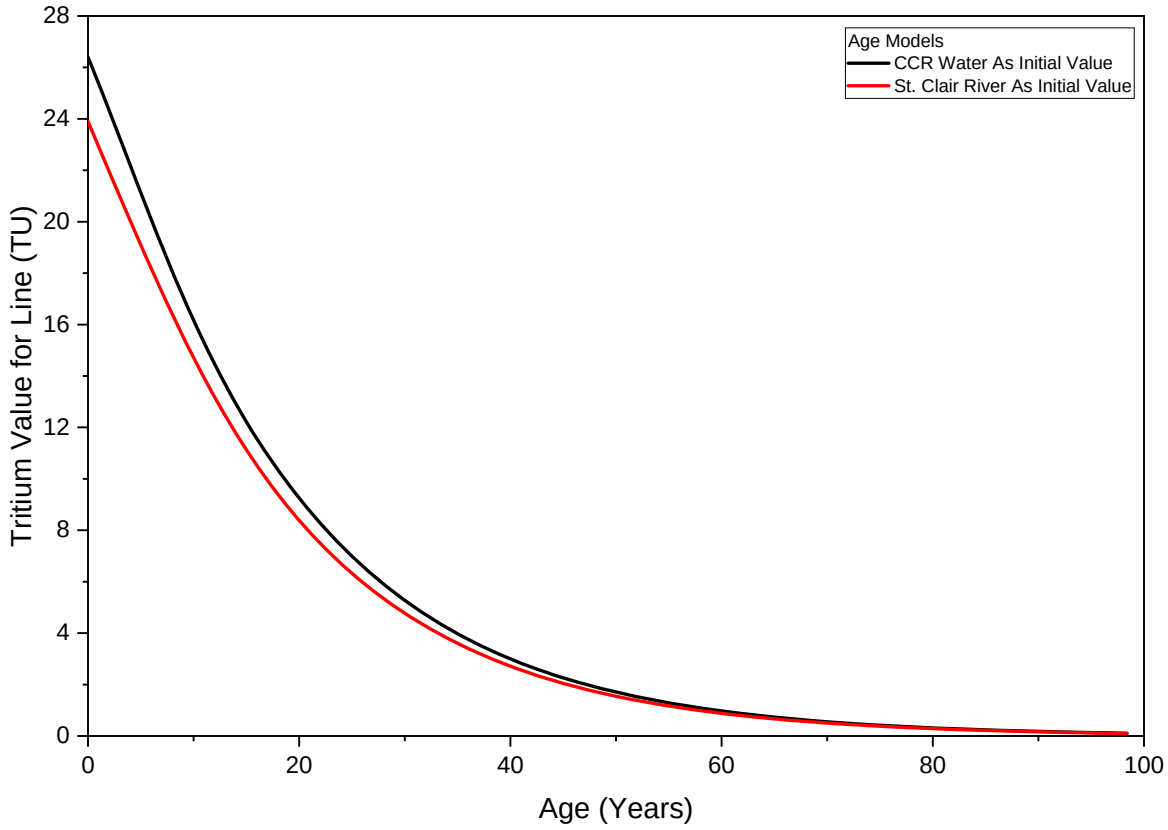


Figure 12 - Scree Plot
Belle River Power Plant Bottom Ash Basin CCR Unit
4505 King Road, China Township, Michigan

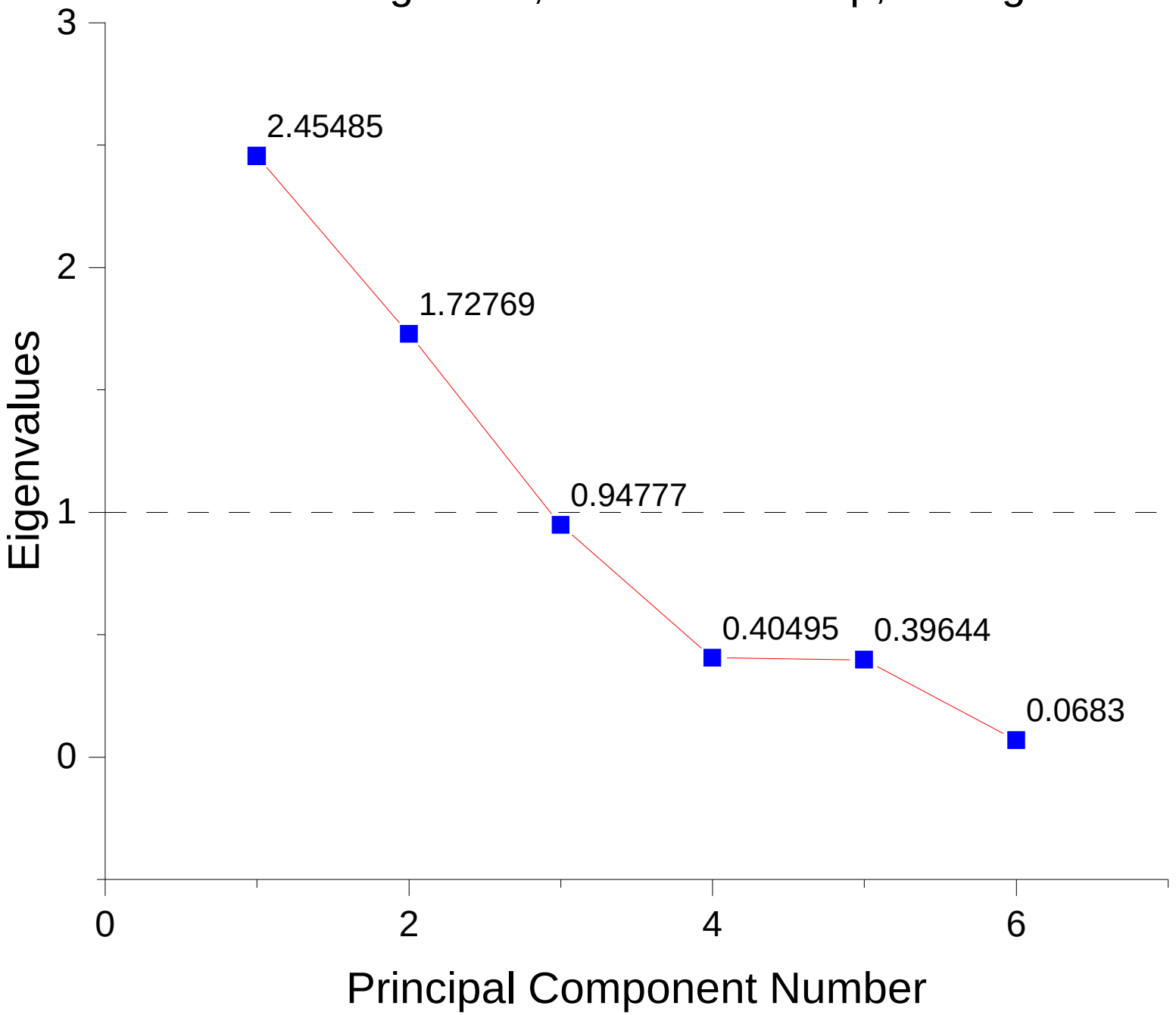


Figure 13 - Biplot
Belle River Power Plant Bottom Ash Basin CCR Unit
4505 King Road, China Township, Michigan

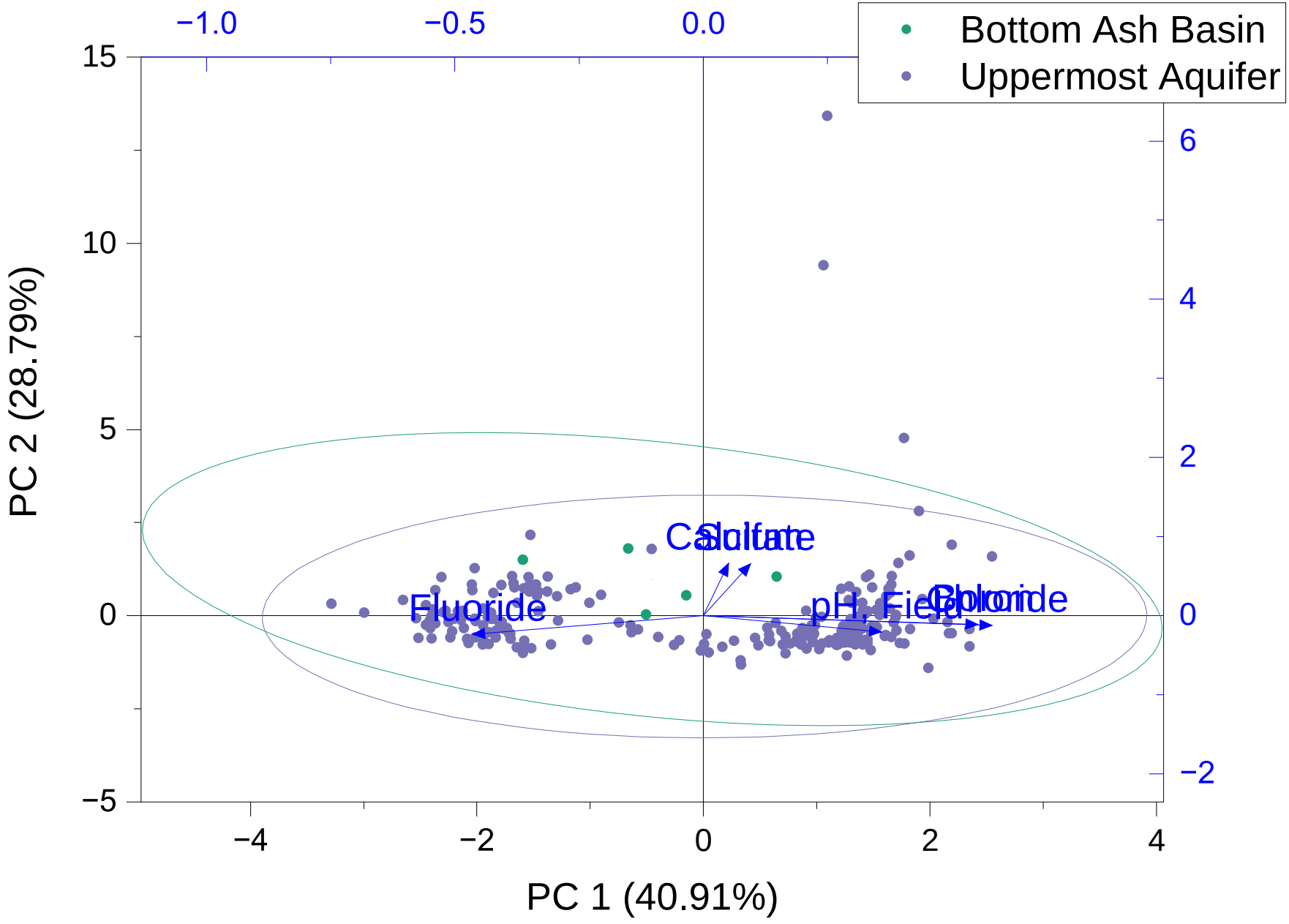


Figure 14 - BRPP LDA Origin

Discriminant Analysis (3/24/2023 15:04:1

Canonical Discriminant Analysis

Eigenvalues

	Eigenvalue	Percentage of Variance	Cumulative	Canonical Correlation
1	1.23366	100.00%	100.00%	0.74317

Standardized Canonical Coefficients

	Canonical Variable 1
Boron	-0.22198
Calcium	0.34127
Chloride	1.19871
Fluoride	1.11313
pH, Field	-2.95507E-7
Sulfate	-0.3104

Classification Summary for Training Data

Classification Count

		Predicted Group		
		BAB and DB	Uppermost Aquifer	Total
BAB and DB		9	0	9
		100.00%	0.00%	100.00%
Uppermost Aquifer		0	229	229
		0.00%	100.00%	100.00%
Total		9	229	238
		3.78%	96.22%	100.00%

Error Rate

	BAB and DB	Uppermost Aquifer	Total
Prior	0.5	0.5	
Rate	0.00%	0.00%	0.00%

Error rate for classification of training data is 0.00%.

Figure 15 − Belle River Power Plant Density of LDA Scores

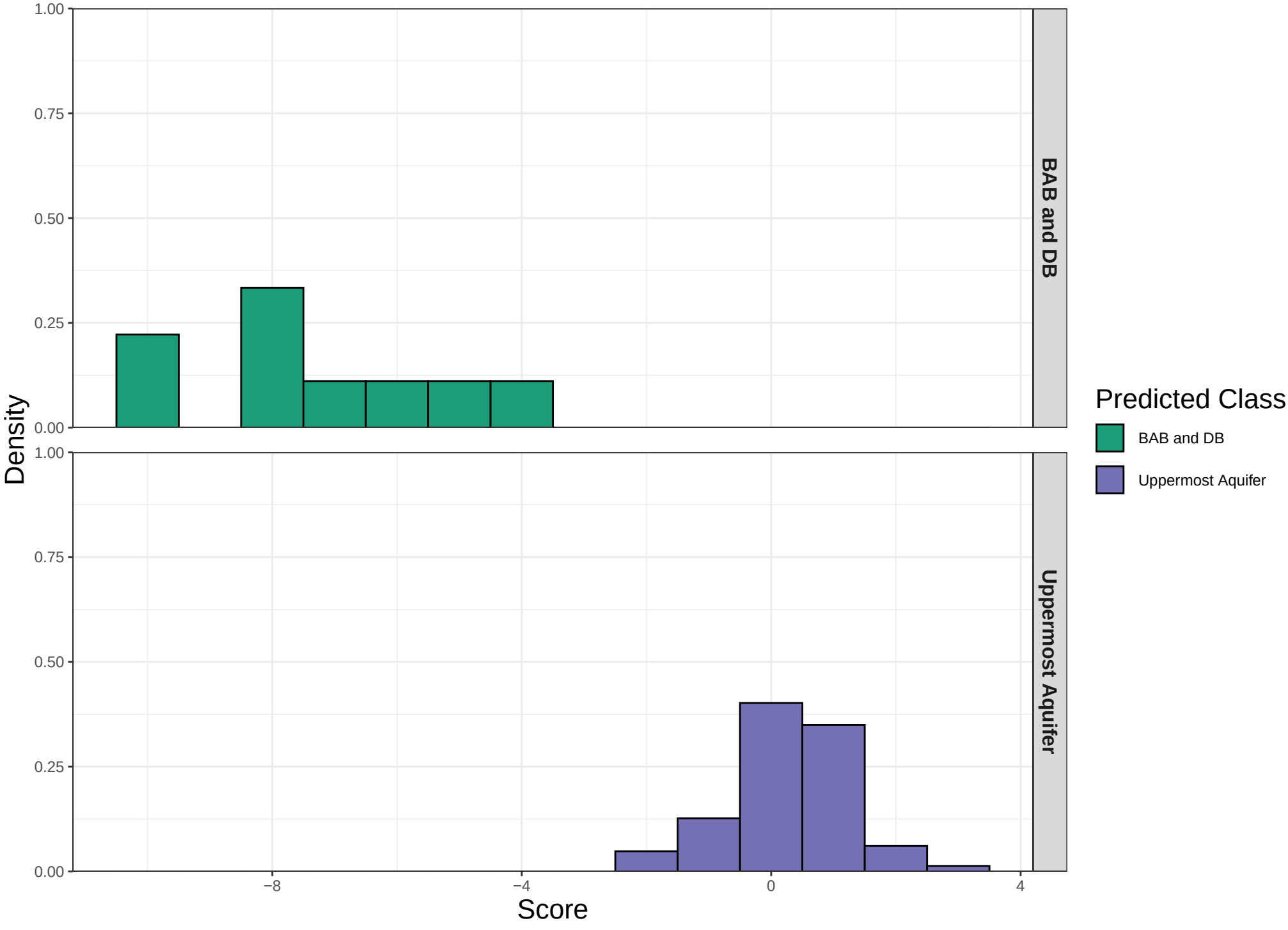


Figure 16 - BRPP LDA ANOVA

ANOVAOneWay (3/24/2023 15:07:06

Descriptive Statistics

	N Analysis	N Missing	Mean	Standard Deviation	SE of Mean
BAB and DB	9	0	-5.57907	1.75276	0.58425
Uppermost Aquifer	229	0	0.21926	0.96296	0.06363

One Way ANOVA

Overall ANOVA

	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	1	291.14412	291.14412	291.14412	<0.0001
Error	236	236	1		
Total	237	527.14412			

Null Hypothesis: The means of all levels are equal.

Alternative Hypothesis: The means of one or more levels are different.

At the 0.05 level, the population means are significantly different.

Appendix A
December 2022 Laboratory Data

ALS Environmental

05-Jan-2021

Michael Coram
Geosyntec Consultants
2100 Commonwealth Blvd.
Suite 100
Ann Arbor, MI 48105

Re: **DTE- Belle River (GLP-8017)** Work Order: **20121752**

Dear Michael,

ALS Environmental received 3 samples on 18-Dec-2020 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 21.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

ALS Group, USA

Date: 05-Jan-21

Client: Geosyntec Consultants
Project: DTE- Belle River (GLP-8017)
Work Order: **20121752**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
20121752-01	BAB-E	Groundwater		12/16/2020 15:00	12/18/2020 10:00	☐
20121752-02	BAB-W	Groundwater		12/16/2020 14:00	12/18/2020 10:00	☐
20121752-03	DB	Groundwater		12/16/2020 16:00	12/18/2020 10:00	☐

Client:	Geosyntec Consultants
Project:	DTE- Belle River (GLP-8017)
Work Order:	20121752

Case Narrative

Samples for the above noted Work Order were received on 12/18/2020. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Metals:
No other deviations or anomalies were noted.

Wet Chemistry:

Batch R306912, Method SW9040C, Sample BAB-E (20121752-01B): pH is considered a "field test" and, as such, the recommended sample holding time expired prior to sample receipt.

Batch R306912, Method SW9040C, Sample BAB-W (20121752-02B): pH is considered a "field test" and, as such, the recommended sample holding time expired prior to sample receipt.

Batch R306912, Method SW9040C, Sample DB (20121752-03B): pH is considered a "field test" and, as such, the recommended sample holding time expired prior to sample receipt.

Batch R307145, Method SW9056A, Sample 20121752-03B MSD: The MSD recovery was outside of the control limit for Sulfate; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required.

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
°C	Degrees Celcius
mg/L	Milligrams per Liter
s.u.	Standard Units

ALS Group, USA

Date: *05-Jan-21*

Client: Geosyntec Consultants
Project: DTE- Belle River (GLP-8017)
Work Order: 20121752
Sample ID: BAB-E
Lab ID: 20121752-01
Collection Date: 12/16/2020 03:00 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			**SW7470A**		Prep: SW7470 12/30/20 13:08	Analyst: **MAC**
Mercury	ND		0.00020	mg/L	1	12/30/2020 01:26 PM
METALS BY ICP-MS			**SW6020B**		Prep: SW3005A 12/30/20 15:00	Analyst: **STP**
Antimony	ND		0.0050	mg/L	1	12/30/2020 09:06 PM
Arsenic	ND		0.0050	mg/L	1	12/30/2020 09:06 PM
Barium	**0.21**		**0.0050**	**mg/L**	1	12/30/2020 09:06 PM
Beryllium	ND		0.0020	mg/L	1	12/30/2020 09:06 PM
Boron	**0.26**		**0.020**	**mg/L**	1	12/30/2020 09:06 PM
Cadmium	ND		0.0020	mg/L	1	12/30/2020 09:06 PM
Calcium	**39**		**0.50**	**mg/L**	1	12/30/2020 09:06 PM
Chromium	ND		0.0050	mg/L	1	12/30/2020 09:06 PM
Cobalt	ND		0.0050	mg/L	1	12/30/2020 09:06 PM
Iron	ND		0.080	mg/L	1	12/30/2020 09:06 PM
Lead	ND		0.0050	mg/L	1	12/30/2020 09:06 PM
Lithium	**0.014**		**0.010**	**mg/L**	1	12/30/2020 09:06 PM
Magnesium	**7.9**		**0.20**	**mg/L**	1	12/30/2020 09:06 PM
Manganese	ND		0.0050	mg/L	1	12/30/2020 09:06 PM
Molybdenum	**0.024**		**0.0050**	**mg/L**	1	12/30/2020 09:06 PM
Potassium	**3.0**		**0.20**	**mg/L**	1	12/30/2020 09:06 PM
Selenium	ND		0.0050	mg/L	1	12/30/2020 09:06 PM
Sodium	**29**		**0.20**	**mg/L**	1	12/30/2020 09:06 PM
Thallium	ND		0.0050	mg/L	1	12/30/2020 09:06 PM
ALKALINITY			**A2320 B-11**			Analyst: **QTN**
Alkalinity, Bicarbonate (as CaCO3)	**71**		**10**	**mg/L**	1	12/29/2020 11:55 AM
Alkalinity, Carbonate (as CaCO3)	**20**		**10**	**mg/L**	1	12/29/2020 11:55 AM
Alkalinity, Hydroxide (as CaCO3)	ND		10	mg/L	1	12/29/2020 11:55 AM
Alkalinity, Phenolphthalein (as CaCO3	**10**		**10**	**mg/L**	1	12/29/2020 11:55 AM
Alkalinity, Total (as CaCO3)	**91**		**10**	**mg/L**	1	12/29/2020 11:55 AM
ANIONS BY ION CHROMATOGRAPHY			**SW9056A**			Analyst: **JDR**
Chloride	**8.6**		**1.0**	**mg/L**	1	12/30/2020 07:11 PM
Fluoride	**0.25**		**0.10**	**mg/L**	1	12/30/2020 07:11 PM
Sulfate	**94**		**8.0**	**mg/L**	8	12/31/2020 02:59 PM
PH (LABORATORY)			**SW9040C**			Analyst: **QTN**
pH (laboratory)	**8.84**	H	**0.100**	**s.u.**	1	12/29/2020 11:55 AM
Temperature	**20.8**	H	**0.100**	**°C**	1	12/29/2020 11:55 AM
TOTAL DISSOLVED SOLIDS			**A2540 C-11**		Prep: FILTER 12/22/20 11:40	Analyst: **AJS**
Total Dissolved Solids	**240**		**50**	**mg/L**	1	12/23/2020 02:50 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Geosyntec Consultants
Project: DTE- Belle River (GLP-8017) **Work Order:** 20121752
Sample ID: BAB-W **Lab ID:** 20121752-02
Collection Date: 12/16/2020 02:00 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			**SW7470A**		Prep: SW7470 12/30/20 13:08	Analyst: **MAC**
Mercury	ND		0.00020	mg/L	1	12/30/2020 01:28 PM
METALS BY ICP-MS			**SW6020B**		Prep: SW3005A 12/30/20 15:00	Analyst: **STP**
Antimony	ND		0.0050	mg/L	1	12/30/2020 09:08 PM
Arsenic	ND		0.0050	mg/L	1	12/30/2020 09:08 PM
Barium	**0.30**		**0.0050**	**mg/L**	1	12/30/2020 09:08 PM
Beryllium	ND		0.0020	mg/L	1	12/30/2020 09:08 PM
Boron	**0.21**		**0.020**	**mg/L**	1	12/30/2020 09:08 PM
Cadmium	ND		0.0020	mg/L	1	12/30/2020 09:08 PM
Calcium	**54**		**0.50**	**mg/L**	1	12/30/2020 09:08 PM
Chromium	ND		0.0050	mg/L	1	12/30/2020 09:08 PM
Cobalt	ND		0.0050	mg/L	1	12/30/2020 09:08 PM
Iron	**0.28**		**0.080**	**mg/L**	1	12/31/2020 05:14 PM
Lead	ND		0.0050	mg/L	1	12/30/2020 09:08 PM
Lithium	**0.013**		**0.010**	**mg/L**	1	12/30/2020 09:08 PM
Magnesium	**10**		**0.20**	**mg/L**	1	12/30/2020 09:08 PM
Manganese	**0.0078**		**0.0050**	**mg/L**	1	12/30/2020 09:08 PM
Molybdenum	**0.016**		**0.0050**	**mg/L**	1	12/30/2020 09:08 PM
Potassium	**3.4**		**0.20**	**mg/L**	1	12/30/2020 09:08 PM
Selenium	ND		0.0050	mg/L	1	12/30/2020 09:08 PM
Sodium	**33**		**0.20**	**mg/L**	1	12/30/2020 09:08 PM
Thallium	ND		0.0050	mg/L	1	12/30/2020 09:08 PM
ALKALINITY			**A2320 B-11**			Analyst: **QTN**
Alkalinity, Bicarbonate (as CaCO3)	**83**		**10**	**mg/L**	1	12/29/2020 11:55 AM
Alkalinity, Carbonate (as CaCO3)	ND		10	mg/L	1	12/29/2020 11:55 AM
Alkalinity, Hydroxide (as CaCO3)	ND		10	mg/L	1	12/29/2020 11:55 AM
Alkalinity, Phenolphthalein (as CaCO3)	ND		10	mg/L	1	12/29/2020 11:55 AM
Alkalinity, Total (as CaCO3)	**89**		**10**	**mg/L**	1	12/29/2020 11:55 AM
ANIONS BY ION CHROMATOGRAPHY			**SW9056A**			Analyst: **JDR**
Chloride	**9.9**		**1.0**	**mg/L**	1	12/30/2020 07:30 PM
Fluoride	**0.22**		**0.10**	**mg/L**	1	12/30/2020 07:30 PM
Sulfate	**140**		**8.0**	**mg/L**	8	12/30/2020 06:36 PM
PH (LABORATORY)			**SW9040C**			Analyst: **QTN**
pH (laboratory)	**8.43**	H	**0.100**	**s.u.**	1	12/29/2020 11:55 AM
Temperature	**20.7**	H	**0.100**	**°C**	1	12/29/2020 11:55 AM
TOTAL DISSOLVED SOLIDS			**A2540 C-11**		Prep: FILTER 12/22/20 11:40	Analyst: **AJS**
Total Dissolved Solids	**330**		**50**	**mg/L**	1	12/23/2020 02:50 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *05-Jan-21*

Client: Geosyntec Consultants
Project: DTE- Belle River (GLP-8017)
Work Order: 20121752
Sample ID: DB
Lab ID: 20121752-03
Collection Date: 12/16/2020 04:00 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			**SW7470A**		Prep: SW7470 12/30/20 13:08	Analyst: **MAC**
Mercury	ND		0.00020	mg/L	1	12/30/2020 01:30 PM
METALS BY ICP-MS			**SW6020B**		Prep: SW3005A 12/30/20 15:00	Analyst: **STP**
Antimony	ND		0.0050	mg/L	1	12/30/2020 09:09 PM
Arsenic	**0.0057**		**0.0050**	**mg/L**	1	12/30/2020 09:09 PM
Barium	**0.19**		**0.0050**	**mg/L**	1	12/30/2020 09:09 PM
Beryllium	ND		0.0020	mg/L	1	12/30/2020 09:09 PM
Boron	**6.0**		**0.20**	**mg/L**	10	12/31/2020 05:15 PM
Cadmium	ND		0.0020	mg/L	1	12/30/2020 09:09 PM
Calcium	**110**		**0.50**	**mg/L**	1	12/30/2020 09:09 PM
Chromium	ND		0.0050	mg/L	1	12/30/2020 09:09 PM
Cobalt	ND		0.0050	mg/L	1	12/30/2020 09:09 PM
Iron	**0.35**		**0.080**	**mg/L**	1	12/31/2020 05:17 PM
Lead	ND		0.0050	mg/L	1	12/30/2020 09:09 PM
Lithium	**0.061**		**0.010**	**mg/L**	1	12/30/2020 09:09 PM
Magnesium	**18**		**0.20**	**mg/L**	1	12/30/2020 09:09 PM
Manganese	**0.068**		**0.0050**	**mg/L**	1	12/30/2020 09:09 PM
Molybdenum	**0.30**		**0.0050**	**mg/L**	1	12/30/2020 09:09 PM
Potassium	**13**		**0.20**	**mg/L**	1	12/30/2020 09:09 PM
Selenium	**0.0087**		**0.0050**	**mg/L**	1	12/30/2020 09:09 PM
Sodium	**510**		**2.0**	**mg/L**	10	12/31/2020 05:15 PM
Thallium	ND		0.0050	mg/L	1	12/30/2020 09:09 PM
ALKALINITY			**A2320 B-11**			Analyst: **QTN**
Alkalinity, Bicarbonate (as CaCO3)	**140**		**10**	**mg/L**	1	12/29/2020 11:55 AM
Alkalinity, Carbonate (as CaCO3)	ND		10	mg/L	1	12/29/2020 11:55 AM
Alkalinity, Hydroxide (as CaCO3)	ND		10	mg/L	1	12/29/2020 11:55 AM
Alkalinity, Phenolphthalein (as CaCO3)	ND		10	mg/L	1	12/29/2020 11:55 AM
Alkalinity, Total (as CaCO3)	**140**		**10**	**mg/L**	1	12/29/2020 11:55 AM
ANIONS BY ION CHROMATOGRAPHY			**SW9056A**			Analyst: **JDR**
Chloride	**43**		**20**	**mg/L**	20	12/30/2020 06:55 PM
Fluoride	**0.44**		**0.10**	**mg/L**	1	12/30/2020 07:49 PM
Sulfate	**1,200**		**100**	**mg/L**	100	12/31/2020 03:21 PM
PH (LABORATORY)			**SW9040C**			Analyst: **QTN**
pH (laboratory)	**8.32**	H	**0.100**	**s.u.**	1	12/29/2020 11:55 AM
Temperature	**20.1**	H	**0.100**	**°C**	1	12/29/2020 11:55 AM
TOTAL DISSOLVED SOLIDS			**A2540 C-11**		Prep: FILTER 12/22/20 11:40	Analyst: **AJS**
Total Dissolved Solids	**2,100**		**300**	**mg/L**	1	12/23/2020 02:50 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 05-Jan-21

Client: Geosyntec Consultants

QC BATCH REPORT

Work Order: 20121752

Project: DTE- Belle River (GLP-8017)

Batch ID: **170071** Instrument ID **HG4** Method: **SW7470A**

MBLK Sample ID: **MBLK-170071-170071** Units: **mg/L** Analysis Date: **12/30/2020 01:14 PM**

Client ID: Run ID: **HG4_201230A** SeqNo: **7040771** Prep Date: **12/30/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020								

LCS Sample ID: **LCS-170071-170071** Units: **mg/L** Analysis Date: **12/30/2020 01:16 PM**

Client ID: Run ID: **HG4_201230A** SeqNo: **7040772** Prep Date: **12/30/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.002085	0.00020	0.002	0	104	80-120	0			

MS Sample ID: **20121813-10DMS** Units: **mg/L** Analysis Date: **12/30/2020 01:55 PM**

Client ID: Run ID: **HG4_201230A** SeqNo: **7040812** Prep Date: **12/30/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00219	0.00020	0.002	0.000003	109	75-125	0			

MSD Sample ID: **20121813-10DMSD** Units: **mg/L** Analysis Date: **12/30/2020 01:57 PM**

Client ID: Run ID: **HG4_201230A** SeqNo: **7040815** Prep Date: **12/30/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.002115	0.00020	0.002	0.000003	106	75-125	0.00219	3.48	20	

The following samples were analyzed in this batch: 20121752-01A 20121752-02A 20121752-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 20121752
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **170083** Instrument ID **ICPMS4** Method: **SW6020B**

MBLK Sample ID: **MBLK-170083-170083** Units: **mg/L** Analysis Date: **12/30/2020 08:51 PM**
Client ID: Run ID: **ICPMS4_201230A** SeqNo: **7043005** Prep Date: **12/30/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.0050								
Arsenic	ND	0.0050								
Barium	ND	0.0050								
Beryllium	ND	0.0020								
Boron	ND	0.020								
Cadmium	ND	0.0020								
Calcium	ND	0.50								
Chromium	ND	0.0050								
Cobalt	ND	0.0050								
Iron	ND	0.080								
Lead	ND	0.0050								
Lithium	ND	0.010								
Magnesium	ND	0.20								
Manganese	ND	0.0050								
Molybdenum	ND	0.0050								
Potassium	ND	0.20								
Selenium	ND	0.0050								
Sodium	ND	0.20								
Thallium	ND	0.0050								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 20121752
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **170083** Instrument ID **ICPMS4** Method: **SW6020B**

LCS	Sample ID: **LCS-170083-170083**				Units: **mg/L**			Analysis Date: **12/30/2020 08:52 PM**		
Client ID:	Run ID: **ICPMS4_201230A**				SeqNo: **7043006**			Prep Date: **12/30/2020**		DF: **1**
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.09984	0.0050	0.1	0	99.8	80-120	0			
Arsenic	0.099	0.0050	0.1	0	99	80-120	0			
Barium	0.1005	0.0050	0.1	0	100	80-120	0			
Beryllium	0.09793	0.0020	0.1	0	97.9	80-120	0			
Boron	0.4459	0.020	0.5	0	89.2	80-120	0			
Cadmium	0.1049	0.0020	0.1	0	105	80-120	0			
Calcium	9.959	0.50	10	0	99.6	80-120	0			
Chromium	0.09764	0.0050	0.1	0	97.6	80-120	0			
Cobalt	0.09865	0.0050	0.1	0	98.6	80-120	0			
Iron	9.742	0.080	10	0	97.4	80-120	0			
Lead	0.09896	0.0050	0.1	0	99	80-120	0			
Lithium	0.09939	0.010	0.1	0	99.4	80-120	0			
Magnesium	10.41	0.20	10	0	104	80-120	0			
Manganese	0.09726	0.0050	0.1	0	97.3	80-120	0			
Molybdenum	0.09949	0.0050	0.1	0	99.5	80-120	0			
Potassium	10.09	0.20	10	0	101	80-120	0			
Selenium	0.09876	0.0050	0.1	0	98.8	80-120	0			
Sodium	10.48	0.20	10	0	105	80-120	0			
Thallium	0.09419	0.0050	0.1	0	94.2	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 20121752
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **170083** Instrument ID **ICPMS4** Method: **SW6020B**

MS Sample ID: **20121813-01DMS** Units: **mg/L** Analysis Date: **12/30/2020 09:13 PM**
Client ID: Run ID: **ICPMS4_201230A** SeqNo: **7043018** Prep Date: **12/30/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.0939	0.0050	0.1	0.000019	93.9	75-125	0			
Arsenic	0.09542	0.0050	0.1	0.000523	94.9	75-125	0			
Barium	0.1197	0.0050	0.1	0.01914	101	75-125	0			
Beryllium	0.1028	0.0020	0.1	0.003422	99.4	75-125	0			
Boron	0.5173	0.020	0.5	0.07866	87.7	75-125	0			
Cadmium	0.09866	0.0020	0.1	0.003046	95.6	75-125	0			
Calcium	63.88	0.50	10	53.04	108	75-125	0			O
Chromium	0.09053	0.0050	0.1	0.000351	90.2	75-125	0			
Cobalt	0.2039	0.0050	0.1	0.1134	90.5	75-125	0			
Iron	8.964	0.080	10	0.02083	89.4	75-125	0			
Lead	0.09794	0.0050	0.1	0.000674	97.3	75-125	0			
Lithium	0.1112	0.010	0.1	0.01095	100	75-125	0			
Magnesium	61.4	0.20	10	51.16	102	75-125	0			O
Molybdenum	0.09472	0.0050	0.1	0.001008	93.7	75-125	0			
Potassium	12.35	0.20	10	2.605	97.4	75-125	0			
Selenium	0.1012	0.0050	0.1	0.005949	95.3	75-125	0			
Sodium	65.82	0.20	10	55.83	99.9	75-125	0			O
Thallium	0.09224	0.0050	0.1	0.000037	92.2	75-125	0			

MS Sample ID: **20121813-10DMS** Units: **mg/L** Analysis Date: **12/30/2020 09:35 PM**
Client ID: Run ID: **ICPMS4_201230A** SeqNo: **7043031** Prep Date: **12/30/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.09845	0.0050	0.1	0.000041	98.4	75-125	0			
Arsenic	0.1005	0.0050	0.1	0.00021	100	75-125	0			
Barium	0.125	0.0050	0.1	0.02584	99.1	75-125	0			
Beryllium	0.1046	0.0020	0.1	0.002214	102	75-125	0			
Boron	0.5169	0.020	0.5	0.056	92.2	75-125	0			
Cadmium	0.1056	0.0020	0.1	0.005454	100	75-125	0			
Calcium	34.88	0.50	10	25.15	97.2	75-125	0			
Chromium	0.09457	0.0050	0.1	0.000785	93.8	75-125	0			
Cobalt	0.2768	0.0050	0.1	0.1806	96.2	75-125	0			
Iron	9.488	0.080	10	0.143	93.5	75-125	0			
Lead	0.09729	0.0050	0.1	0.001591	95.7	75-125	0			
Lithium	0.107	0.010	0.1	0.006549	100	75-125	0			
Magnesium	24.92	0.20	10	15.27	96.4	75-125	0			
Molybdenum	0.0977	0.0050	0.1	0.000386	97.3	75-125	0			
Potassium	12.88	0.20	10	3.03	98.5	75-125	0			
Selenium	0.09792	0.0050	0.1	0.001894	96	75-125	0			
Sodium	71.55	0.20	10	61.63	99.1	75-125	0			O
Thallium	0.09151	0.0050	0.1	0.000106	91.4	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 20121752
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **170083** Instrument ID **ICPMS4** Method: **SW6020B**

MS Sample ID: **20121813-01DMS** Units: **mg/L** Analysis Date: **12/31/2020 05:20 PM**
Client ID: Run ID: **ICPMS4_201231A** SeqNo: **7046543** Prep Date: **12/30/2020** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Manganese	3.991	0.050	0.1	3.949	41.3	75-125	0			SO

MS Sample ID: **20121813-10DMS** Units: **mg/L** Analysis Date: **12/31/2020 05:39 PM**
Client ID: Run ID: **ICPMS4_201231A** SeqNo: **7046555** Prep Date: **12/30/2020** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Manganese	4.091	0.050	0.1	3.865	227	75-125	0			SO

MSD Sample ID: **20121813-01DMSD** Units: **mg/L** Analysis Date: **12/30/2020 09:15 PM**
Client ID: Run ID: **ICPMS4_201230A** SeqNo: **7043019** Prep Date: **12/30/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.09655	0.0050	0.1	0.000019	96.5	75-125	0.0939	2.78	20	
Arsenic	0.09753	0.0050	0.1	0.000523	97	75-125	0.09542	2.18	20	
Barium	0.1208	0.0050	0.1	0.01914	102	75-125	0.1197	0.848	20	
Beryllium	0.1044	0.0020	0.1	0.003422	101	75-125	0.1028	1.59	20	
Boron	0.5179	0.020	0.5	0.07866	87.8	75-125	0.5173	0.103	20	
Cadmium	0.1013	0.0020	0.1	0.003046	98.3	75-125	0.09866	2.67	20	
Calcium	62.93	0.50	10	53.04	98.9	75-125	63.88	1.49	20	O
Chromium	0.09296	0.0050	0.1	0.000351	92.6	75-125	0.09053	2.65	20	
Cobalt	0.2064	0.0050	0.1	0.1134	92.9	75-125	0.2039	1.18	20	
Iron	9.236	0.080	10	0.02083	92.1	75-125	8.964	2.99	20	
Lead	0.09947	0.0050	0.1	0.000674	98.8	75-125	0.09794	1.55	20	
Lithium	0.1128	0.010	0.1	0.01095	102	75-125	0.1112	1.45	20	
Magnesium	61.51	0.20	10	51.16	104	75-125	61.4	0.185	20	O
Molybdenum	0.09663	0.0050	0.1	0.001008	95.6	75-125	0.09472	2	20	
Potassium	12.63	0.20	10	2.605	100	75-125	12.35	2.27	20	
Selenium	0.1029	0.0050	0.1	0.005949	96.9	75-125	0.1012	1.62	20	
Sodium	66.86	0.20	10	55.83	110	75-125	65.82	1.56	20	O
Thallium	0.09366	0.0050	0.1	0.000037	93.6	75-125	0.09224	1.53	20	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 20121752
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **170083** Instrument ID **ICPMS4** Method: **SW6020B**

MSD Sample ID: **20121813-10DMSD** Units: **mg/L** Analysis Date: **12/30/2020 09:37 PM**
Client ID: Run ID: **ICPMS4_201230A** SeqNo: **7043032** Prep Date: **12/30/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.09824	0.0050	0.1	0.000041	98.2	75-125	0.09845	0.211	20	
Arsenic	0.09954	0.0050	0.1	0.00021	99.3	75-125	0.1005	0.917	20	
Barium	0.1229	0.0050	0.1	0.02584	97	75-125	0.125	1.7	20	
Beryllium	0.1039	0.0020	0.1	0.002214	102	75-125	0.1046	0.636	20	
Boron	0.517	0.020	0.5	0.056	92.2	75-125	0.5169	0.0288	20	
Cadmium	0.1044	0.0020	0.1	0.005454	99	75-125	0.1056	1.11	20	
Calcium	34.42	0.50	10	25.15	92.7	75-125	34.88	1.31	20	
Chromium	0.09402	0.0050	0.1	0.000785	93.2	75-125	0.09457	0.58	20	
Cobalt	0.2727	0.0050	0.1	0.1806	92.2	75-125	0.2768	1.48	20	
Iron	9.402	0.080	10	0.143	92.6	75-125	9.488	0.913	20	
Lead	0.0969	0.0050	0.1	0.001591	95.3	75-125	0.09729	0.394	20	
Lithium	0.1057	0.010	0.1	0.006549	99.1	75-125	0.107	1.23	20	
Magnesium	24.72	0.20	10	15.27	94.4	75-125	24.92	0.809	20	
Molybdenum	0.09638	0.0050	0.1	0.000386	96	75-125	0.0977	1.36	20	
Potassium	12.71	0.20	10	3.03	96.8	75-125	12.88	1.33	20	
Selenium	0.09719	0.0050	0.1	0.001894	95.3	75-125	0.09792	0.75	20	
Sodium	70.5	0.20	10	61.63	88.7	75-125	71.55	1.48	20	O
Thallium	0.09051	0.0050	0.1	0.000106	90.4	75-125	0.09151	1.1	20	

MSD Sample ID: **20121813-01DMSD** Units: **mg/L** Analysis Date: **12/31/2020 05:22 PM**
Client ID: Run ID: **ICPMS4_201231A** SeqNo: **7046544** Prep Date: **12/30/2020** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Manganese	4.164	0.050	0.1	3.949	215	75-125	3.991	4.26	20	SO

MSD Sample ID: **20121813-10DMSD** Units: **mg/L** Analysis Date: **12/31/2020 05:41 PM**
Client ID: Run ID: **ICPMS4_201231A** SeqNo: **7046556** Prep Date: **12/30/2020** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Manganese	4.094	0.050	0.1	3.865	229	75-125	4.091	0.0533	20	SO

The following samples were analyzed in this batch: 20121752-01A 20121752-02A 20121752-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 20121752
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **169727** Instrument ID **TDS** Method: **A2540 C-11**

MBLK Sample ID: **MBLK-169727-169727** Units: **mg/L** Analysis Date: **12/23/2020 02:50 PM**
Client ID: Run ID: **TDS_201223B** SeqNo: **7021476** Prep Date: **12/22/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	ND	30								

LCS Sample ID: **LCS-169727-169727** Units: **mg/L** Analysis Date: **12/23/2020 02:50 PM**
Client ID: Run ID: **TDS_201223B** SeqNo: **7021475** Prep Date: **12/22/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	476	30	495	0	96.2	85-109	0			

DUP Sample ID: **20121752-03B DUP** Units: **mg/L** Analysis Date: **12/23/2020 02:50 PM**
Client ID: **DB** Run ID: **TDS_201223B** SeqNo: **7021469** Prep Date: **12/22/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	1940	300	0	0	0	0-0	2100	7.92	10	

The following samples were analyzed in this batch: 20121752-01B 20121752-02B 20121752-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 20121752
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **R306910** Instrument ID **Titrator 1** Method: **A2320 B-11**

MBLK Sample ID: **MB-R306910-R306910** Units: **mg/L** Analysis Date: **12/29/2020 11:55 AM**
Client ID: Run ID: **TITRATOR 1_201229A** SeqNo: **7033262** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (as CaCO3)	ND	10								
Alkalinity, Carbonate (as CaCO3)	ND	10								
Alkalinity, Hydroxide (as CaCO3)	ND	10								
Alkalinity, Phenolphthalein (as CaCO3	ND	10								
Alkalinity, Total (as CaCO3)	ND	10								

LCS Sample ID: **LCS-R306910-R306910** Units: **mg/L** Analysis Date: **12/29/2020 11:55 AM**
Client ID: Run ID: **TITRATOR 1_201229A** SeqNo: **7033263** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Carbonate (as CaCO3)	923.7	10	925	0	99.9	88-110	0			
Alkalinity, Total (as CaCO3)	996.2	10	1000	0	99.6	89-103	0			

DUP Sample ID: **20121803-01E DUP** Units: **mg/L** Analysis Date: **12/29/2020 11:55 AM**
Client ID: Run ID: **TITRATOR 1_201229A** SeqNo: **7033273** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (as CaCO3)	219.1	10	0	0	0	0-0	224.9	2.6	10	
Alkalinity, Carbonate (as CaCO3)	ND	10	0	0	0	0-0	0	0	10	

DUP Sample ID: **20121990-05A DUP** Units: **mg/L** Analysis Date: **12/29/2020 11:55 AM**
Client ID: Run ID: **TITRATOR 1_201229A** SeqNo: **7033276** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (as CaCO3)	66.2	10	0	0	0	0-0	62.95	5.03	10	

DUP Sample ID: **20122120-08C DUP** Units: **mg/L** Analysis Date: **12/29/2020 11:55 AM**
Client ID: Run ID: **TITRATOR 1_201229A** SeqNo: **7033278** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (as CaCO3)	127.7	10	0	0	0	0-0	127.9	0.11	10	

The following samples were analyzed in this batch: 20121752-01B 20121752-02B 20121752-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 20121752
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **R306912** Instrument ID **Titrator 1** Method: **A4500-H B-11**

LCS Sample ID: **LCS-R306912-R306912** Units: **s.u.** Analysis Date: **12/29/2020 11:55 AM**
Client ID: Run ID: **TITRATOR 1_201229B** SeqNo: **7033301** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	3.99	0.10	4	0	99.8	92-108	0			

LCS Sample ID: **LCS-R306912-R306912** Units: **s.u.** Analysis Date: **12/29/2020 11:55 AM**
Client ID: Run ID: **TITRATOR 1_201229B** SeqNo: **7033308** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	3.99	0.10	4	0	99.8	92-108	0			

DUP Sample ID: **20122120-08C DUP** Units: **s.u.** Analysis Date: **12/29/2020 11:55 AM**
Client ID: Run ID: **TITRATOR 1_201229B** SeqNo: **7033305** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	8.05	0.10	0	0	0	0-0	7.99	0.748	5	H
Temperature	20.95	0.10	0	0	0	0-0	20.76	0.911		H

DUP Sample ID: **20121990-05A DUP** Units: **s.u.** Analysis Date: **12/29/2020 11:55 AM**
Client ID: Run ID: **TITRATOR 1_201229B** SeqNo: **7033315** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	7.51	0.10	0	0	0	0-0	7.56	0.664	5	H
Temperature	20.63	0.10	0	0	0		19.96	3.3		H

The following samples were analyzed in this batch: 20121752-01B 20121752-02B 20121752-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 20121752
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **R307142** Instrument ID **IC3** Method: **SW9056A**

MBLK Sample ID: **MBLK-R307142** Units: **mg/L** Analysis Date: **12/30/2020 04:56 PM**
Client ID: Run ID: **IC3_201230A** SeqNo: **7043048** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	1.0								
Fluoride	ND	0.10								

LCS Sample ID: **LCS-R307142** Units: **mg/L** Analysis Date: **12/30/2020 05:15 PM**
Client ID: Run ID: **IC3_201230A** SeqNo: **7043049** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.321	1.0	10	0	93.2	88-110	0			
Fluoride	2.135	0.10	2	0	107	82-116	0			

MS Sample ID: **20122223-01D MS** Units: **mg/L** Analysis Date: **12/31/2020**
Client ID: Run ID: **IC3_201230A** SeqNo: **7043070** Prep Date: DF: **40**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	405	40	400	28.42	94.1	88-110	0			
Fluoride	84.26	4.0	80	0	105	82-116	0			

MSD Sample ID: **20122223-01D MSD** Units: **mg/L** Analysis Date: **12/31/2020 12:19 AM**
Client ID: Run ID: **IC3_201230A** SeqNo: **7043071** Prep Date: DF: **40**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	406.1	40	400	28.42	94.4	88-110	405	0.286	20	
Fluoride	83.74	4.0	80	0	105	82-116	84.26	0.614	20	

The following samples were analyzed in this batch: 20121752-01B 20121752-02B 20121752-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 20121752
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **R307145** Instrument ID **IC4** Method: **SW9056A**

MBLK Sample ID: **MBLK-R307145** Units: **mg/L** Analysis Date: **12/30/2020 01:43 PM**
Client ID: Run ID: **IC4_201230A** SeqNo: **7043217** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	1.0								
Sulfate	ND	1.0								

LCS Sample ID: **LCS-R307145** Units: **mg/L** Analysis Date: **12/30/2020 02:39 PM**
Client ID: Run ID: **IC4_201230A** SeqNo: **7043218** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.353	1.0	10	0	93.5	88-110	0			
Sulfate	9.647	1.0	10	0	96.5	90-110	0			

MS Sample ID: **20121752-03B MS** Units: **mg/L** Analysis Date: **12/30/2020 07:14 PM**
Client ID: **DB** Run ID: **IC4_201230A** SeqNo: **7043233** Prep Date: DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	228.2	20	200	42.57	92.8	88-110	0			
Sulfate	1470	20	200	1251	109	90-110	0			EO

MSD Sample ID: **20121752-03B MSD** Units: **mg/L** Analysis Date: **12/30/2020 07:34 PM**
Client ID: **DB** Run ID: **IC4_201230A** SeqNo: **7043234** Prep Date: DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	229.3	20	200	42.57	93.4	88-110	228.2	0.476	20	
Sulfate	1480	20	200	1251	114	90-110	1470	0.669	20	SEO

The following samples were analyzed in this batch: 20121752-01B 20121752-02B 20121752-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 20121752
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **R307276** Instrument ID **IC3** Method: **SW9056A**

MBLK Sample ID: **MBLK-R307276** Units: **mg/L** Analysis Date: **12/31/2020 01:42 PM**
Client ID: Run ID: **IC3_201231A** SeqNo: **7047811** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	ND	1.0								

LCS Sample ID: **LCS-R307276** Units: **mg/L** Analysis Date: **12/31/2020 02:01 PM**
Client ID: Run ID: **IC3_201231A** SeqNo: **7047812** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	9.654	1.0	10	0	96.5	90-110	0			

MS Sample ID: **20122530-06A MS** Units: **mg/L** Analysis Date: **12/31/2020 06:35 PM**
Client ID: Run ID: **IC3_201231A** SeqNo: **7047826** Prep Date: DF: **40**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	424.4	40	400	43.11	95.3	90-110	0			

MSD Sample ID: **20122530-06A MSD** Units: **mg/L** Analysis Date: **12/31/2020 06:54 PM**
Client ID: Run ID: **IC3_201231A** SeqNo: **7047827** Prep Date: DF: **40**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	425.5	40	400	43.11	95.6	90-110	424.4	0.255	20	

The following samples were analyzed in this batch: 20121752-01B 20121752-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Chain of Custody Form

Page 1 of 1

☑ ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

2012752

ALS Project Manager:		ALS Work Order #:	33730

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	DTE Belle River	A	Metals
Work Order		Project Number	GLP 8017	B	pH, Anions, TDS, Alkalinity
Company Name	Geosyntec Consultants	Bill To Company	Geosyntec Consultants	C	
Send Report To	Michael Coram	Invoice Attn.	Michael Coram	D	
Address	2100 Commonwealth Blvd.	Address	2100 Commonwealth Blvd.	E	
	Suite 100		Suite 100	F	
City/State/Zip	Ann Arbor, MI 48105	City/State/Zip	Ann Arbor, MI 48105	G	
Phone	734-794-1547	Phone	734-794-1547	H	
Fax	734-332-8063	Fax	734-332-8063	I	
e-Mail Address				J	

No.	Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	BAB-E	12/16/2020	3:00	GW	2	2	x	x									
2	BAB-W	12/16/2020	2:00	GW	2	2	x	x									
3	DB	12/16/2020	4:00	GW	2	2	x	x									
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	

Sampler(s): Please Print & Sign: Mike Coram

Shipment Method: ~~Carrier~~ FedEx

Turnaround Time: (Business Days) ☑ 10 BD ☐ 5 BD ☐ 3 BD ☐ 2 BD ☐ 1 BD ☐ Other _____

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Notes: Separate Report
	12/17	3:00				
Relinquished by: Feder	Date: 12/18/20	Time: 10:00	Received by (Laboratory):	Date:	Time:	
Logged by (Laboratory): MTG	Date: 12/18/20	Time: 17:46	Checked by (Laboratory):			

ALS Cooler ID	Cooler Temp	QC Package: (Check Box Below)
	5.8°C	☑ Level II: Standard QC ☐ Level III: Raw Data
	IR1	☐ TRRP LRC ☐ TRRP Level IV
	PA23	☐ Level IV: SW846 Methods/CLP like
		☐ Other:

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GEOSYNTEC - AA** Date/Time Received: **18-Dec-20 10:00**

Work Order: **20121752** Received by: **MJG**

Checklist completed by Matthew Gaylord (eSignature) 18-Dec-20 (Date) Reviewed by: Chad Whelton (eSignature) 18-Dec-20 (Date)

Matrices: Groundwater
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	5.8/5.8C	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	12/18/2020 1:47:53 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

Tuesday, January 19, 2021

Michael Coram
Geosyntec Consultants
2100 Commonwealth Blvd. Suite 100
Ann Arbor, MI 48105

Re: ALS Workorder: 2012397
Project Name: DTE - Belle River
Project Number: GLP-8017

Dear Mr. Coram:

Three water samples were received from Geosyntec Consultants, on 12/18/2020. The samples were scheduled for the following analyses:

Radium-226
Radium-228

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Julie Ellingson
Project Manager

Accreditations: ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
California (CA)	2926
Colorado (CO)	CO01099
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
PJ-LA (DoD ELAP/ISO 170250)	95377
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO010992018-1
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	TN02976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

40 CFR Part 136: All analyses for Clean Water Act samples are analyzed using the 40 CFR Part 136 specified method and include all the QC requirements.

2012397

Radium-228:
The samples were analyzed for the presence of ^{228}Ra by low background gas flow proportional counting of ^{228}Ac, which is the ingrown progeny of ^{228}Ra, according to the current revision of SOP 724.

All remaining acceptance criteria were met.

Radium-226:
The samples were prepared and analyzed according to the current revision of SOP 783.

Sample 2012397-2 has a calculated yield as determined by ICP-AES above the 110% control limit at 132%. It is believed that there was native barium present in the sediment portion of the sample that was unaccounted for in the initial ICP aliquot. The result has been calculated conservatively, assuming a quantitative yield of 100%. This sample is identified with a “Y2” flag in the final reports, and the results are submitted without further qualification.

All remaining acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2012397
Client Name: Geosyntec Consultants
Client Project Name: DTE - Belle River
Client Project Number: GLP-8017
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
BAB-E	2012397-1		WATER	16-Dec-20	15:00
BAB-W	2012397-2		WATER	16-Dec-20	14:00
DB	2012397-3		WATER	16-Dec-20	16:00

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 230240

2012397

ALS Project Manager: | ALS Work Order #: 33730

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	DTE - Belle River	A	Radium 226 and 228 combined
Work Order		Project Number	GLP - 8017	B	
Company Name	Geosyntec Consultants	Bill To Company	Geosyntec Consultants	C	Report Separate
Send Report To	Michael Coram	Invoice Attn	Michael Coram	D	
Address	2100 Commonwealth Blvd Suite 100	Address	2100 Commonwealth Blvd Suite 100	E	
				F	
City/State/Zip	Ann Arbor, MI 48105	City/State/Zip	Ann Arbor, MI 48105	G	
Phone	(734) 794-1547	Phone	(734) 794-1547	H	
Fax	(734) 332-8063	Fax	(734) 332-8063	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	BAB-E 1	12/16	3:00	GW	2	2	X										
2	BAB-W 2	12/16	2:00	GW	2	2	X										
3	DB 3	12/16	4:00	GW	2	2	X										
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Mike Coram

Shipment Method: Fed Ex

Required Turnaround Time: (Check Box) [X] Std 10 WK Days [ ] 5 WK Days [ ] Other [ ] 2 WK Days [ ] 24 Hour

Results Due Date:

Relinquished by:	Date: 12/17	Time: 3:00	Received by:	Notes:
Relinquished by:	Date:	Time:	Received by (Laboratory):	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
[X] Level II Std QC
[ ] Level III Std QC/Raw Data
[ ] Level IV SW846/CLP
[ ] Other
[ ] TRRP CheckList
[ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client Name/ID: Geosyntec MI Workorder No: 2012397

Project Manager: Initials: RGA Date: 12/18/2020

1. Are airbills / shipping documents present and/or removable?	☐ Drop Off	☑ YES	☐ NO	
2. Are custody seals on **shipping** containers intact?	☐ NONE	☑ YES	☐ NO*	
3. Are custody seals on **sample** containers intact?	☑ NONE	☐ YES	☐ NO*	
4. Is there a COC (chain-of-custody) present?		☑ YES	☐ NO*	
5. Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		☑ YES	☐ NO*	
6. Are short-hold samples present?		☐ YES	☑ NO	
7. Are all samples within holding times for the requested analyses?		☑ YES	☐ NO*	
8. Were all sample containers received intact? (not broken or leaking)		☑ YES	☐ NO*	
9. Is there sufficient sample for the requested analyses?		☑ YES	☐ NO*	
10. Are samples in proper containers for requested analyses? (form 250, *Sample Handling Guidelines*)		☑ YES	☐ NO*	
11. Are all aqueous samples preserved correctly, if required?	☐ N/A	☐ YES	☑ NO*	
12. Were unpreserved samples pH checked, if required?	☑ N/A	☐ YES	☐ NO	
13. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm in diameter?	☑ N/A	☐ YES	☐ NO	
14. Were the samples shipped on ice?		☑ YES	☐ NO	
15. Were cooler temperatures measured at 0.1 - 6.0°C? IR gun used*: ☐ #3 ☑ #5	☐ Rad Only	☑ YES	☐ NO	

Cooler #: 1

Temperature (°C): 3.2

# of custody seals on cooler: 1

External mR/hr reading: 12

Background mR/hr reading: 9

Were external mR/hr readings ≤ two times background and within DOT acceptance criteria? (If no, see Form 008) ☐ N/A ☑ YES ☐ NO

* Please provide details below for 'NO' responses in gray boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.

11) Sample 2012397-1-2 had a pH of 4, 0.5mL of HNO3 was added to achieve a pH<2

All client bottle ID's vs ALS lab ID's double-checked by: RGA

If applicable, was the client contacted? ☐ YES ☐ N/A Contact Name Date:

Project Manager Signature / Date: 12/21/20

Form 201r30.xls
(06/04/2020)

+IR Gun #3, VWR SN 170647571
+IR Gun #5, VWR SN 192272629

ORIGIN ID:DEOA (248) 390-5748
MIKE CORAM

SUITE 100
2100 COMMONWEALTH BLVD STE 100
ANN ARBOR, MI 48105
UNITED STATES US

SHIP DATE: 17DEC20
ACTWGT: 56.90 LB
CAD: 6997566/SSFO2121
DIMS: 25x14x13 IN

BILL THIRD PARTY

Part # 156287-XXX RRDB EXP 11/21

TO ALS FT. COLLINS
ATTN: SAMPLE RECIEVING
225 COMMERCE DR

FORT COLLINS CO 80524

(616) 582-6201 REF:
INV:
PO: DEPT:

12-1
3.2

FedEx Express

TRK# 0201 7816 0264 9731

FRI - 18 DEC 10:30A
PRIORITY OVERNIGHT

NA FTCA

DSR
80524
CO-US DEN

Client:	Geosyntec Consultants	**Date:**	*19-Jan-21*
Project:	GLP-8017 DTE - Belle River	**Work Order:**	2012397
Sample ID:	BAB-E	**Lab ID:**	2012397-1
Legal Location:		**Matrix:**	WATER
Collection Date:	12/16/2020 15:00	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Radium-226 by Radon Emanation - Method 903.1		**SOP 783**			Prep Date: **1/4/2021**	PrepBy: **TRB**
Ra-226	**0.57 (+/- 0.35)**	Y1	**0.41**	**pCi/l**	NA	1/12/2021 11:32
Carr: BARIUM	*101*	Y1	*40-110*	*%REC*	DL = NA	1/12/2021 11:32
Radium-228 Analysis by GFPC		**SOP 724**			Prep Date: **1/11/2021**	PrepBy: **RGS**
COMBINED RADIUM (226+228)	**1.49 (+/- 0)**		**0.78**	**pCi/l**	NA	1/15/2021 07:48
Ra-228	**0.92 (+/- 0.45)**		**0.78**	**pCi/l**	NA	1/15/2021 07:48
Carr: BARIUM	*99.2*		*40-110*	*%REC*	DL = NA	1/15/2021 07:48

Client:	Geosyntec Consultants	**Date:**	*19-Jan-21*
Project:	GLP-8017 DTE - Belle River	**Work Order:**	2012397
Sample ID:	BAB-W	**Lab ID:**	2012397-2
Legal Location:		**Matrix:**	WATER
Collection Date:	12/16/2020 14:00	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Radium-226 by Radon Emanation - Method 903.1		**SOP 783**			Prep Date: **1/4/2021**	PrepBy: **TRB**
Ra-226	**1.78 (+/- 0.66)**	Y2	**0.3**	**pCi/l**	NA	1/12/2021 11:32
Carr: BARIUM	*132*	Y2	*40-110*	*%REC*	DL = NA	1/12/2021 11:32
Radium-228 Analysis by GFPC		**SOP 724**			Prep Date: **1/11/2021**	PrepBy: **RGS**
COMBINED RADIUM (226+228)	**1.78 (+/- 0)**		**1.32**	**pCi/l**	NA	1/15/2021 07:48
Ra-228	ND (+/- 0.69)	U,M	1.32	pCi/l	NA	1/15/2021 07:48
Carr: BARIUM	*57*		*40-110*	*%REC*	DL = NA	1/15/2021 07:48

Client:	Geosyntec Consultants	**Date:**	*19-Jan-21*
Project:	GLP-8017 DTE - Belle River	**Work Order:**	2012397
Sample ID:	DB	**Lab ID:**	2012397-3
Legal Location:		**Matrix:**	WATER
Collection Date:	12/16/2020 16:00	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Radium-226 by Radon Emanation - Method 903.1		**SOP 783**			Prep Date: **1/4/2021**	PrepBy: **TRB**
Ra-226	ND (+/- 0.21)	U	0.3	pCi/l	NA	1/12/2021 11:32
Carr: BARIUM	*95*		*40-110*	*%REC*	DL = NA	1/12/2021 11:32
Radium-228 Analysis by GFPC		**SOP 724**			Prep Date: **1/11/2021**	PrepBy: **RGS**
COMBINED RADIUM (226+228)	ND (+/- 0)	U	1.8	pCi/l	NA	1/15/2021 07:48
Ra-228	ND (+/- 0.83)	U,M	1.8	pCi/l	NA	1/15/2021 07:48
Carr: BARIUM	*45*		*40-110*	*%REC*	DL = NA	1/15/2021 07:48

Client:	Geosyntec Consultants	**Date:**	*19-Jan-21*
Project:	GLP-8017 DTE - Belle River	**Work Order:**	2012397
Sample ID:	DB	**Lab ID:**	2012397-3
Legal Location:		**Matrix:**	WATER
Collection Date:	12/16/2020 16:00	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

- "Report Limit" is the MDC

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

QC BATCH REPORT

Batch ID: **RE210104-1-3** Instrument ID: **Alpha Scin** Method: **Radium-226 by Radon Emanation**

LCS Sample ID: **RE210104-1** Units: **pCi/l** Analysis Date: **1/12/2021 12:16**

Client ID: Run ID: **RE210104-1A** Prep Date: **1/4/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref Value	DER	DER Limit	Qual
Ra-226	46 (+/- 12)	0	46.8		98.8	67-120					P
Carr: BARIUM	15230		15490		98.3	40-110					

MB Sample ID: **RE210104-1** Units: **pCi/l** Analysis Date: **1/12/2021 12:16**

Client ID: Run ID: **RE210104-1A** Prep Date: **1/4/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref Value	DER	DER Limit	Qual
Ra-226	ND	0.31									U
Carr: BARIUM	15370		15490		99.2	40-110					

The following samples were analyzed in this batch: 2012397-1 2012397-2 2012397-3

Client: Geosyntec Consultants
Work Order: 2012397
Project: GLP-8017 DTE - Belle River

QC BATCH REPORT

Batch ID: **RA210111-1-5** Instrument ID: **GASPROP** Method: **Radium-228 Analysis by GFPC**

LCS Sample ID: **RA210111-1** Units: **ug** Analysis Date: **1/15/2021 07:48**
Client ID: Run ID: **RA210111-1A** Prep Date: **1/11/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref Value	DER	DER Limit	Qual
Carr: BARIUM	34290		36030		95.2	40-110					
Ra-228	17.3 (+/- 4.1)	0.7	22.86		75.6	70-130					P

LCSD Sample ID: **RA210111-1** Units: **ug** Analysis Date: **1/15/2021 07:48**
Client ID: Run ID: **RA210111-1A** Prep Date: **1/11/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref Value	DER	DER Limit	Qual
Carr: BARIUM	33960		36030		94.2	40-110		34290			
Ra-228	22.7 (+/- 5.3)	0.7	22.86		99.3	70-130		17.3	0.81	2.13	P

MB Sample ID: **RA210111-1** Units: **ug** Analysis Date: **1/15/2021 07:48**
Client ID: Run ID: **RA210111-1A** Prep Date: **1/11/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref Value	DER	DER Limit	Qual
Carr: BARIUM	34280		36150		94.8	40-110					
Ra-228	ND	0.77									U

The following samples were analyzed in this batch: 2012397-1 2012397-2 2012397-3

11-Feb-2021

Michael Coram
Geosyntec Consultants
2100 Commonwealth Blvd.
Suite 100
Ann Arbor, MI 48105

Re: **DTE- Belle River (GLP-8017)** Work Order: **21020218**

Dear Michael,

ALS Environmental received 3 samples on 03-Feb-2021 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 24.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

ALS Group, USA

Date: 11-Feb-21

Client: Geosyntec Consultants
Project: DTE- Belle River (GLP-8017)
Work Order: **21020218**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21020218-01	BAB-North	Groundwater		1/29/2021 12:35	2/3/2021 09:00	☐
21020218-02	BAB-South	Groundwater		1/29/2021 12:15	2/3/2021 09:00	☐
21020218-03	DB	Groundwater		1/29/2021 13:20	2/3/2021 09:00	☐

Client: Geosyntec Consultants
Project: DTE- Belle River (GLP-8017)
Work Order: 21020218

Case Narrative

Samples for the above noted Work Order were received on 02/03/2021. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Metals:
No other deviations or anomalies were noted.

Wet Chemistry:

Batch R309524, Method SW9040C, Sample BAB-North (21020218-01B): pH is considered a "field test" and, as such, the recommended sample holding time expired prior to sample receipt.

Batch R309524, Method SW9040C, Sample BAB-South (21020218-02B): pH is considered a "field test" and, as such, the recommended sample holding time expired prior to sample receipt.

Batch R309524, Method SW9040C, Sample DB (21020218-03B): pH is considered a "field test" and, as such, the recommended sample holding time expired prior to sample receipt.

ALS Group, USA

Date: 11-Feb-21

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
°C	Degrees Celcius
mg/L	Milligrams per Liter
s.u.	Standard Units

ALS Group, USA

Date: *11-Feb-2021*

Client: Geosyntec Consultants
Project: DTE- Belle River (GLP-8017)
Work Order: 21020218
Sample ID: BAB-North
Lab ID: 21020218-01
Collection Date: 1/29/2021 12:35 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			**SW7470A**		Prep: SW7470 2/8/21 13:14	Analyst: **MAC**
Mercury	ND		0.00020	mg/L	1	2/8/2021 01:39 PM
MERCURY BY CVAA (DISSOLVED)			**SW7470A**		Prep: SW7470 2/8/21 13:14	Analyst: **MAC**
Mercury	ND		0.00020	mg/L	1	2/8/2021 01:41 PM
METALS BY ICP-MS			**SW6020B**		Prep: SW3005A 2/9/21 15:19	Analyst: **STP**
Antimony	ND		0.0050	mg/L	1	2/9/2021 05:26 PM
Arsenic	ND		0.0050	mg/L	1	2/9/2021 05:26 PM
Barium	**0.48**		**0.0050**	**mg/L**	1	2/9/2021 05:26 PM
Beryllium	ND		0.0020	mg/L	1	2/9/2021 05:26 PM
Boron	**0.17**		**0.020**	**mg/L**	1	2/9/2021 05:26 PM
Cadmium	ND		0.0020	mg/L	1	2/9/2021 05:26 PM
Calcium	**42**		**0.50**	**mg/L**	1	2/9/2021 05:26 PM
Chromium	ND		0.0050	mg/L	1	2/9/2021 05:26 PM
Cobalt	ND		0.0050	mg/L	1	2/9/2021 05:26 PM
Iron	ND		0.080	mg/L	1	2/9/2021 05:26 PM
Lead	ND		0.0050	mg/L	1	2/9/2021 05:26 PM
Lithium	**0.017**		**0.010**	**mg/L**	1	2/9/2021 05:26 PM
Magnesium	**8.1**		**0.20**	**mg/L**	1	2/9/2021 05:26 PM
Manganese	ND		0.0050	mg/L	1	2/9/2021 05:26 PM
Molybdenum	**0.018**		**0.0050**	**mg/L**	1	2/10/2021 08:12 PM
Potassium	**3.0**		**0.20**	**mg/L**	1	2/9/2021 05:26 PM
Selenium	ND		0.0050	mg/L	1	2/9/2021 05:26 PM
Sodium	**28**		**0.20**	**mg/L**	1	2/9/2021 05:26 PM
Thallium	ND		0.0050	mg/L	1	2/9/2021 05:26 PM
METALS BY ICP-MS (DISSOLVED)			**SW6020B**		Prep: FILTER 2/9/21 09:47	Analyst: **STP**
Antimony	ND		0.0050	mg/L	1	2/9/2021 04:30 PM
Arsenic	ND		0.0050	mg/L	1	2/9/2021 04:30 PM
Barium	**0.46**		**0.0050**	**mg/L**	1	2/9/2021 04:30 PM
Beryllium	ND		0.0020	mg/L	1	2/9/2021 04:30 PM
Boron	**0.21**		**0.020**	**mg/L**	1	2/10/2021 07:41 PM
Cadmium	ND		0.0020	mg/L	1	2/9/2021 04:30 PM
Calcium	**41**		**0.50**	**mg/L**	1	2/9/2021 04:30 PM
Chromium	ND		0.0050	mg/L	1	2/9/2021 04:30 PM
Cobalt	ND		0.0050	mg/L	1	2/9/2021 04:30 PM
Iron	ND		0.080	mg/L	1	2/9/2021 04:30 PM
Lead	ND		0.0050	mg/L	1	2/9/2021 04:30 PM
Lithium	**0.017**		**0.010**	**mg/L**	1	2/9/2021 04:30 PM
Magnesium	**7.8**		**0.20**	**mg/L**	1	2/9/2021 04:30 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Geosyntec Consultants
Project: DTE- Belle River (GLP-8017) **Work Order:** 21020218
Sample ID: BAB-North **Lab ID:** 21020218-01
Collection Date: 1/29/2021 12:35 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Manganese	ND		0.0050	mg/L	1	2/9/2021 04:30 PM
Molybdenum	**0.017**		**0.0050**	**mg/L**	1	2/9/2021 04:30 PM
Potassium	**2.9**		**0.20**	**mg/L**	1	2/9/2021 04:30 PM
Selenium	ND		0.0050	mg/L	1	2/9/2021 04:30 PM
Sodium	**27**		**0.20**	**mg/L**	1	2/9/2021 04:30 PM
Thallium	ND		0.0050	mg/L	1	2/9/2021 04:30 PM
ALKALINITY			**A2320 B-11**			Analyst: **QTN**
Alkalinity, Bicarbonate (as CaCO3)	**88**		**10**	**mg/L**	1	2/9/2021 12:49 PM
Alkalinity, Carbonate (as CaCO3)	ND		10	mg/L	1	2/9/2021 12:49 PM
Alkalinity, Hydroxide (as CaCO3)	ND		10	mg/L	1	2/9/2021 12:49 PM
Alkalinity, Phenolphthalein (as CaCO3)	ND		10	mg/L	1	2/9/2021 12:49 PM
Alkalinity, Total (as CaCO3)	**88**		**10**	**mg/L**	1	2/9/2021 12:49 PM
ANIONS BY ION CHROMATOGRAPHY			**SW9056A**			Analyst: **JDR**
Chloride	**9.0**		**1.0**	**mg/L**	1	2/5/2021 08:18 PM
Fluoride	**0.26**		**0.10**	**mg/L**	1	2/5/2021 08:18 PM
Sulfate	**100**		**10**	**mg/L**	10	2/5/2021 08:37 PM
PH (LABORATORY)			**SW9040C**			Analyst: **QTN**
pH (laboratory)	**7.87**	H	**0.10**	**s.u.**	1	2/9/2021 12:49 PM
Temperature	**20.3**	H	**0.10**	**°C**	1	2/9/2021 12:49 PM
TOTAL DISSOLVED SOLIDS			**A2540 C-11**		Prep: FILTER 2/7/21 15:44	Analyst: **ERW**
Total Dissolved Solids	**200**		**50**	**mg/L**	1	2/9/2021 02:45 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Geosyntec Consultants
Project: DTE- Belle River (GLP-8017) **Work Order:** 21020218
Sample ID: BAB-South **Lab ID:** 21020218-02
Collection Date: 1/29/2021 12:15 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			**SW7470A**		Prep: SW7470 2/8/21 13:14	Analyst: **MAC**
Mercury	ND		0.00020	mg/L	1	2/8/2021 01:48 PM
MERCURY BY CVAA (DISSOLVED)			**SW7470A**		Prep: SW7470 2/8/21 13:14	Analyst: **MAC**
Mercury	ND		0.00020	mg/L	1	2/8/2021 01:50 PM
METALS BY ICP-MS			**SW6020B**		Prep: SW3005A 2/9/21 15:19	Analyst: **STP**
Antimony	ND		0.0050	mg/L	1	2/9/2021 05:31 PM
Arsenic	ND		0.0050	mg/L	1	2/9/2021 05:31 PM
Barium	**0.42**		**0.0050**	**mg/L**	1	2/9/2021 05:31 PM
Beryllium	ND		0.0020	mg/L	1	2/9/2021 05:31 PM
Boron	**0.41**		**0.020**	**mg/L**	1	2/9/2021 05:31 PM
Cadmium	ND		0.0020	mg/L	1	2/9/2021 05:31 PM
Calcium	**29**		**0.50**	**mg/L**	1	2/9/2021 05:31 PM
Chromium	ND		0.0050	mg/L	1	2/9/2021 05:31 PM
Cobalt	ND		0.0050	mg/L	1	2/9/2021 05:31 PM
Iron	**0.97**		**0.080**	**mg/L**	1	2/9/2021 05:31 PM
Lead	ND		0.0050	mg/L	1	2/9/2021 05:31 PM
Lithium	ND		0.010	mg/L	1	2/9/2021 05:31 PM
Magnesium	**7.4**		**0.20**	**mg/L**	1	2/9/2021 05:31 PM
Manganese	**0.0095**		**0.0050**	**mg/L**	1	2/9/2021 05:31 PM
Molybdenum	**0.024**		**0.0050**	**mg/L**	1	2/10/2021 08:13 PM
Potassium	**3.8**		**0.20**	**mg/L**	1	2/9/2021 05:31 PM
Selenium	ND		0.0050	mg/L	1	2/9/2021 05:31 PM
Sodium	**44**		**0.20**	**mg/L**	1	2/9/2021 05:31 PM
Thallium	ND		0.0050	mg/L	1	2/9/2021 05:31 PM
METALS BY ICP-MS (DISSOLVED)			**SW6020B**		Prep: FILTER 2/9/21 09:47	Analyst: **STP**
Antimony	ND		0.0050	mg/L	1	2/9/2021 04:32 PM
Arsenic	ND		0.0050	mg/L	1	2/9/2021 04:32 PM
Barium	**0.16**		**0.0050**	**mg/L**	1	2/9/2021 04:32 PM
Beryllium	ND		0.0020	mg/L	1	2/9/2021 04:32 PM
Boron	**0.42**		**0.020**	**mg/L**	1	2/10/2021 07:42 PM
Cadmium	ND		0.0020	mg/L	1	2/9/2021 04:32 PM
Calcium	**25**		**0.50**	**mg/L**	1	2/9/2021 04:32 PM
Chromium	ND		0.0050	mg/L	1	2/9/2021 04:32 PM
Cobalt	ND		0.0050	mg/L	1	2/9/2021 04:32 PM
Iron	ND		0.080	mg/L	1	2/9/2021 04:32 PM
Lead	ND		0.0050	mg/L	1	2/9/2021 04:32 PM
Lithium	ND		0.010	mg/L	1	2/9/2021 04:32 PM
Magnesium	**6.4**		**0.20**	**mg/L**	1	2/9/2021 04:32 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Geosyntec Consultants
Project: DTE- Belle River (GLP-8017) **Work Order:** 21020218
Sample ID: BAB-South **Lab ID:** 21020218-02
Collection Date: 1/29/2021 12:15 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Manganese	ND		0.0050	mg/L	1	2/9/2021 04:32 PM
Molybdenum	**0.022**		**0.0050**	**mg/L**	1	2/9/2021 04:32 PM
Potassium	**3.7**		**0.20**	**mg/L**	1	2/9/2021 04:32 PM
Selenium	ND		0.0050	mg/L	1	2/9/2021 04:32 PM
Sodium	**42**		**0.20**	**mg/L**	1	2/9/2021 04:32 PM
Thallium	ND		0.0050	mg/L	1	2/9/2021 04:32 PM
ALKALINITY			**A2320 B-11**			Analyst: **QTN**
Alkalinity, Bicarbonate (as CaCO3)	**46**		**10**	**mg/L**	1	2/9/2021 12:49 PM
Alkalinity, Carbonate (as CaCO3)	**14**		**10**	**mg/L**	1	2/9/2021 12:49 PM
Alkalinity, Hydroxide (as CaCO3)	ND		10	mg/L	1	2/9/2021 12:49 PM
Alkalinity, Phenolphthalein (as CaCO3)	ND		10	mg/L	1	2/9/2021 12:49 PM
Alkalinity, Total (as CaCO3)	**60**		**10**	**mg/L**	1	2/9/2021 12:49 PM
ANIONS BY ION CHROMATOGRAPHY			**SW9056A**			Analyst: **JDR**
Chloride	**9.6**		**1.0**	**mg/L**	1	2/5/2021 08:56 PM
Fluoride	**0.52**		**0.10**	**mg/L**	1	2/5/2021 08:56 PM
Sulfate	**110**		**8.0**	**mg/L**	8	2/5/2021 09:16 PM
PH (LABORATORY)			**SW9040C**			Analyst: **QTN**
pH (laboratory)	**8.71**	H	**0.10**	**s.u.**	1	2/9/2021 12:49 PM
Temperature	**19.5**	H	**0.10**	**°C**	1	2/9/2021 12:49 PM
TOTAL DISSOLVED SOLIDS			**A2540 C-11**		Prep: FILTER 2/7/21 15:44	Analyst: **ERW**
Total Dissolved Solids	**220**		**50**	**mg/L**	1	2/9/2021 02:45 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *11-Feb-2021*

Client: Geosyntec Consultants
Project: DTE- Belle River (GLP-8017)
Work Order: 21020218
Sample ID: DB
Lab ID: 21020218-03
Collection Date: 1/29/2021 01:20 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			**SW7470A**		Prep: SW7470 2/8/21 13:14	Analyst: **MAC**
Mercury	ND		0.00020	mg/L	1	2/8/2021 01:52 PM
MERCURY BY CVAA (DISSOLVED)			**SW7470A**		Prep: SW7470 2/8/21 13:14	Analyst: **MAC**
Mercury	ND		0.00020	mg/L	1	2/8/2021 01:53 PM
METALS BY ICP-MS			**SW6020B**		Prep: SW3005A 2/9/21 15:19	Analyst: **STP**
Antimony	ND		0.0050	mg/L	1	2/9/2021 05:33 PM
Arsenic	ND		0.0050	mg/L	1	2/9/2021 05:33 PM
Barium	**0.35**		**0.0050**	**mg/L**	1	2/9/2021 05:33 PM
Beryllium	ND		0.0020	mg/L	1	2/9/2021 05:33 PM
Boron	**0.68**		**0.20**	**mg/L**	10	2/10/2021 08:15 PM
Cadmium	ND		0.0020	mg/L	1	2/9/2021 05:33 PM
Calcium	**41**		**0.50**	**mg/L**	1	2/9/2021 05:33 PM
Chromium	**0.0056**		**0.0050**	**mg/L**	1	2/9/2021 05:33 PM
Cobalt	ND		0.0050	mg/L	1	2/9/2021 05:33 PM
Iron	**0.26**		**0.080**	**mg/L**	1	2/9/2021 05:33 PM
Lead	ND		0.0050	mg/L	1	2/9/2021 05:33 PM
Lithium	**0.016**		**0.010**	**mg/L**	1	2/9/2021 05:33 PM
Magnesium	**9.0**		**0.20**	**mg/L**	1	2/9/2021 05:33 PM
Manganese	**0.0097**		**0.0050**	**mg/L**	1	2/9/2021 05:33 PM
Molybdenum	**0.029**		**0.0050**	**mg/L**	1	2/9/2021 05:33 PM
Potassium	**3.9**		**0.20**	**mg/L**	1	2/9/2021 05:33 PM
Selenium	ND		0.0050	mg/L	1	2/9/2021 05:33 PM
Sodium	**58**		**0.20**	**mg/L**	1	2/9/2021 05:33 PM
Thallium	ND		0.0050	mg/L	1	2/9/2021 05:33 PM
METALS BY ICP-MS (DISSOLVED)			**SW6020B**		Prep: FILTER 2/9/21 09:47	Analyst: **STP**
Antimony	ND		0.0050	mg/L	1	2/9/2021 04:34 PM
Arsenic	ND		0.0050	mg/L	1	2/9/2021 04:34 PM
Barium	**0.24**		**0.0050**	**mg/L**	1	2/9/2021 04:34 PM
Beryllium	ND		0.0020	mg/L	1	2/9/2021 04:34 PM
Boron	**0.61**		**0.020**	**mg/L**	1	2/10/2021 07:44 PM
Cadmium	ND		0.0020	mg/L	1	2/9/2021 04:34 PM
Calcium	**39**		**0.50**	**mg/L**	1	2/9/2021 04:34 PM
Chromium	ND		0.0050	mg/L	1	2/9/2021 04:34 PM
Cobalt	ND		0.0050	mg/L	1	2/9/2021 04:34 PM
Iron	ND		0.080	mg/L	1	2/9/2021 04:34 PM
Lead	ND		0.0050	mg/L	1	2/9/2021 04:34 PM
Lithium	**0.015**		**0.010**	**mg/L**	1	2/9/2021 04:34 PM
Magnesium	**8.5**		**0.20**	**mg/L**	1	2/9/2021 04:34 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Geosyntec Consultants
Project: DTE- Belle River (GLP-8017) **Work Order:** 21020218
Sample ID: DB **Lab ID:** 21020218-03
Collection Date: 1/29/2021 01:20 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Manganese	ND		0.0050	mg/L	1	2/9/2021 04:34 PM
Molybdenum	**0.029**		**0.0050**	**mg/L**	1	2/9/2021 04:34 PM
Potassium	**3.7**		**0.20**	**mg/L**	1	2/9/2021 04:34 PM
Selenium	ND		0.0050	mg/L	1	2/9/2021 04:34 PM
Sodium	**57**		**0.20**	**mg/L**	1	2/9/2021 04:34 PM
Thallium	ND		0.0050	mg/L	1	2/9/2021 04:34 PM
ALKALINITY			**A2320 B-11**			Analyst: **QTN**
Alkalinity, Bicarbonate (as CaCO3)	**69**		**10**	**mg/L**	1	2/9/2021 12:49 PM
Alkalinity, Carbonate (as CaCO3)	**35**		**10**	**mg/L**	1	2/9/2021 12:49 PM
Alkalinity, Hydroxide (as CaCO3)	ND		10	mg/L	1	2/9/2021 12:49 PM
Alkalinity, Phenolphthalein (as CaCO3	**18**		**10**	**mg/L**	1	2/9/2021 12:49 PM
Alkalinity, Total (as CaCO3)	**100**		**10**	**mg/L**	1	2/9/2021 12:49 PM
ANIONS BY ION CHROMATOGRAPHY			**SW9056A**			Analyst: **JDR**
Chloride	**14**		**1.0**	**mg/L**	1	2/5/2021 09:35 PM
Fluoride	**0.31**		**0.10**	**mg/L**	1	2/5/2021 09:35 PM
Sulfate	**130**		**8.0**	**mg/L**	8	2/5/2021 09:54 PM
PH (LABORATORY)			**SW9040C**			Analyst: **QTN**
pH (laboratory)	**9.01**	H	**0.10**	**s.u.**	1	2/9/2021 12:49 PM
Temperature	**19.7**	H	**0.10**	**°C**	1	2/9/2021 12:49 PM
TOTAL DISSOLVED SOLIDS			**A2540 C-11**		Prep: FILTER 2/7/21 15:44	Analyst: **ERW**
Total Dissolved Solids	**300**		**50**	**mg/L**	1	2/9/2021 02:45 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 11-Feb-21

Client: Geosyntec Consultants

QC BATCH REPORT

Work Order: 21020218

Project: DTE- Belle River (GLP-8017)

Batch ID: **171771** Instrument ID **HG4** Method: **SW7470A**

MBLK Sample ID: **MBLK-171771-171771** Units: **mg/L** Analysis Date: **2/8/2021 01:27 PM**

Client ID: Run ID: **HG4_210208A** SeqNo: **7127171** Prep Date: **2/8/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020								

LCS Sample ID: **LCS-171771-171771** Units: **mg/L** Analysis Date: **2/8/2021 02:50 PM**

Client ID: Run ID: **HG4_210208A** SeqNo: **7127218** Prep Date: **2/8/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001785	0.00020	0.002	0	89.2	80-120	0			

MS Sample ID: **21020251-02AMS** Units: **mg/L** Analysis Date: **2/8/2021 02:11 PM**

Client ID: Run ID: **HG4_210208A** SeqNo: **7127196** Prep Date: **2/8/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.01995	0.0020	0.02	0.00075	96	75-125	0			

MSD Sample ID: **21020251-02AMSD** Units: **mg/L** Analysis Date: **2/8/2021 02:13 PM**

Client ID: Run ID: **HG4_210208A** SeqNo: **7127197** Prep Date: **2/8/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0198	0.0020	0.02	0.00075	95.2	75-125	0.01995	0.755	20	

The following samples were analyzed in this batch:

21020218-01A	21020218-01C	21020218-02A
21020218-02C	21020218-03A	21020218-03C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 21020218
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **171827** Instrument ID **ICPMS3** Method: **SW6020B** **(Dissolve)**

MBLK Sample ID: **MBLK-171827-171827** Units: **mg/L** Analysis Date: **2/9/2021 04:21 PM**
Client ID: Run ID: **ICPMS3_210209A** SeqNo: **7131167** Prep Date: **2/9/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.0050								
Arsenic	ND	0.0050								
Barium	ND	0.0050								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	0.50								
Chromium	ND	0.0050								
Cobalt	ND	0.0050								
Iron	ND	0.080								
Lead	ND	0.0050								
Lithium	ND	0.010								
Magnesium	ND	0.20								
Manganese	ND	0.0050								
Molybdenum	ND	0.0050								
Potassium	ND	0.20								
Selenium	ND	0.0050								
Sodium	ND	0.20								
Thallium	ND	0.0050								

MBLK Sample ID: **MBLK-171827-171827** Units: **mg/L** Analysis Date: **2/10/2021 07:33 PM**
Client ID: Run ID: **ICPMS3_210210B** SeqNo: **7133898** Prep Date: **2/9/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	ND	0.020								

LCS Sample ID: **LCS-171827-171827** Units: **mg/L** Analysis Date: **2/9/2021 04:22 PM**
Client ID: Run ID: **ICPMS3_210209A** SeqNo: **7131168** Prep Date: **2/9/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.0857	0.0050	0.1	0	85.7	80-120	0			
Arsenic	0.08929	0.0050	0.1	0	89.3	80-120	0			
Chromium	0.08766	0.0050	0.1	0	87.7	80-120	0			
Cobalt	0.0894	0.0050	0.1	0	89.4	80-120	0			
Iron	9.019	0.080	10	0	90.2	80-120	0			
Magnesium	9.509	0.20	10	0	95.1	80-120	0			
Potassium	9.46	0.20	10	0	94.6	80-120	0			
Selenium	0.09002	0.0050	0.1	0	90	80-120	0			
Sodium	9.507	0.20	10	0	95.1	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 21020218
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **171827** Instrument ID **ICPMS3** Method: **SW6020B** **(Dissolve)**

LCS Sample ID: **LCS-171827-171827** Units: **mg/L** Analysis Date: **2/10/2021 07:34 PM**
Client ID: Run ID: **ICPMS3_210210B** SeqNo: **7133899** Prep Date: **2/9/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.09386	0.0050	0.1	0	93.9	80-120	0			
Beryllium	0.09556	0.0020	0.1	0	95.6	80-120	0			
Boron	0.451	0.020	0.5	0	90.2	80-120	0			
Cadmium	0.1006	0.0020	0.1	0	101	80-120	0			
Calcium	9.733	0.50	10	0	97.3	80-120	0			
Lead	0.0935	0.0050	0.1	0	93.5	80-120	0			
Lithium	0.09548	0.010	0.1	0	95.5	80-120	0			
Manganese	0.09292	0.0050	0.1	0	92.9	80-120	0			
Molybdenum	0.09283	0.0050	0.1	0	92.8	80-120	0			
Thallium	0.09105	0.0050	0.1	0	91	80-120	0			

MS Sample ID: **21020221-05CMS** Units: **mg/L** Analysis Date: **2/9/2021 04:43 PM**
Client ID: Run ID: **ICPMS3_210209A** SeqNo: **7131181** Prep Date: **2/9/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.1073	0.0050	0.1	0.004695	103	75-125	0			
Arsenic	0.1256	0.0050	0.1	0.02734	98.3	75-125	0			
Barium	0.1975	0.0050	0.1	0.09727	100	75-125	0			
Beryllium	0.102	0.0020	0.1	0.000004	102	75-125	0			
Cadmium	0.1033	0.0020	0.1	0.000858	102	75-125	0			
Chromium	0.09276	0.0050	0.1	-0.000101	92.9	75-125	0			
Cobalt	0.0935	0.0050	0.1	0.000074	93.4	75-125	0			
Iron	9.544	0.080	10	-0.000258	95.4	75-125	0			
Lead	0.09906	0.0050	0.1	-0.000002	99.1	75-125	0			
Lithium	0.1067	0.010	0.1	0.005053	102	75-125	0			
Magnesium	10.65	0.20	10	0.6432	100	75-125	0			
Manganese	0.09753	0.0050	0.1	0.000013	97.5	75-125	0			
Potassium	13.46	0.20	10	3.327	101	75-125	0			
Selenium	0.1159	0.0050	0.1	0.008307	108	75-125	0			
Sodium	11.55	0.20	10	1.711	98.4	75-125	0			
Thallium	0.09602	0.0050	0.1	0.00022	95.8	75-125	0			

MS Sample ID: **21020221-05CMS** Units: **mg/L** Analysis Date: **2/10/2021 07:59 PM**
Client ID: Run ID: **ICPMS3_210210B** SeqNo: **7133914** Prep Date: **2/9/2021** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	11.73	0.20	0.5	11.63	19.6	75-125	0			SO
Calcium	259.6	5.0	10	267.5	-78.8	75-125	0			SO
Molybdenum	8.941	0.050	0.1	9.43	-489	75-125	0			SO

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 21020218
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **171827** Instrument ID **ICPMS3** Method: **SW6020B** **(Dissolve)**

MSD Sample ID: **21020221-05CMSD** Units: **mg/L** Analysis Date: **2/9/2021 04:45 PM**
Client ID: Run ID: **ICPMS3_210209A** SeqNo: **7131182** Prep Date: **2/9/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.1081	0.0050	0.1	0.004695	103	75-125	0.1073	0.729	20	
Arsenic	0.1257	0.0050	0.1	0.02734	98.4	75-125	0.1256	0.0827	20	
Barium	0.1991	0.0050	0.1	0.09727	102	75-125	0.1975	0.83	20	
Beryllium	0.1025	0.0020	0.1	0.000004	102	75-125	0.102	0.478	20	
Cadmium	0.1032	0.0020	0.1	0.000858	102	75-125	0.1033	0.0814	20	
Calcium	253.8	0.50	10	245.8	80.1	75-125	251.3	0.993	20	EO
Chromium	0.09319	0.0050	0.1	-0.000101	93.3	75-125	0.09276	0.457	20	
Cobalt	0.093	0.0050	0.1	0.000074	92.9	75-125	0.0935	0.533	20	
Iron	9.524	0.080	10	-0.000258	95.2	75-125	9.544	0.211	20	
Lead	0.09986	0.0050	0.1	-0.000002	99.9	75-125	0.09906	0.802	20	
Lithium	0.1074	0.010	0.1	0.005053	102	75-125	0.1067	0.669	20	
Magnesium	10.69	0.20	10	0.6432	100	75-125	10.65	0.396	20	
Manganese	0.09729	0.0050	0.1	0.000013	97.3	75-125	0.09753	0.248	20	
Potassium	13.49	0.20	10	3.327	102	75-125	13.46	0.238	20	
Selenium	0.1103	0.0050	0.1	0.008307	102	75-125	0.1159	5	20	
Sodium	11.5	0.20	10	1.711	97.9	75-125	11.55	0.459	20	
Thallium	0.09707	0.0050	0.1	0.00022	96.9	75-125	0.09602	1.09	20	

MSD Sample ID: **21020221-05CMSD** Units: **mg/L** Analysis Date: **2/10/2021 08:00 PM**
Client ID: Run ID: **ICPMS3_210210B** SeqNo: **7133915** Prep Date: **2/9/2021** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	11.81	0.20	0.5	11.63	35.2	75-125	11.73	0.664	20	SO
Calcium	266.8	5.0	10	267.5	-6.95	75-125	259.6	2.73	20	SO
Molybdenum	9.188	0.050	0.1	9.43	-242	75-125	8.941	2.73	20	SO

The following samples were analyzed in this batch: 21020218-01C 21020218-02C 21020218-03C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 21020218
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **171837** Instrument ID **ICPMS3** Method: **SW6020B**

MBLK Sample ID: **MBLK-171837-171837** Units: **mg/L** Analysis Date: **2/9/2021 05:20 PM**
Client ID: Run ID: **ICPMS3_210209A** SeqNo: **7131221** Prep Date: **2/9/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.0050								
Arsenic	ND	0.0050								
Barium	ND	0.0050								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	0.50								
Chromium	ND	0.0050								
Cobalt	ND	0.0050								
Iron	ND	0.080								
Lead	ND	0.0050								
Lithium	ND	0.010								
Magnesium	ND	0.20								
Manganese	ND	0.0050								
Potassium	ND	0.20								
Selenium	ND	0.0050								
Sodium	ND	0.20								
Thallium	ND	0.0050								

MBLK Sample ID: **MBLK-171837-171837** Units: **mg/L** Analysis Date: **2/10/2021 08:10 PM**
Client ID: Run ID: **ICPMS3_210210B** SeqNo: **7133921** Prep Date: **2/9/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	ND	0.020								
Molybdenum	ND	0.0050								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 21020218
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **171837** Instrument ID **ICPMS3** Method: **SW6020B**

LCS	Sample ID: **LCS-171837-171837**				Units: **mg/L**			Analysis Date: **2/9/2021 05:21 PM**			
Client ID:		Run ID: **ICPMS3_210209A**			SeqNo: **7131223**			Prep Date: **2/9/2021**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.0943	0.0050	0.1	0	94.3	80-120	0			
Arsenic	0.1004	0.0050	0.1	0	100	80-120	0			
Barium	0.09716	0.0050	0.1	0	97.2	80-120	0			
Beryllium	0.09892	0.0020	0.1	0	98.9	80-120	0			
Boron	0.4506	0.020	0.5	0	90.1	80-120	0			
Cadmium	0.1018	0.0020	0.1	0	102	80-120	0			
Calcium	9.911	0.50	10	0	99.1	80-120	0			
Chromium	0.1011	0.0050	0.1	0	101	80-120	0			
Cobalt	0.1005	0.0050	0.1	0	101	80-120	0			
Iron	10	0.080	10	0	100	80-120	0			
Lead	0.09736	0.0050	0.1	0	97.4	80-120	0			
Lithium	0.09537	0.010	0.1	0	95.4	80-120	0			
Magnesium	10.02	0.20	10	0	100	80-120	0			
Manganese	0.09892	0.0050	0.1	0	98.9	80-120	0			
Molybdenum	0.09561	0.0050	0.1	0	95.6	80-120	0			
Potassium	9.937	0.20	10	0	99.4	80-120	0			
Selenium	0.101	0.0050	0.1	0	101	80-120	0			
Sodium	9.964	0.20	10	0	99.6	80-120	0			
Thallium	0.09287	0.0050	0.1	0	92.9	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 21020218
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **171837** Instrument ID **ICPMS3** Method: **SW6020B**

MS Sample ID: **21020218-01AMS** Units: **mg/L** Analysis Date: **2/9/2021 05:28 PM**

Client ID: **BAB-North** Run ID: **ICPMS3_210209A** SeqNo: **7131231** Prep Date: **2/9/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.09531	0.0050	0.1	0.000535	94.8	75-125	0			
Arsenic	0.106	0.0050	0.1	0.004913	101	75-125	0			
Barium	0.5807	0.0050	0.1	0.4786	102	75-125	0			O
Beryllium	0.1008	0.0020	0.1	0.000005	101	75-125	0			
Boron	0.6679	0.020	0.5	0.1696	99.7	75-125	0			
Cadmium	0.09992	0.0020	0.1	0.000028	99.9	75-125	0			
Calcium	50.88	0.50	10	41.71	91.7	75-125	0			O
Chromium	0.1048	0.0050	0.1	0.004783	100	75-125	0			
Cobalt	0.1001	0.0050	0.1	0.000044	100	75-125	0			
Iron	9.992	0.080	10	0.03947	99.5	75-125	0			
Lead	0.09806	0.0050	0.1	0.000997	97.1	75-125	0			
Lithium	0.1171	0.010	0.1	0.0174	99.7	75-125	0			
Magnesium	17.93	0.20	10	8.149	97.8	75-125	0			
Manganese	0.09893	0.0050	0.1	0.00235	96.6	75-125	0			
Molybdenum	0.1154	0.0050	0.1	0.01656	98.8	75-125	0			
Potassium	12.76	0.20	10	3.009	97.6	75-125	0			
Selenium	0.09775	0.0050	0.1	0.000816	96.9	75-125	0			
Sodium	37.41	0.20	10	28.03	93.8	75-125	0			
Thallium	0.0931	0.0050	0.1	0.000099	93	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 21020218
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **171837** Instrument ID **ICPMS3** Method: **SW6020B**

MSD Sample ID: **21020218-01AMSD** Units: **mg/L** Analysis Date: **2/9/2021 05:29 PM**

Client ID: **BAB-North** Run ID: **ICPMS3_210209A** SeqNo: **7131233** Prep Date: **2/9/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.09562	0.0050	0.1	0.000535	95.1	75-125	0.09531	0.325	20	
Arsenic	0.1066	0.0050	0.1	0.004913	102	75-125	0.106	0.583	20	
Barium	0.5787	0.0050	0.1	0.4786	100	75-125	0.5807	0.339	20	O
Beryllium	0.09986	0.0020	0.1	0.000005	99.9	75-125	0.1008	0.892	20	
Boron	0.6702	0.020	0.5	0.1696	100	75-125	0.6679	0.348	20	
Cadmium	0.1001	0.0020	0.1	0.000028	100	75-125	0.09992	0.211	20	
Calcium	51.01	0.50	10	41.71	93	75-125	50.88	0.261	20	O
Chromium	0.1046	0.0050	0.1	0.004783	99.8	75-125	0.1048	0.244	20	
Cobalt	0.1003	0.0050	0.1	0.000044	100	75-125	0.1001	0.188	20	
Iron	10.02	0.080	10	0.03947	99.8	75-125	9.992	0.277	20	
Lead	0.09843	0.0050	0.1	0.000997	97.4	75-125	0.09806	0.379	20	
Lithium	0.1162	0.010	0.1	0.0174	98.8	75-125	0.1171	0.735	20	
Magnesium	17.71	0.20	10	8.149	95.7	75-125	17.93	1.2	20	
Manganese	0.09947	0.0050	0.1	0.00235	97.1	75-125	0.09893	0.552	20	
Molybdenum	0.1174	0.0050	0.1	0.01656	101	75-125	0.1154	1.73	20	
Potassium	12.83	0.20	10	3.009	98.2	75-125	12.76	0.546	20	
Selenium	0.09486	0.0050	0.1	0.000816	94	75-125	0.09775	2.99	20	
Sodium	37.4	0.20	10	28.03	93.8	75-125	37.41	0.0176	20	
Thallium	0.09346	0.0050	0.1	0.000099	93.4	75-125	0.0931	0.388	20	

The following samples were analyzed in this batch: 21020218-01A 21020218-02A 21020218-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 21020218
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **171610** Instrument ID **TDS** Method: **A2540 C-11**

MBLK Sample ID: **MBLK-171610-171610** Units: **mg/L** Analysis Date: **2/9/2021 02:45 PM**
Client ID: Run ID: **TDS_210209A** SeqNo: **7130209** Prep Date: **2/7/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	ND	30								

LCS Sample ID: **LCS-171610-171610** Units: **mg/L** Analysis Date: **2/9/2021 02:45 PM**
Client ID: Run ID: **TDS_210209A** SeqNo: **7130208** Prep Date: **2/7/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	464	30	495	0	93.7	85-109	0			

DUP Sample ID: **21020092-13A DUP** Units: **mg/L** Analysis Date: **2/9/2021 02:45 PM**
Client ID: Run ID: **TDS_210209A** SeqNo: **7130187** Prep Date: **2/7/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	1520	300	0	0	0	0-0	1500	1.32	10	

DUP Sample ID: **21020221-01B DUP** Units: **mg/L** Analysis Date: **2/9/2021 02:45 PM**
Client ID: Run ID: **TDS_210209A** SeqNo: **7130203** Prep Date: **2/7/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	600	100	0	0	0	0-0	593.3	1.12	10	H

The following samples were analyzed in this batch: 21020218-01B 21020218-02B 21020218-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 21020218
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **R309401** Instrument ID **IC3** Method: **SW9056A**

MBLK Sample ID: **MBLK-R309401** Units: **mg/L** Analysis Date: **2/5/2021 02:50 PM**
Client ID: Run ID: **IC3_210205A** SeqNo: **7124881** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	1.0								
Fluoride	ND	0.10								
Sulfate	ND	1.0								

LCS Sample ID: **LCS-R309401** Units: **mg/L** Analysis Date: **2/5/2021 03:10 PM**
Client ID: Run ID: **IC3_210205A** SeqNo: **7124882** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.483	1.0	10	0	94.8	88-110	0			
Fluoride	1.989	0.10	2	0	99.5	82-116	0			
Sulfate	9.754	1.0	10	0	97.5	90-110	0			

MS Sample ID: **21020375-03A MS** Units: **mg/L** Analysis Date: **2/5/2021 05:24 PM**
Client ID: Run ID: **IC3_210205A** SeqNo: **7124889** Prep Date: DF: **40**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	761.2	40	400	366.7	98.6	88-110	0			
Sulfate	399	40	400	22.67	94.1	90-110	0			

MSD Sample ID: **21020375-03A MSD** Units: **mg/L** Analysis Date: **2/5/2021 05:44 PM**
Client ID: Run ID: **IC3_210205A** SeqNo: **7124890** Prep Date: DF: **40**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	761.5	40	400	366.7	98.7	88-110	761.2	0.0436	20	
Sulfate	397.8	40	400	22.67	93.8	90-110	399	0.305	20	

The following samples were analyzed in this batch: 21020218-01B 21020218-02B 21020218-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 21020218
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **R309522** Instrument ID **Titrator 1** Method: **A2320 B-11**

MBLK Sample ID: **MB-R309522-R309522** Units: **mg/L** Analysis Date: **2/9/2021 12:49 PM**
Client ID: Run ID: **TITRATOR 1_210209A** SeqNo: **7129322** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (as CaCO3)	ND	10								
Alkalinity, Carbonate (as CaCO3)	ND	10								
Alkalinity, Hydroxide (as CaCO3)	ND	10								
Alkalinity, Phenolphthalein (as CaCO3	ND	10								
Alkalinity, Total (as CaCO3)	ND	10								

LCS Sample ID: **LCS-R309522-R309522** Units: **mg/L** Analysis Date: **2/9/2021 12:49 PM**
Client ID: Run ID: **TITRATOR 1_210209A** SeqNo: **7129323** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Carbonate (as CaCO3)	894.2	10	925	0	96.7	88-110	0			
Alkalinity, Total (as CaCO3)	965.4	10	1000	0	96.5	89-103	0			

DUP Sample ID: **21020218-01B DUP** Units: **mg/L** Analysis Date: **2/9/2021 12:49 PM**
Client ID: **BAB-North** Run ID: **TITRATOR 1_210209A** SeqNo: **7129326** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (as CaCO3)	83.06	10	0	0	0	0-0	87.95	5.72	10	
Alkalinity, Carbonate (as CaCO3)	ND	10	0	0	0	0-0	0	0	10	
Alkalinity, Hydroxide (as CaCO3)	ND	10	0	0	0	0-0	0	0	10	
Alkalinity, Phenolphthalein (as CaCO3	ND	10	0	0	0	0-0	0	0	10	
Alkalinity, Total (as CaCO3)	83.06	10	0	0	0	0-0	87.95	5.72	10	

DUP Sample ID: **21020353-01H DUP** Units: **mg/L** Analysis Date: **2/9/2021 12:49 PM**
Client ID: Run ID: **TITRATOR 1_210209A** SeqNo: **7129337** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (as CaCO3)	767.6	10	0	0	0	0-0	778.2	1.37	10	

The following samples were analyzed in this batch: 21020218-01B 21020218-02B 21020218-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Geosyntec Consultants
Work Order: 21020218
Project: DTE- Belle River (GLP-8017)

QC BATCH REPORT

Batch ID: **R309524** Instrument ID **Titrator 1** Method: **A4500-H B-11**

LCS Sample ID: **LCS-R309524-R309524** Units: **s.u.** Analysis Date: **2/9/2021 12:49 PM**
Client ID: Run ID: **TITRATOR 1_210209B** SeqNo: **7129346** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	3.99	0.10	4	0	99.8	92-108	0			

LCS Sample ID: **LCS-R309524-R309524** Units: **s.u.** Analysis Date: **2/9/2021 12:49 PM**
Client ID: Run ID: **TITRATOR 1_210209B** SeqNo: **7129349** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	3.99	0.10	4	0	99.8	92-108	0			

DUP Sample ID: **21020240-01A DUP** Units: **s.u.** Analysis Date: **2/9/2021 12:49 PM**
Client ID: Run ID: **TITRATOR 1_210209B** SeqNo: **7129348** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	7.63	0.10	0	0	0	0-0	7.87	3.1	5	H
Temperature	20.95	0.10	0	0	0	0-0	21.12	0.808		H

DUP Sample ID: **21020218-01B DUP** Units: **s.u.** Analysis Date: **2/9/2021 12:49 PM**
Client ID: **BAB-North** Run ID: **TITRATOR 1_210209B** SeqNo: **7129351** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	7.85	0.10	0	0	0	0-0	7.87	0.254	5	H
Temperature	20.03	0.10	0	0	0		20.3	1.34		H

The following samples were analyzed in this batch: 21020218-01B 21020218-02B 21020218-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Middletown, PA +1 717 944 5541
Spring City, PA +1 610 948 4903
Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

Chain of Custody Form

Page _____ of _____

COC ID: 235261

21020218

ALS Project Manager: | ALS Work Order #: 34024

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	DTE Belle River	A	pH, TDS, Alkalinity
Work Order		Project Number	GIP-8017	B	Anions - Cl, Fl, SO4
Company Name	Geosyntec Consultants	Bill To Company	Geosyntec Consultants	C	Metals (Total)
Send Report To	Michael Coram	Invoice Attn	Michael Coram	D	Metals (Dissolved) Lab Filtered
Address	2100 Commonwealth Blvd. Suite 100	Address	2100 Commonwealth Blvd. Suite 100	E	
				F	
City/State/Zip	Ann Arbor, MI 48105	City/State/Zip	Ann Arbor, MI 48105	G	
Phone	(734) 794-1547	Phone	(734) 794-1547	H	
Fax	(734) 332-8063	Fax	(734) 332-8063	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	BAB-North	1/29	12:35	GW	2	3	X	X	X	X							
2	BAB-South	1/29	12:35	↓	↓	↓	X	X	X	X							
3	DB	1/29	13:20	↓	↓	↓	X	X	X	X							
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Mike Coram

Shipment Method: Fed Ex

Required Turnaround Time: (Check Box) ☐ Std 10 WK Days ☐ 5 WK Days ☐ Other ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date: 2/1	Time: 1400	Received by:	Notes: Diss Metals → lab F. Hoe
Relinquished by: Fedex	Date: 2/3/21	Time: 9:00	Received by (Laboratory):	
Logged by (Laboratory): MTG	Date: 2/3/21	Time: 14:15	Checked by (Laboratory):	

Cooler ID	Cooler Temp.
	0.8°C
	IR1
	8424

QC Package: (Check One Box Below)
☐ Level II Std QC ☐ TRRP CheckList
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SVM846/CLP
☐ Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GEOSYNTEC - AA** Date/Time Received: **03-Feb-21 09:00**

Work Order: **21020218** Received by: **MJG**

Checklist completed by Matthew Gaylord (eSignature) 03-Feb-21 (Date) Reviewed by: Chad Whelton (eSignature) 03-Feb-21 (Date)

Matrices: Groundwater

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	0.8/0.8C	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	2/3/2021 2:16:54 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

Eurofins Environmental Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Vincent Buening
TRC Environmental Corporation.
1540 Eisenhower Place
Ann Arbor, Michigan 48108-7080

Generated 1/4/2023 7:30:32 PM

JOB DESCRIPTION

CCR DTE Belle River Power-Aquifer

JOB NUMBER

240-178276-1

Eurofins Canton
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization

Generated
1/4/2023 7:30:32 PM

Authorized for release by
Kris Brooks, Project Manager II
Kris.Brooks@et.eurofinsus.com
(330)966-9790

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-178276-1
Project/Site: CCR DTE Belle River Power-Aquifer

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

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

Case Narrative

Client: TRC Environmental Corporation. Job ID: 240-178276-1
Project/Site: CCR DTE Belle River Power-Aquifer

Job ID: 240-178276-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-178276-1

Receipt
The samples were received on 12/20/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.0°C

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

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

Method Summary

Client: TRC Environmental Corporation. Job ID: 240-178276-1
Project/Site: CCR DTE Belle River Power-Aquifer

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	EET CAN
6020	Metals (ICP/MS)	SW846	EET CAN
2320B-1997	Alkalinity, Total	SM	EET CAN
9056A	Anions, Ion Chromatography	SW846	EET CAN
9060A	Organic Carbon, Total (TOC)	SW846	EET CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CAN

Protocol References:

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

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

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-178276-1
Project/Site: CCR DTE Belle River Power-Aquifer

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-178276-1	NORTH BAB	Water	12/14/22 15:28	12/20/22 10:00
240-178276-2	DB-01	Water	12/16/22 14:40	12/20/22 10:00
240-178276-3	SC-01	Water	12/16/22 15:49	12/20/22 10:00
240-178276-4	DUP-01	Water	12/14/22 00:00	12/20/22 10:00

Detection Summary

Client: TRC Environmental Corporation.
Job ID: 240-178276-1
Project/Site: CCR DTE Belle River Power-Aquifer

Client Sample ID: NORTH BAB
Lab Sample ID: 240-178276-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	190		100	57	ug/L	1		6010B	Total Recoverable
Barium	270		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	49000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	8200		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	3200		1000	1000	ug/L	1		6020	Total Recoverable
Molybdenum	23		5.0	5.0	ug/L	1		6020	Total Recoverable
Strontium	2000		10	10	ug/L	1		6020	Total Recoverable
Sodium	49000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	26		8.0	8.0	ug/L	1		6020	Total Recoverable
Alkalinity	97		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	50		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Carbonate Alkalinity as CaCO3	47		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Chloride	8.2		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.099		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	150		1.0	1.0	mg/L	1		9056A	Total/NA
Total Organic Carbon	1.1		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 1	1.1		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 2	1.1		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	1.1		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	1.1		1.0	0.35	mg/L	1		9060A	Total/NA

Client Sample ID: DB-01
Lab Sample ID: 240-178276-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	7300		100	57	ug/L	1		6010B	Total Recoverable
Barium	290		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	110000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	15000		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	13000		1000	1000	ug/L	1		6020	Total Recoverable
Molybdenum	240		5.0	5.0	ug/L	1		6020	Total Recoverable
Strontium	2300		10	10	ug/L	1		6020	Total Recoverable
Sodium	460000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	83		8.0	8.0	ug/L	1		6020	Total Recoverable
Alkalinity	150		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	120		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Carbonate Alkalinity as CaCO3	27		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Chloride	46		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.26		0.050	0.050	mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample ID: DB-01 (Continued) — Lab Sample ID: 240-178276-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1100		10	10	mg/L	10		9056A	Total/NA
Total Organic Carbon	3.7		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 1	3.7		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 2	3.7		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	3.7		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	3.7		1.0	0.35	mg/L	1		9060A	Total/NA

Client Sample ID: SC-01 — Lab Sample ID: 240-178276-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	13		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	25000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	7600		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	1100		1000	1000	ug/L	1		6020	Total Recoverable
Strontium	86		10	10	ug/L	1		6020	Total Recoverable
Sodium	5900		1000	1000	ug/L	1		6020	Total Recoverable
Alkalinity	81		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	81		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Chloride	9.6		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.080		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	15		1.0	1.0	mg/L	1		9056A	Total/NA
Total Organic Carbon	1.9		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 1	1.9		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 2	1.9		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	1.9		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	1.9		1.0	0.35	mg/L	1		9060A	Total/NA

Client Sample ID: DUP-01 — Lab Sample ID: 240-178276-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100	57	ug/L	1		6010B	Total Recoverable
Barium	310		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	33000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	11000		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	2700		1000	1000	ug/L	1		6020	Total Recoverable
Molybdenum	85		5.0	5.0	ug/L	1		6020	Total Recoverable
Strontium	920		10	10	ug/L	1		6020	Total Recoverable
Sodium	340000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	19		8.0	8.0	ug/L	1		6020	Total Recoverable
Alkalinity	150		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	150		5.0	2.6	mg/L	1		2320B-1997	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: DUP-01 (Continued) Lab Sample ID: 240-178276-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	550		10	10	mg/L	10		9056A	Total/NA
Fluoride	1.8		0.050	0.050	mg/L	1		9056A	Total/NA
Total Organic Carbon	0.70	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 1	0.70	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 2	0.69	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	0.70	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	0.72	J	1.0	0.35	mg/L	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Client: TRC Environmental Corporation.
Job ID: 240-178276-1
Project/Site: CCR DTE Belle River Power-Aquifer

Client Sample ID: NORTH BAB
Lab Sample ID: 240-178276-1

Date Collected: 12/14/22 15:28
Matrix: Water
Date Received: 12/20/22 10:00

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	190		100	57	ug/L		12/27/22 12:00	12/28/22 15:18	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	270		5.0	5.0	ug/L		12/27/22 12:00	12/28/22 16:01	1
Calcium	49000		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:01	1
Magnesium	8200		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:01	1
Potassium	3200		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:01	1
Molybdenum	23		5.0	5.0	ug/L		12/27/22 12:00	12/28/22 16:01	1
Strontium	2000		10	10	ug/L		12/27/22 12:00	12/28/22 16:01	1
Sodium	49000		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:01	1
Lithium	26		8.0	8.0	ug/L		12/27/22 12:00	12/28/22 16:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	97		5.0	2.6	mg/L			12/21/22 22:20	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	50		5.0	2.6	mg/L			12/21/22 22:20	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	47		5.0	2.6	mg/L			12/21/22 22:20	1
Chloride (SW846 9056A)	8.2		1.0	1.0	mg/L			12/31/22 21:00	1
Fluoride (SW846 9056A)	0.099		0.050	0.050	mg/L			12/31/22 21:00	1
Sulfate (SW846 9056A)	150		1.0	1.0	mg/L			12/31/22 21:00	1
Total Organic Carbon (SW846 9060A)	1.1		1.0	0.35	mg/L			12/29/22 07:07	1
TOC Result 1 (SW846 9060A)	1.1		1.0	0.35	mg/L			12/29/22 07:07	1
TOC Result 2 (SW846 9060A)	1.1		1.0	0.35	mg/L			12/29/22 07:07	1
TOC Result 3 (SW846 9060A)	1.1		1.0	0.35	mg/L			12/29/22 07:07	1
TOC Result 4 (SW846 9060A)	1.1		1.0	0.35	mg/L			12/29/22 07:07	1

Client: TRC Environmental Corporation.
Job ID: 240-178276-1
Project/Site: CCR DTE Belle River Power-Aquifer

Client Sample ID: DB-01
Lab Sample ID: 240-178276-2
Date Collected: 12/16/22 14:40
Matrix: Water
Date Received: 12/20/22 10:00

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	7300		100	57	ug/L		12/27/22 12:00	12/28/22 15:22	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	290		5.0	5.0	ug/L		12/27/22 12:00	12/28/22 16:12	1
Calcium	110000		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:12	1
Magnesium	15000		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:12	1
Potassium	13000		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:12	1
Molybdenum	240		5.0	5.0	ug/L		12/27/22 12:00	12/28/22 16:12	1
Strontium	2300		10	10	ug/L		12/27/22 12:00	12/28/22 16:12	1
Sodium	460000		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:12	1
Lithium	83		8.0	8.0	ug/L		12/27/22 12:00	12/28/22 16:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	150		5.0	2.6	mg/L			12/21/22 22:24	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	120		5.0	2.6	mg/L			12/21/22 22:24	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	27		5.0	2.6	mg/L			12/21/22 22:24	1
Chloride (SW846 9056A)	46		1.0	1.0	mg/L			12/31/22 21:21	1
Fluoride (SW846 9056A)	0.26		0.050	0.050	mg/L			12/31/22 21:21	1
Sulfate (SW846 9056A)	1100		10	10	mg/L			12/31/22 21:43	10
Total Organic Carbon (SW846 9060A)	3.7		1.0	0.35	mg/L			12/29/22 08:01	1
TOC Result 1 (SW846 9060A)	3.7		1.0	0.35	mg/L			12/29/22 08:01	1
TOC Result 2 (SW846 9060A)	3.7		1.0	0.35	mg/L			12/29/22 08:01	1
TOC Result 3 (SW846 9060A)	3.7		1.0	0.35	mg/L			12/29/22 08:01	1
TOC Result 4 (SW846 9060A)	3.7		1.0	0.35	mg/L			12/29/22 08:01	1

Client: TRC Environmental Corporation.
Job ID: 240-178276-1
Project/Site: CCR DTE Belle River Power-Aquifer

Client Sample ID: SC-01
Lab Sample ID: 240-178276-3
Date Collected: 12/16/22 15:49
Matrix: Water
Date Received: 12/20/22 10:00

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	57	ug/L		12/27/22 12:00	12/28/22 15:26	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	**13**		5.0	5.0	ug/L		12/27/22 12:00	12/28/22 16:14	1
Calcium	**25000**		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:14	1
Magnesium	**7600**		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:14	1
Potassium	**1100**		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:14	1
Molybdenum	5.0	U	5.0	5.0	ug/L		12/27/22 12:00	12/28/22 16:14	1
Strontium	**86**		10	10	ug/L		12/27/22 12:00	12/28/22 16:14	1
Sodium	**5900**		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:14	1
Lithium	8.0	U	8.0	8.0	ug/L		12/27/22 12:00	12/28/22 16:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	**81**		5.0	2.6	mg/L			12/21/22 22:28	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	**81**		5.0	2.6	mg/L			12/21/22 22:28	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	5.0	U	5.0	2.6	mg/L			12/21/22 22:28	1
Chloride (SW846 9056A)	**9.6**		1.0	1.0	mg/L			12/31/22 22:05	1
Fluoride (SW846 9056A)	**0.080**		0.050	0.050	mg/L			12/31/22 22:05	1
Sulfate (SW846 9056A)	**15**		1.0	1.0	mg/L			12/31/22 22:05	1
Total Organic Carbon (SW846 9060A)	**1.9**		1.0	0.35	mg/L			12/29/22 08:37	1
TOC Result 1 (SW846 9060A)	**1.9**		1.0	0.35	mg/L			12/29/22 08:37	1
TOC Result 2 (SW846 9060A)	**1.9**		1.0	0.35	mg/L			12/29/22 08:37	1
TOC Result 3 (SW846 9060A)	**1.9**		1.0	0.35	mg/L			12/29/22 08:37	1
TOC Result 4 (SW846 9060A)	**1.9**		1.0	0.35	mg/L			12/29/22 08:37	1

Client: TRC Environmental Corporation.
Job ID: 240-178276-1
Project/Site: CCR DTE Belle River Power-Aquifer

Client Sample ID: DUP-01
Date Collected: 12/14/22 00:00
Date Received: 12/20/22 10:00

Lab Sample ID: 240-178276-4
Matrix: Water

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100	57	ug/L		12/27/22 12:00	12/28/22 15:31	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	310		5.0	5.0	ug/L		12/27/22 12:00	12/28/22 16:17	1
Calcium	33000		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:17	1
Magnesium	11000		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:17	1
Potassium	2700		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:17	1
Molybdenum	85		5.0	5.0	ug/L		12/27/22 12:00	12/28/22 16:17	1
Strontium	920		10	10	ug/L		12/27/22 12:00	12/28/22 16:17	1
Sodium	340000		1000	1000	ug/L		12/27/22 12:00	12/28/22 16:17	1
Lithium	19		8.0	8.0	ug/L		12/27/22 12:00	12/28/22 16:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	150		5.0	2.6	mg/L			12/21/22 22:32	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	150		5.0	2.6	mg/L			12/21/22 22:32	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	5.0	U	5.0	2.6	mg/L			12/21/22 22:32	1
Chloride (SW846 9056A)	550		10	10	mg/L			12/31/22 22:48	10
Fluoride (SW846 9056A)	1.8		0.050	0.050	mg/L			12/31/22 22:27	1
Sulfate (SW846 9056A)	1.0	U	1.0	1.0	mg/L			12/31/22 22:27	1
Total Organic Carbon (SW846 9060A)	0.70	J	1.0	0.35	mg/L			12/29/22 09:12	1
TOC Result 1 (SW846 9060A)	0.70	J	1.0	0.35	mg/L			12/29/22 09:12	1
TOC Result 2 (SW846 9060A)	0.69	J	1.0	0.35	mg/L			12/29/22 09:12	1
TOC Result 3 (SW846 9060A)	0.70	J	1.0	0.35	mg/L			12/29/22 09:12	1
TOC Result 4 (SW846 9060A)	0.72	J	1.0	0.35	mg/L			12/29/22 09:12	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-557192/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 557398 — **Prep Batch: 557192**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	57	ug/L		12/27/22 12:00	12/28/22 14:02	1

Lab Sample ID: LCS 240-557192/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 557398 — **Prep Batch: 557192**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1000	1010		ug/L		101	80 - 120

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-557192/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 557451 — **Prep Batch: 557192**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	5.0	U	5.0	5.0	ug/L		12/27/22 12:00	12/28/22 15:42	1
Calcium	1000	U	1000	1000	ug/L		12/27/22 12:00	12/28/22 15:42	1
Magnesium	1000	U	1000	1000	ug/L		12/27/22 12:00	12/28/22 15:42	1
Potassium	1000	U	1000	1000	ug/L		12/27/22 12:00	12/28/22 15:42	1
Molybdenum	5.0	U	5.0	5.0	ug/L		12/27/22 12:00	12/28/22 15:42	1
Strontium	10	U	10	10	ug/L		12/27/22 12:00	12/28/22 15:42	1
Sodium	1000	U	1000	1000	ug/L		12/27/22 12:00	12/28/22 15:42	1
Lithium	8.0	U	8.0	8.0	ug/L		12/27/22 12:00	12/28/22 15:42	1

Lab Sample ID: LCS 240-557192/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 557451 — **Prep Batch: 557192**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	1000	938		ug/L		94	80 - 120
Calcium	25000	24500		ug/L		98	80 - 120
Magnesium	25000	24500		ug/L		98	80 - 120
Potassium	25000	24500		ug/L		98	80 - 120
Molybdenum	500	465		ug/L		93	80 - 120
Strontium	500	469		ug/L		94	80 - 120
Sodium	25000	24500		ug/L		98	80 - 120
Lithium	500	483		ug/L		97	80 - 120

Method: 2320B-1997 - Alkalinity, Total

Lab Sample ID: MB 240-557050/30 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557050

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0	2.6	mg/L			12/21/22 20:50	1
Bicarbonate Alkalinity as CaCO3	5.0	U	5.0	2.6	mg/L			12/21/22 20:50	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	2.6	mg/L			12/21/22 20:50	1

Method: 2320B-1997 - Alkalinity, Total (Continued)

Lab Sample ID: MB 240-557050/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557050

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0	2.6	mg/L			12/21/22 18:59	1
Bicarbonate Alkalinity as CaCO3	5.0	U	5.0	2.6	mg/L			12/21/22 18:59	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	2.6	mg/L			12/21/22 18:59	1

Lab Sample ID: LCS 240-557050/29 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557050

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	146	140		mg/L		96	86 - 123

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-557649/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557649

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			12/31/22 07:59	1
Fluoride	0.050	U	0.050	0.050	mg/L			12/31/22 07:59	1
Sulfate	1.0	U	1.0	1.0	mg/L			12/31/22 07:59	1

Lab Sample ID: LCS 240-557649/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557649

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	48.9		mg/L		98	90 - 110
Fluoride	2.50	2.65		mg/L		106	90 - 110
Sulfate	50.0	50.3		mg/L		101	90 - 110

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 240-557515/34 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557515

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0	0.35	mg/L			12/29/22 06:09	1
TOC Result 1	1.0	U	1.0	0.35	mg/L			12/29/22 06:09	1

Lab Sample ID: MB 240-557515/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557515

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0	0.35	mg/L			12/28/22 16:49	1
TOC Result 1	1.0	U	1.0	0.35	mg/L			12/28/22 16:49	1

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 240-557515/35 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 557515

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	18.3	18.3		mg/L		100	85 - 115
TOC Result 1	18.3	18.3		mg/L		100	85 - 115

Lab Sample ID: LCS 240-557515/5 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 557515

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	18.3	18.3		mg/L		100	85 - 115
TOC Result 1	18.3	18.3		mg/L		100	85 - 115

QC Association Summary

Client: TRC Environmental Corporation. Job ID: 240-178276-1
Project/Site: CCR DTE Belle River Power-Aquifer

Metals

Prep Batch: 557192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-178276-1	NORTH BAB	Total Recoverable	Water	3005A	
240-178276-2	DB-01	Total Recoverable	Water	3005A	
240-178276-3	SC-01	Total Recoverable	Water	3005A	
240-178276-4	DUP-01	Total Recoverable	Water	3005A	
MB 240-557192/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-557192/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-557192/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 557398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-178276-1	NORTH BAB	Total Recoverable	Water	6010B	557192
240-178276-2	DB-01	Total Recoverable	Water	6010B	557192
240-178276-3	SC-01	Total Recoverable	Water	6010B	557192
240-178276-4	DUP-01	Total Recoverable	Water	6010B	557192
MB 240-557192/1-A	Method Blank	Total Recoverable	Water	6010B	557192
LCS 240-557192/2-A	Lab Control Sample	Total Recoverable	Water	6010B	557192

Analysis Batch: 557451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-178276-1	NORTH BAB	Total Recoverable	Water	6020	557192
240-178276-2	DB-01	Total Recoverable	Water	6020	557192
240-178276-3	SC-01	Total Recoverable	Water	6020	557192
240-178276-4	DUP-01	Total Recoverable	Water	6020	557192
MB 240-557192/1-A	Method Blank	Total Recoverable	Water	6020	557192
LCS 240-557192/3-A	Lab Control Sample	Total Recoverable	Water	6020	557192

General Chemistry

Analysis Batch: 557050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-178276-1	NORTH BAB	Total/NA	Water	2320B-1997	
240-178276-2	DB-01	Total/NA	Water	2320B-1997	
240-178276-3	SC-01	Total/NA	Water	2320B-1997	
240-178276-4	DUP-01	Total/NA	Water	2320B-1997	
MB 240-557050/30	Method Blank	Total/NA	Water	2320B-1997	
MB 240-557050/4	Method Blank	Total/NA	Water	2320B-1997	
LCS 240-557050/29	Lab Control Sample	Total/NA	Water	2320B-1997	

Analysis Batch: 557515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-178276-1	NORTH BAB	Total/NA	Water	9060A	
240-178276-2	DB-01	Total/NA	Water	9060A	
240-178276-3	SC-01	Total/NA	Water	9060A	
240-178276-4	DUP-01	Total/NA	Water	9060A	
MB 240-557515/34	Method Blank	Total/NA	Water	9060A	
MB 240-557515/4	Method Blank	Total/NA	Water	9060A	
LCS 240-557515/35	Lab Control Sample	Total/NA	Water	9060A	
LCS 240-557515/5	Lab Control Sample	Total/NA	Water	9060A	

QC Association Summary

Client: TRC Environmental Corporation. Job ID: 240-178276-1
Project/Site: CCR DTE Belle River Power-Aquifer

General Chemistry

Analysis Batch: 557649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-178276-1	NORTH BAB	Total/NA	Water	9056A	
240-178276-2	DB-01	Total/NA	Water	9056A	
240-178276-2	DB-01	Total/NA	Water	9056A	
240-178276-3	SC-01	Total/NA	Water	9056A	
240-178276-4	DUP-01	Total/NA	Water	9056A	
240-178276-4	DUP-01	Total/NA	Water	9056A	
MB 240-557649/3	Method Blank	Total/NA	Water	9056A	
LCS 240-557649/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power-Aquifer

Job ID: 240-178276-1

Client Sample ID: NORTH BAB

Date Collected: 12/14/22 15:28
Date Received: 12/20/22 10:00

Lab Sample ID: 240-178276-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			557192	SHB	EET CAN	12/27/22 12:00
Total Recoverable	Analysis	6010B		1	557398	RKT	EET CAN	12/28/22 15:18
Total Recoverable	Prep	3005A			557192	SHB	EET CAN	12/27/22 12:00
Total Recoverable	Analysis	6020		1	557451	DSH	EET CAN	12/28/22 16:01
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 22:20
Total/NA	Analysis	9056A		1	557649	JMB	EET CAN	12/31/22 21:00
Total/NA	Analysis	9060A		1	557515	MMS	EET CAN	12/29/22 07:07

Client Sample ID: DB-01

Date Collected: 12/16/22 14:40
Date Received: 12/20/22 10:00

Lab Sample ID: 240-178276-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			557192	SHB	EET CAN	12/27/22 12:00
Total Recoverable	Analysis	6010B		1	557398	RKT	EET CAN	12/28/22 15:22
Total Recoverable	Prep	3005A			557192	SHB	EET CAN	12/27/22 12:00
Total Recoverable	Analysis	6020		1	557451	DSH	EET CAN	12/28/22 16:12
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 22:24
Total/NA	Analysis	9056A		1	557649	JMB	EET CAN	12/31/22 21:21
Total/NA	Analysis	9056A		10	557649	JMB	EET CAN	12/31/22 21:43
Total/NA	Analysis	9060A		1	557515	MMS	EET CAN	12/29/22 08:01

Client Sample ID: SC-01

Date Collected: 12/16/22 15:49
Date Received: 12/20/22 10:00

Lab Sample ID: 240-178276-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			557192	SHB	EET CAN	12/27/22 12:00
Total Recoverable	Analysis	6010B		1	557398	RKT	EET CAN	12/28/22 15:26
Total Recoverable	Prep	3005A			557192	SHB	EET CAN	12/27/22 12:00
Total Recoverable	Analysis	6020		1	557451	DSH	EET CAN	12/28/22 16:14
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 22:28
Total/NA	Analysis	9056A		1	557649	JMB	EET CAN	12/31/22 22:05
Total/NA	Analysis	9060A		1	557515	MMS	EET CAN	12/29/22 08:37

Client Sample ID: DUP-01

Date Collected: 12/14/22 00:00
Date Received: 12/20/22 10:00

Lab Sample ID: 240-178276-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			557192	SHB	EET CAN	12/27/22 12:00
Total Recoverable	Analysis	6010B		1	557398	RKT	EET CAN	12/28/22 15:31
Total Recoverable	Prep	3005A			557192	SHB	EET CAN	12/27/22 12:00
Total Recoverable	Analysis	6020		1	557451	DSH	EET CAN	12/28/22 16:17

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power-Aquifer

Job ID: 240-178276-1

Client Sample ID: DUP-01

Date Collected: 12/14/22 00:00
Date Received: 12/20/22 10:00

Lab Sample ID: 240-178276-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 22:32
Total/NA	Analysis	9056A		1	557649	JMB	EET CAN	12/31/22 22:27
Total/NA	Analysis	9056A		10	557649	JMB	EET CAN	12/31/22 22:48
Total/NA	Analysis	9060A		1	557515	MMS	EET CAN	12/29/22 09:12

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-178276-1
Project/Site: CCR DTE Belle River Power-Aquifer

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Michigan	State	9135	02-27-23
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

MICHIGAN 190

Chain of Custody Record

3.2/3.0

eurofins | Environment Testing

Client Information	Sampler: J. Krenz	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-102238-37085.5
Client Contact: Jacob Krenz	Phone: 734-395-9804	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page 5 of 7
Company: TRC Environmental Corporation.	PWSID:			Job #:
Address: 1540 Eisenhower Place	Due Date Requested:			
City: Ann Arbor	TAT Requested (days):			
State, Zip: MI, 48108-7080	Compliance Project: ∆ Yes ∆ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: ~~179071 2022~~ [redacted] 193523			
Email: JKrenz@trccompanies.com	WO #: 370020~~.0003.01.T2~~			
Project Name: CCR DTE Belle River Power-Aquifer	Project #: ~~87010~~463			
Site: Michigan	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B - Carb, BiCarb & Total Alkalinity	9056A_28D - Chloride, Sulfate	6020 - (MOD) Metals - Ca,Mg,Na,K, Ba, Mo, B, Sr, Li	TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	D	A		
North BAB	12-14-22	1528	G	Water	N	N	X	X	X	X	4	
DB-01	12-16-22	1440	G	Water			X	X	X	X	4	
SC-01	12-16-22	1549	G	Water			X	X	X	X	4	
DUP-01	12-14-22	—	G	Water			X	X	X	X	4	
				Water								
				Water								
				Water								
				Water								
				Water								
				Water								
				Water								

240-178276 Chain of Custody

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

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		12-19-22 / 0850	TRC	TRC Storage	12-19-22 / 0850	TRC
2	TRC Sample Storage Grant Fedewa	12/19/22/1039			12/19/22 1040	
3		12/19/22 1400			12-20-22 10:00	

Custody Seals Intact: ∆ Yes ∆ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 06 08 2021

Eurofins - Canton Sample Receipt Form/Narrative **Login # :** 178276
Barberton Facility

Client TRC Site Name _____ Cooler unpacked by: Chamek

Cooler Received on 12-20-22 Opened on 12-20-22

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # 2C Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN # IR-13 (CF **-0.2** °C) Observed Cooler Temp. 3.2 °C Corrected Cooler Temp. 3.0 °C
   IR GUN # IR-16 (CF **-0.1**°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
   IR GUN # IR-17 (CF **-0.3**°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____	Yes	No	
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No	NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No	
-Were tamper/custody seals intact and uncompromised?	Yes	No	NA
3. Shippers' packing slip attached to the cooler(s)?	Yes	No	
4. Did custody papers accompany the sample(s)?	Yes	No	
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No	
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No	
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No	
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No	
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?			
10. Were correct bottle(s) used for the test(s) indicated?	Yes	No	
11. Sufficient quantity received to perform indicated analyses?	Yes	No	
12. Are these work share samples and all listed on the COC?	Yes	No	
If yes, Questions 13-17 have been checked at the originating laboratory.			
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No	NA pH Strip Lot# **HC291590**
14. Were VOAs on the COC?	Yes	No	
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes	No	NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes	No	
17. Was a LL Hg or Me Hg trip blank present? _____	Yes	No	

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

_____

_____

_____

_____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Vincent Buening
TRC Environmental Corporation.
1540 Eisenhower Place
Ann Arbor, Michigan 48108-7080

Generated 1/5/2023 7:14:50 PM

JOB DESCRIPTION

CCR DTE Belle River Power - Aquifer

JOB NUMBER

240-178297-1

Eurofins Canton
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization

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Authorized for release by
Kris Brooks, Project Manager II
Kris.Brooks@et.eurofinsus.com
(330)966-9790

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

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

Case Narrative

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Job ID: 240-178297-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-178297-1

Receipt
The samples were received on 12/20/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.0°C

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

General Chemistry
Method 9056A_28D: The following samples were diluted due to the nature of the sample matrix: MW-16-08 (240-178297-8), MW-16-11A (240-178297-11) and (240-178344-J-1). Elevated reporting limits (RLs) are provided.

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

Method Summary

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	EET CAN
6020	Metals (ICP/MS)	SW846	EET CAN
2320B-1997	Alkalinity, Total	SM	EET CAN
9056A	Anions, Ion Chromatography	SW846	EET CAN
9060A	Organic Carbon, Total (TOC)	SW846	EET CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CAN

Protocol References:

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

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

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-178297-1	MW-16-01	Water	12/14/22 10:33	12/20/22 10:00
240-178297-2	MW-16-02	Water	12/14/22 12:13	12/20/22 10:00
240-178297-3	MW-16-03	Water	12/14/22 13:46	12/20/22 10:00
240-178297-4	MW-16-04	Water	12/15/22 13:34	12/20/22 10:00
240-178297-5	MW-16-05	Water	12/15/22 09:24	12/20/22 10:00
240-178297-6	MW-16-06	Water	12/15/22 10:55	12/20/22 10:00
240-178297-7	MW-16-07	Water	12/15/22 12:28	12/20/22 10:00
240-178297-8	MW-16-08	Water	12/16/22 12:33	12/20/22 10:00
240-178297-9	MW-16-09	Water	12/16/22 13:34	12/20/22 10:00
240-178297-10	MW-16-10	Water	12/16/22 09:20	12/20/22 10:00
240-178297-11	MW-16-11A	Water	12/16/22 11:05	12/20/22 10:00

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-01 Lab Sample ID: 240-178297-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100	57	ug/L	1		6010B	Total Recoverable
Barium	220	F1	5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	42000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	14000		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	2700		1000	1000	ug/L	1		6020	Total Recoverable
Molybdenum	71		5.0	5.0	ug/L	1		6020	Total Recoverable
Strontium	1200		10	10	ug/L	1		6020	Total Recoverable
Sodium	300000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	15		8.0	8.0	ug/L	1		6020	Total Recoverable
Alkalinity	170		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	170		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Chloride	450		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.8		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	9.0		1.0	1.0	mg/L	1		9056A	Total/NA
Total Organic Carbon	0.79	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 1	0.77	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 2	0.79	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	0.79	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	0.80	J	1.0	0.35	mg/L	1		9060A	Total/NA

Client Sample ID: MW-16-02 Lab Sample ID: 240-178297-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100	57	ug/L	1		6010B	Total Recoverable
Barium	250		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	54000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	16000		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	3400		1000	1000	ug/L	1		6020	Total Recoverable
Molybdenum	25		5.0	5.0	ug/L	1		6020	Total Recoverable
Strontium	1500		10	10	ug/L	1		6020	Total Recoverable
Sodium	190000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	15		8.0	8.0	ug/L	1		6020	Total Recoverable
Alkalinity	150		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	150		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Chloride	350		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.2		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	9.1		1.0	1.0	mg/L	1		9056A	Total/NA
Total Organic Carbon	0.72	J	1.0	0.35	mg/L	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample ID: MW-16-02 (Continued) — Lab Sample ID: 240-178297-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
TOC Result 1	0.71	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 2	0.71	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	0.71	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	0.74	J	1.0	0.35	mg/L	1		9060A	Total/NA

Client Sample ID: MW-16-03 — Lab Sample ID: 240-178297-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	990		100	57	ug/L	1		6010B	Total Recoverable
Barium	320		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	34000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	11000		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	2800		1000	1000	ug/L	1		6020	Total Recoverable
Molybdenum	87		5.0	5.0	ug/L	1		6020	Total Recoverable
Strontium	960		10	10	ug/L	1		6020	Total Recoverable
Sodium	350000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	20		8.0	8.0	ug/L	1		6020	Total Recoverable
Alkalinity	160		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	160		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Chloride	550		10	10	mg/L	10		9056A	Total/NA
Fluoride	1.8		0.050	0.050	mg/L	1		9056A	Total/NA
Total Organic Carbon	0.73	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 1	0.73	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 2	0.74	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	0.73	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	0.72	J	1.0	0.35	mg/L	1		9060A	Total/NA

Client Sample ID: MW-16-04 — Lab Sample ID: 240-178297-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100	57	ug/L	1		6010B	Total Recoverable
Barium	290		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	46000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	15000		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	3000		1000	1000	ug/L	1		6020	Total Recoverable
Molybdenum	68		5.0	5.0	ug/L	1		6020	Total Recoverable
Strontium	1200		10	10	ug/L	1		6020	Total Recoverable
Sodium	300000		1000	1000	ug/L	1		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-16-04 (Continued) — Lab Sample ID: 240-178297-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	19		8.0	8.0	ug/L	1		6020	Total Recoverable
Alkalinity	160		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	160		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Chloride	470		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.8		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	16		1.0	1.0	mg/L	1		9056A	Total/NA
Total Organic Carbon	0.75	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 1	0.74	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 2	0.74	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	0.77	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	0.76	J	1.0	0.35	mg/L	1		9060A	Total/NA

Client Sample ID: MW-16-05 — Lab Sample ID: 240-178297-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1600		100	57	ug/L	1		6010B	Total Recoverable
Barium	240		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	33000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	11000		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	4100		1000	1000	ug/L	1		6020	Total Recoverable
Molybdenum	11		5.0	5.0	ug/L	1		6020	Total Recoverable
Strontium	810		10	10	ug/L	1		6020	Total Recoverable
Sodium	870000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	47		8.0	8.0	ug/L	1		6020	Total Recoverable
Alkalinity	190		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	190		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Chloride	1400		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.2		0.10	0.10	mg/L	2		9056A	Total/NA
Sulfate	6.1		2.0	2.0	mg/L	2		9056A	Total/NA
Total Organic Carbon	1.8		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 1	1.8		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 2	1.8		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	1.8		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	1.8		1.0	0.35	mg/L	1		9060A	Total/NA

Client Sample ID: MW-16-06 — Lab Sample ID: 240-178297-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1800		100	57	ug/L	1		6010B	Total Recoverable
Barium	250		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	38000		1000	1000	ug/L	1		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-16-06 (Continued) — Lab Sample ID: 240-178297-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	12000		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	4300		1000	1000	ug/L	1		6020	Total Recoverable
Molybdenum	14		5.0	5.0	ug/L	1		6020	Total Recoverable
Strontium	1000		10	10	ug/L	1		6020	Total Recoverable
Sodium	960000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	45		8.0	8.0	ug/L	1		6020	Total Recoverable
Alkalinity	180		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	180		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Chloride	1600		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.2		0.10	0.10	mg/L	2		9056A	Total/NA
Sulfate	4.4		2.0	2.0	mg/L	2		9056A	Total/NA
Total Organic Carbon	0.68	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 1	0.68	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 2	0.67	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	0.68	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	0.68	J	1.0	0.35	mg/L	1		9060A	Total/NA

Client Sample ID: MW-16-07 — Lab Sample ID: 240-178297-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1800		100	57	ug/L	1		6010B	Total Recoverable
Barium	220		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	35000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	11000		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	4700		1000	1000	ug/L	1		6020	Total Recoverable
Molybdenum	7.4		5.0	5.0	ug/L	1		6020	Total Recoverable
Strontium	1200		10	10	ug/L	1		6020	Total Recoverable
Sodium	1100000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	53		8.0	8.0	ug/L	1		6020	Total Recoverable
Alkalinity	230		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	230		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Chloride	1700		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.2		0.10	0.10	mg/L	2		9056A	Total/NA
Sulfate	30		2.0	2.0	mg/L	2		9056A	Total/NA
Total Organic Carbon	5.0		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 1	5.0		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 2	5.0		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	4.9		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	5.0		1.0	0.35	mg/L	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-08 Lab Sample ID: 240-178297-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1800		100	57	ug/L	1		6010B	Total Recoverable
Barium	300		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	40000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	13000		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	4700		1000	1000	ug/L	1		6020	Total Recoverable
Molybdenum	16		5.0	5.0	ug/L	1		6020	Total Recoverable
Strontium	1200		10	10	ug/L	1		6020	Total Recoverable
Sodium	1100000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	57		8.0	8.0	ug/L	1		6020	Total Recoverable
Alkalinity	170		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	170		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Chloride	1800		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.2		0.10	0.10	mg/L	2		9056A	Total/NA
Total Organic Carbon	0.62	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 1	0.61	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 2	0.64	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	0.62	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	0.62	J	1.0	0.35	mg/L	1		9060A	Total/NA

Client Sample ID: MW-16-09 Lab Sample ID: 240-178297-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1400		100	57	ug/L	1		6010B	Total Recoverable
Barium	220		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	31000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	9600		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	2700		1000	1000	ug/L	1		6020	Total Recoverable
Molybdenum	35		5.0	5.0	ug/L	1		6020	Total Recoverable
Strontium	840		10	10	ug/L	1		6020	Total Recoverable
Sodium	580000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	25		8.0	8.0	ug/L	1		6020	Total Recoverable
Alkalinity	200		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	200		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Chloride	930		10	10	mg/L	10		9056A	Total/NA
Fluoride	1.5		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	13		1.0	1.0	mg/L	1		9056A	Total/NA
Total Organic Carbon	2.5		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 1	2.5		1.0	0.35	mg/L	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample ID: MW-16-09 (Continued)

Lab Sample ID: 240-178297-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
TOC Result 2	2.5		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	2.5		1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	2.5		1.0	0.35	mg/L	1		9060A	Total/NA

Client Sample ID: MW-16-10

Lab Sample ID: 240-178297-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1900		100	57	ug/L	1		6010B	Total Recoverable
Barium	67		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	26000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	9000		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	4600		1000	1000	ug/L	1		6020	Total Recoverable
Molybdenum	11		5.0	5.0	ug/L	1		6020	Total Recoverable
Strontium	540		10	10	ug/L	1		6020	Total Recoverable
Sodium	980000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	67		8.0	8.0	ug/L	1		6020	Total Recoverable
Alkalinity	210		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	210		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Chloride	1500		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.2		0.10	0.10	mg/L	2		9056A	Total/NA
Sulfate	60		2.0	2.0	mg/L	2		9056A	Total/NA
Total Organic Carbon	0.53	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 1	0.52	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 2	0.53	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	0.54	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	0.54	J	1.0	0.35	mg/L	1		9060A	Total/NA

Client Sample ID: MW-16-11A

Lab Sample ID: 240-178297-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1800		100	57	ug/L	1		6010B	Total Recoverable
Barium	270		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	38000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	12000		1000	1000	ug/L	1		6020	Total Recoverable
Potassium	4800		1000	1000	ug/L	1		6020	Total Recoverable
Molybdenum	12		5.0	5.0	ug/L	1		6020	Total Recoverable
Strontium	1000		10	10	ug/L	1		6020	Total Recoverable
Sodium	1000000		1000	1000	ug/L	1		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-11A (Continued) Lab Sample ID: 240-178297-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	57		8.0	8.0	ug/L	1		6020	Total Recoverable
Alkalinity	170		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Bicarbonate Alkalinity as CaCO3	170		5.0	2.6	mg/L	1		2320B-1997	Total/NA
Chloride	1700		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.1		0.10	0.10	mg/L	2		9056A	Total/NA
Total Organic Carbon	0.49	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 1	0.51	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 2	0.49	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 3	0.49	J	1.0	0.35	mg/L	1		9060A	Total/NA
TOC Result 4	0.49	J	1.0	0.35	mg/L	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power - Aquifer

Job ID: 240-178297-1

Client Sample ID: MW-16-01

Date Collected: 12/14/22 10:33
Date Received: 12/20/22 10:00

Lab Sample ID: 240-178297-1

Matrix: Water

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100	57	ug/L		12/21/22 12:00	12/23/22 03:28	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	220	F1	5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:09	1
Calcium	42000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:09	1
Magnesium	14000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:09	1
Potassium	2700		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:09	1
Molybdenum	71		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:09	1
Strontium	1200		10	10	ug/L		12/21/22 12:00	12/22/22 16:09	1
Sodium	300000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:09	1
Lithium	15		8.0	8.0	ug/L		12/21/22 12:00	12/22/22 16:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	170		5.0	2.6	mg/L			12/21/22 21:26	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	170		5.0	2.6	mg/L			12/21/22 21:26	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	5.0	U	5.0	2.6	mg/L			12/21/22 21:26	1
Chloride (SW846 9056A)	450		5.0	5.0	mg/L			01/03/23 16:27	5
Fluoride (SW846 9056A)	1.8		0.050	0.050	mg/L			01/03/23 16:05	1
Sulfate (SW846 9056A)	9.0		1.0	1.0	mg/L			01/03/23 16:05	1
Total Organic Carbon (SW846 9060A)	0.79	J	1.0	0.35	mg/L			12/29/22 14:35	1
TOC Result 1 (SW846 9060A)	0.77	J	1.0	0.35	mg/L			12/29/22 14:35	1
TOC Result 2 (SW846 9060A)	0.79	J	1.0	0.35	mg/L			12/29/22 14:35	1
TOC Result 3 (SW846 9060A)	0.79	J	1.0	0.35	mg/L			12/29/22 14:35	1
TOC Result 4 (SW846 9060A)	0.80	J	1.0	0.35	mg/L			12/29/22 14:35	1

Client: TRC Environmental Corporation.
Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-02
Lab Sample ID: 240-178297-2
Date Collected: 12/14/22 12:13
Matrix: Water
Date Received: 12/20/22 10:00

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100	57	ug/L		12/21/22 12:00	12/23/22 03:44	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	250		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:21	1
Calcium	54000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:21	1
Magnesium	16000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:21	1
Potassium	3400		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:21	1
Molybdenum	25		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:21	1
Strontium	1500		10	10	ug/L		12/21/22 12:00	12/22/22 16:21	1
Sodium	190000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:21	1
Lithium	15		8.0	8.0	ug/L		12/21/22 12:00	12/22/22 16:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	150		5.0	2.6	mg/L			12/21/22 21:30	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	150		5.0	2.6	mg/L			12/21/22 21:30	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	5.0	U	5.0	2.6	mg/L			12/21/22 21:30	1
Chloride (SW846 9056A)	350		5.0	5.0	mg/L			01/03/23 17:53	5
Fluoride (SW846 9056A)	1.2		0.050	0.050	mg/L			01/03/23 16:48	1
Sulfate (SW846 9056A)	9.1		1.0	1.0	mg/L			01/03/23 16:48	1
Total Organic Carbon (SW846 9060A)	0.72	J	1.0	0.35	mg/L			12/29/22 15:10	1
TOC Result 1 (SW846 9060A)	0.71	J	1.0	0.35	mg/L			12/29/22 15:10	1
TOC Result 2 (SW846 9060A)	0.71	J	1.0	0.35	mg/L			12/29/22 15:10	1
TOC Result 3 (SW846 9060A)	0.71	J	1.0	0.35	mg/L			12/29/22 15:10	1
TOC Result 4 (SW846 9060A)	0.74	J	1.0	0.35	mg/L			12/29/22 15:10	1

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-03 — Lab Sample ID: 240-178297-3

Date Collected: 12/14/22 13:46 — **Matrix: Water**
Date Received: 12/20/22 10:00

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	990		100	57	ug/L		12/21/22 12:00	12/23/22 03:49	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	320		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:24	1
Calcium	34000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:24	1
Magnesium	11000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:24	1
Potassium	2800		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:24	1
Molybdenum	87		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:24	1
Strontium	960		10	10	ug/L		12/21/22 12:00	12/22/22 16:24	1
Sodium	350000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:24	1
Lithium	20		8.0	8.0	ug/L		12/21/22 12:00	12/22/22 16:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	160		5.0	2.6	mg/L			12/21/22 21:35	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	160		5.0	2.6	mg/L			12/21/22 21:35	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	5.0	U	5.0	2.6	mg/L			12/21/22 21:35	1
Chloride (SW846 9056A)	550		10	10	mg/L			01/03/23 18:37	10
Fluoride (SW846 9056A)	1.8		0.050	0.050	mg/L			01/03/23 18:15	1
Sulfate (SW846 9056A)	1.0	U	1.0	1.0	mg/L			01/03/23 18:15	1
Total Organic Carbon (SW846 9060A)	0.73	J	1.0	0.35	mg/L			12/29/22 15:45	1
TOC Result 1 (SW846 9060A)	0.73	J	1.0	0.35	mg/L			12/29/22 15:45	1
TOC Result 2 (SW846 9060A)	0.74	J	1.0	0.35	mg/L			12/29/22 15:45	1
TOC Result 3 (SW846 9060A)	0.73	J	1.0	0.35	mg/L			12/29/22 15:45	1
TOC Result 4 (SW846 9060A)	0.72	J	1.0	0.35	mg/L			12/29/22 15:45	1

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-04 — Lab Sample ID: 240-178297-4

Date Collected: 12/15/22 13:34 — **Matrix: Water**
Date Received: 12/20/22 10:00

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100	57	ug/L		12/21/22 12:00	12/23/22 03:53	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	290		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:26	1
Calcium	46000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:26	1
Magnesium	15000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:26	1
Potassium	3000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:26	1
Molybdenum	68		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:26	1
Strontium	1200		10	10	ug/L		12/21/22 12:00	12/22/22 16:26	1
Sodium	300000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:26	1
Lithium	19		8.0	8.0	ug/L		12/21/22 12:00	12/22/22 16:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	160		5.0	2.6	mg/L			12/21/22 21:39	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	160		5.0	2.6	mg/L			12/21/22 21:39	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	5.0	U	5.0	2.6	mg/L			12/21/22 21:39	1
Chloride (SW846 9056A)	470		5.0	5.0	mg/L			01/03/23 19:20	5
Fluoride (SW846 9056A)	1.8		0.050	0.050	mg/L			01/03/23 18:59	1
Sulfate (SW846 9056A)	16		1.0	1.0	mg/L			01/03/23 18:59	1
Total Organic Carbon (SW846 9060A)	0.75	J	1.0	0.35	mg/L			12/29/22 16:20	1
TOC Result 1 (SW846 9060A)	0.74	J	1.0	0.35	mg/L			12/29/22 16:20	1
TOC Result 2 (SW846 9060A)	0.74	J	1.0	0.35	mg/L			12/29/22 16:20	1
TOC Result 3 (SW846 9060A)	0.77	J	1.0	0.35	mg/L			12/29/22 16:20	1
TOC Result 4 (SW846 9060A)	0.76	J	1.0	0.35	mg/L			12/29/22 16:20	1

Client: TRC Environmental Corporation.
Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-05
Lab Sample ID: 240-178297-5

Date Collected: 12/15/22 09:24
Matrix: Water
Date Received: 12/20/22 10:00

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1600		100	57	ug/L		12/21/22 12:00	12/23/22 04:06	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	240		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:34	1
Calcium	33000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:34	1
Magnesium	11000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:34	1
Potassium	4100		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:34	1
Molybdenum	11		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:34	1
Strontium	810		10	10	ug/L		12/21/22 12:00	12/22/22 16:34	1
Sodium	870000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:34	1
Lithium	47		8.0	8.0	ug/L		12/21/22 12:00	12/22/22 16:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	190		5.0	2.6	mg/L			12/21/22 21:43	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	190		5.0	2.6	mg/L			12/21/22 21:43	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	5.0	U	5.0	2.6	mg/L			12/21/22 21:43	1
Chloride (SW846 9056A)	1400		20	20	mg/L			01/03/23 20:04	20
Fluoride (SW846 9056A)	1.2		0.10	0.10	mg/L			01/03/23 19:42	2
Sulfate (SW846 9056A)	6.1		2.0	2.0	mg/L			01/03/23 19:42	2
Total Organic Carbon (SW846 9060A)	1.8		1.0	0.35	mg/L			12/29/22 16:56	1
TOC Result 1 (SW846 9060A)	1.8		1.0	0.35	mg/L			12/29/22 16:56	1
TOC Result 2 (SW846 9060A)	1.8		1.0	0.35	mg/L			12/29/22 16:56	1
TOC Result 3 (SW846 9060A)	1.8		1.0	0.35	mg/L			12/29/22 16:56	1
TOC Result 4 (SW846 9060A)	1.8		1.0	0.35	mg/L			12/29/22 16:56	1

Client: TRC Environmental Corporation.
Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-06
Lab Sample ID: 240-178297-6

Date Collected: 12/15/22 10:55
Matrix: Water
Date Received: 12/20/22 10:00

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1800		100	57	ug/L		12/21/22 12:00	12/23/22 04:10	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	250		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:36	1
Calcium	38000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:36	1
Magnesium	12000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:36	1
Potassium	4300		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:36	1
Molybdenum	14		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:36	1
Strontium	1000		10	10	ug/L		12/21/22 12:00	12/22/22 16:36	1
Sodium	960000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:36	1
Lithium	45		8.0	8.0	ug/L		12/21/22 12:00	12/22/22 16:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	180		5.0	2.6	mg/L			12/21/22 21:47	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	180		5.0	2.6	mg/L			12/21/22 21:47	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	5.0	U	5.0	2.6	mg/L			12/21/22 21:47	1
Chloride (SW846 9056A)	1600		20	20	mg/L			01/03/23 20:47	20
Fluoride (SW846 9056A)	1.2		0.10	0.10	mg/L			01/03/23 20:25	2
Sulfate (SW846 9056A)	4.4		2.0	2.0	mg/L			01/03/23 20:25	2
Total Organic Carbon (SW846 9060A)	0.68	J	1.0	0.35	mg/L			12/29/22 17:32	1
TOC Result 1 (SW846 9060A)	0.68	J	1.0	0.35	mg/L			12/29/22 17:32	1
TOC Result 2 (SW846 9060A)	0.67	J	1.0	0.35	mg/L			12/29/22 17:32	1
TOC Result 3 (SW846 9060A)	0.68	J	1.0	0.35	mg/L			12/29/22 17:32	1
TOC Result 4 (SW846 9060A)	0.68	J	1.0	0.35	mg/L			12/29/22 17:32	1

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-07 — Lab Sample ID: 240-178297-7

Date Collected: 12/15/22 12:28 — **Matrix: Water**
Date Received: 12/20/22 10:00

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1800		100	57	ug/L		12/21/22 12:00	12/23/22 04:14	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	220		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:39	1
Calcium	35000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:39	1
Magnesium	11000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:39	1
Potassium	4700		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:39	1
Molybdenum	7.4		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:39	1
Strontium	1200		10	10	ug/L		12/21/22 12:00	12/22/22 16:39	1
Sodium	1100000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:39	1
Lithium	53		8.0	8.0	ug/L		12/21/22 12:00	12/22/22 16:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	230		5.0	2.6	mg/L			12/21/22 21:52	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	230		5.0	2.6	mg/L			12/21/22 21:52	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	5.0	U	5.0	2.6	mg/L			12/21/22 21:52	1
Chloride (SW846 9056A)	1700		20	20	mg/L			01/03/23 22:14	20
Fluoride (SW846 9056A)	1.2		0.10	0.10	mg/L			01/03/23 21:09	2
Sulfate (SW846 9056A)	30		2.0	2.0	mg/L			01/03/23 21:09	2
Total Organic Carbon (SW846 9060A)	5.0		1.0	0.35	mg/L			12/29/22 18:08	1
TOC Result 1 (SW846 9060A)	5.0		1.0	0.35	mg/L			12/29/22 18:08	1
TOC Result 2 (SW846 9060A)	5.0		1.0	0.35	mg/L			12/29/22 18:08	1
TOC Result 3 (SW846 9060A)	4.9		1.0	0.35	mg/L			12/29/22 18:08	1
TOC Result 4 (SW846 9060A)	5.0		1.0	0.35	mg/L			12/29/22 18:08	1

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-08 — Lab Sample ID: 240-178297-8

Date Collected: 12/16/22 12:33 — **Matrix: Water**
Date Received: 12/20/22 10:00

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1800		100	57	ug/L		12/21/22 12:00	12/23/22 04:19	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	300		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:41	1
Calcium	40000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:41	1
Magnesium	13000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:41	1
Potassium	4700		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:41	1
Molybdenum	16		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:41	1
Strontium	1200		10	10	ug/L		12/21/22 12:00	12/22/22 16:41	1
Sodium	1100000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:41	1
Lithium	57		8.0	8.0	ug/L		12/21/22 12:00	12/22/22 16:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	170		5.0	2.6	mg/L			12/21/22 21:58	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	170		5.0	2.6	mg/L			12/21/22 21:58	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	5.0	U	5.0	2.6	mg/L			12/21/22 21:58	1
Chloride (SW846 9056A)	1800		20	20	mg/L			01/03/23 22:57	20
Fluoride (SW846 9056A)	1.2		0.10	0.10	mg/L			01/03/23 22:35	2
Sulfate (SW846 9056A)	2.0	U	2.0	2.0	mg/L			01/03/23 22:35	2
Total Organic Carbon (SW846 9060A)	0.62	J	1.0	0.35	mg/L			12/29/22 18:45	1
TOC Result 1 (SW846 9060A)	0.61	J	1.0	0.35	mg/L			12/29/22 18:45	1
TOC Result 2 (SW846 9060A)	0.64	J	1.0	0.35	mg/L			12/29/22 18:45	1
TOC Result 3 (SW846 9060A)	0.62	J	1.0	0.35	mg/L			12/29/22 18:45	1
TOC Result 4 (SW846 9060A)	0.62	J	1.0	0.35	mg/L			12/29/22 18:45	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-09 Lab Sample ID: 240-178297-9

Date Collected: 12/16/22 13:34 **Matrix: Water**
Date Received: 12/20/22 10:00

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1400		100	57	ug/L		12/21/22 12:00	12/23/22 04:23	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	220		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:44	1
Calcium	31000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:44	1
Magnesium	9600		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:44	1
Potassium	2700		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:44	1
Molybdenum	35		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:44	1
Strontium	840		10	10	ug/L		12/21/22 12:00	12/22/22 16:44	1
Sodium	580000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:44	1
Lithium	25		8.0	8.0	ug/L		12/21/22 12:00	12/22/22 16:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	200		5.0	2.6	mg/L			12/21/22 22:07	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	200		5.0	2.6	mg/L			12/21/22 22:07	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	5.0	U	5.0	2.6	mg/L			12/21/22 22:07	1
Chloride (SW846 9056A)	930		10	10	mg/L			01/03/23 23:40	10
Fluoride (SW846 9056A)	1.5		0.050	0.050	mg/L			01/03/23 23:19	1
Sulfate (SW846 9056A)	13		1.0	1.0	mg/L			01/03/23 23:19	1
Total Organic Carbon (SW846 9060A)	2.5		1.0	0.35	mg/L			12/29/22 19:39	1
TOC Result 1 (SW846 9060A)	2.5		1.0	0.35	mg/L			12/29/22 19:39	1
TOC Result 2 (SW846 9060A)	2.5		1.0	0.35	mg/L			12/29/22 19:39	1
TOC Result 3 (SW846 9060A)	2.5		1.0	0.35	mg/L			12/29/22 19:39	1
TOC Result 4 (SW846 9060A)	2.5		1.0	0.35	mg/L			12/29/22 19:39	1

Client: TRC Environmental Corporation.
Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-10
Lab Sample ID: 240-178297-10

Date Collected: 12/16/22 09:20
Matrix: Water
Date Received: 12/20/22 10:00

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1900		100	57	ug/L		12/21/22 12:00	12/23/22 04:28	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	67		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:46	1
Calcium	26000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:46	1
Magnesium	9000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:46	1
Potassium	4600		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:46	1
Molybdenum	11		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:46	1
Strontium	540		10	10	ug/L		12/21/22 12:00	12/22/22 16:46	1
Sodium	980000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:46	1
Lithium	67		8.0	8.0	ug/L		12/21/22 12:00	12/22/22 16:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	210		5.0	2.6	mg/L			12/21/22 22:11	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	210		5.0	2.6	mg/L			12/21/22 22:11	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	5.0	U	5.0	2.6	mg/L			12/21/22 22:11	1
Chloride (SW846 9056A)	1500		20	20	mg/L			01/04/23 00:24	20
Fluoride (SW846 9056A)	1.2		0.10	0.10	mg/L			01/04/23 00:02	2
Sulfate (SW846 9056A)	60		2.0	2.0	mg/L			01/04/23 00:02	2
Total Organic Carbon (SW846 9060A)	0.53	J	1.0	0.35	mg/L			12/29/22 20:14	1
TOC Result 1 (SW846 9060A)	0.52	J	1.0	0.35	mg/L			12/29/22 20:14	1
TOC Result 2 (SW846 9060A)	0.53	J	1.0	0.35	mg/L			12/29/22 20:14	1
TOC Result 3 (SW846 9060A)	0.54	J	1.0	0.35	mg/L			12/29/22 20:14	1
TOC Result 4 (SW846 9060A)	0.54	J	1.0	0.35	mg/L			12/29/22 20:14	1

Client: TRC Environmental Corporation.
Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-11A
Lab Sample ID: 240-178297-11
Date Collected: 12/16/22 11:05
Matrix: Water
Date Received: 12/20/22 10:00

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1800		100	57	ug/L		12/21/22 12:00	12/23/22 04:32	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	270		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:49	1
Calcium	38000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:49	1
Magnesium	12000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:49	1
Potassium	4800		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:49	1
Molybdenum	12		5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:49	1
Strontium	1000		10	10	ug/L		12/21/22 12:00	12/22/22 16:49	1
Sodium	1000000		1000	1000	ug/L		12/21/22 12:00	12/22/22 16:49	1
Lithium	57		8.0	8.0	ug/L		12/21/22 12:00	12/22/22 16:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-1997)	170		5.0	2.6	mg/L			12/21/22 22:16	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B-1997)	170		5.0	2.6	mg/L			12/21/22 22:16	1
Carbonate Alkalinity as CaCO3 (SM 2320B-1997)	5.0	U	5.0	2.6	mg/L			12/21/22 22:16	1
Chloride (SW846 9056A)	1700		20	20	mg/L			01/04/23 01:07	20
Fluoride (SW846 9056A)	1.1		0.10	0.10	mg/L			01/04/23 00:46	2
Sulfate (SW846 9056A)	2.0	U	2.0	2.0	mg/L			01/04/23 00:46	2
Total Organic Carbon (SW846 9060A)	0.49	J	1.0	0.35	mg/L			12/29/22 20:49	1
TOC Result 1 (SW846 9060A)	0.51	J	1.0	0.35	mg/L			12/29/22 20:49	1
TOC Result 2 (SW846 9060A)	0.49	J	1.0	0.35	mg/L			12/29/22 20:49	1
TOC Result 3 (SW846 9060A)	0.49	J	1.0	0.35	mg/L			12/29/22 20:49	1
TOC Result 4 (SW846 9060A)	0.49	J	1.0	0.35	mg/L			12/29/22 20:49	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-556847/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 557096 — **Prep Batch: 556847**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	57	ug/L		12/21/22 12:00	12/23/22 03:19	1

Lab Sample ID: LCS 240-556847/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 557096 — **Prep Batch: 556847**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1000	979		ug/L		98	80 - 120

Lab Sample ID: 240-178297-1 MS — **Client Sample ID: MW-16-01**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 557096 — **Prep Batch: 556847**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1000		1000	2030		ug/L		100	75 - 125

Lab Sample ID: 240-178297-1 MSD — **Client Sample ID: MW-16-01**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 557096 — **Prep Batch: 556847**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	1000		1000	1970		ug/L		94	75 - 125	3	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-556847/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 557119 — **Prep Batch: 556847**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	5.0	U	5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:05	1
Calcium	1000	U	1000	1000	ug/L		12/21/22 12:00	12/22/22 16:05	1
Magnesium	1000	U	1000	1000	ug/L		12/21/22 12:00	12/22/22 16:05	1
Potassium	1000	U	1000	1000	ug/L		12/21/22 12:00	12/22/22 16:05	1
Molybdenum	5.0	U	5.0	5.0	ug/L		12/21/22 12:00	12/22/22 16:05	1
Strontium	10	U	10	10	ug/L		12/21/22 12:00	12/22/22 16:05	1
Sodium	1000	U	1000	1000	ug/L		12/21/22 12:00	12/22/22 16:05	1
Lithium	8.0	U	8.0	8.0	ug/L		12/21/22 12:00	12/22/22 16:05	1

Lab Sample ID: LCS 240-556847/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 557119 — **Prep Batch: 556847**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	1000	1010		ug/L		101	80 - 120
Calcium	25000	24200		ug/L		97	80 - 120
Magnesium	25000	23700		ug/L		95	80 - 120
Potassium	25000	24300		ug/L		97	80 - 120
Molybdenum	500	458		ug/L		92	80 - 120
Strontium	500	470		ug/L		94	80 - 120

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

Lab Sample ID: LCS 240-556847/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 557119 — **Prep Batch: 556847**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	25000	23900		ug/L		95	80 - 120
Lithium	500	482		ug/L		96	80 - 120

Lab Sample ID: 240-178297-1 MS — **Client Sample ID: MW-16-01**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 557119 — **Prep Batch: 556847**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	220	F1	1000	1560	F1	ug/L		134	75 - 125
Calcium	42000		25000	63200		ug/L		84	75 - 125
Magnesium	14000		25000	37500		ug/L		94	75 - 125
Potassium	2700		25000	26800		ug/L		96	75 - 125
Molybdenum	71		500	582		ug/L		102	75 - 125
Strontium	1200		500	1620		ug/L		86	75 - 125
Sodium	300000		25000	315000	4	ug/L		48	75 - 125
Lithium	15		500	514		ug/L		100	75 - 125

Lab Sample ID: 240-178297-1 MSD — **Client Sample ID: MW-16-01**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 557119 — **Prep Batch: 556847**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Barium	220	F1	1000	1550	F1	ug/L		133	75 - 125	0	20
Calcium	42000		25000	62900		ug/L		83	75 - 125	0	20
Magnesium	14000		25000	36700		ug/L		91	75 - 125	2	20
Potassium	2700		25000	26500		ug/L		95	75 - 125	1	20
Molybdenum	71		500	569		ug/L		100	75 - 125	2	20
Strontium	1200		500	1620		ug/L		85	75 - 125	0	20
Sodium	300000		25000	313000	4	ug/L		40	75 - 125	1	20
Lithium	15		500	502		ug/L		97	75 - 125	2	20

Method: 2320B-1997 - Alkalinity, Total

Lab Sample ID: MB 240-557050/30 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557050

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0	2.6	mg/L			12/21/22 20:50	1
Bicarbonate Alkalinity as CaCO3	5.0	U	5.0	2.6	mg/L			12/21/22 20:50	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	2.6	mg/L			12/21/22 20:50	1

Lab Sample ID: MB 240-557050/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557050

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0	2.6	mg/L			12/21/22 18:59	1
Bicarbonate Alkalinity as CaCO3	5.0	U	5.0	2.6	mg/L			12/21/22 18:59	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	2.6	mg/L			12/21/22 18:59	1

Method: 2320B-1997 - Alkalinity, Total

Lab Sample ID: LCS 240-557050/29 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557050

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	146	140		mg/L		96	86 - 123

Lab Sample ID: 240-178297-8 DU — **Client Sample ID: MW-16-08**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557050

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	170		165		mg/L		2	20
Bicarbonate Alkalinity as CaCO3	170		165		mg/L		2	20
Carbonate Alkalinity as CaCO3	5.0	U	5.0	U	mg/L		NC	20

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-557809/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557809

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			01/03/23 13:33	1
Fluoride	0.050	U	0.050	0.050	mg/L			01/03/23 13:33	1
Sulfate	1.0	U	1.0	1.0	mg/L			01/03/23 13:33	1

Lab Sample ID: LCS 240-557809/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557809

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.2		mg/L		98	90 - 110
Fluoride	2.50	2.61		mg/L		104	90 - 110
Sulfate	50.0	50.6		mg/L		101	90 - 110

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 240-557788/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557788

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0	0.35	mg/L			12/29/22 14:16	1
TOC Result 1	1.0	U	1.0	0.35	mg/L			12/29/22 14:16	1

Lab Sample ID: LCS 240-557788/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 557788

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	18.3	18.0		mg/L		98	85 - 115
TOC Result 1	18.3	18.0		mg/L		98	85 - 115

Metals

Prep Batch: 556847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-178297-1	MW-16-01	Total Recoverable	Water	3005A	
240-178297-2	MW-16-02	Total Recoverable	Water	3005A	
240-178297-3	MW-16-03	Total Recoverable	Water	3005A	
240-178297-4	MW-16-04	Total Recoverable	Water	3005A	
240-178297-5	MW-16-05	Total Recoverable	Water	3005A	
240-178297-6	MW-16-06	Total Recoverable	Water	3005A	
240-178297-7	MW-16-07	Total Recoverable	Water	3005A	
240-178297-8	MW-16-08	Total Recoverable	Water	3005A	
240-178297-9	MW-16-09	Total Recoverable	Water	3005A	
240-178297-10	MW-16-10	Total Recoverable	Water	3005A	
240-178297-11	MW-16-11A	Total Recoverable	Water	3005A	
MB 240-556847/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-556847/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-556847/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-178297-1 MS	MW-16-01	Total Recoverable	Water	3005A	
240-178297-1 MS	MW-16-01	Total Recoverable	Water	3005A	
240-178297-1 MSD	MW-16-01	Total Recoverable	Water	3005A	
240-178297-1 MSD	MW-16-01	Total Recoverable	Water	3005A	

Analysis Batch: 557096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-178297-1	MW-16-01	Total Recoverable	Water	6010B	556847
240-178297-2	MW-16-02	Total Recoverable	Water	6010B	556847
240-178297-3	MW-16-03	Total Recoverable	Water	6010B	556847
240-178297-4	MW-16-04	Total Recoverable	Water	6010B	556847
240-178297-5	MW-16-05	Total Recoverable	Water	6010B	556847
240-178297-6	MW-16-06	Total Recoverable	Water	6010B	556847
240-178297-7	MW-16-07	Total Recoverable	Water	6010B	556847
240-178297-8	MW-16-08	Total Recoverable	Water	6010B	556847
240-178297-9	MW-16-09	Total Recoverable	Water	6010B	556847
240-178297-10	MW-16-10	Total Recoverable	Water	6010B	556847
240-178297-11	MW-16-11A	Total Recoverable	Water	6010B	556847
MB 240-556847/1-A	Method Blank	Total Recoverable	Water	6010B	556847
LCS 240-556847/2-A	Lab Control Sample	Total Recoverable	Water	6010B	556847
240-178297-1 MS	MW-16-01	Total Recoverable	Water	6010B	556847
240-178297-1 MSD	MW-16-01	Total Recoverable	Water	6010B	556847

Analysis Batch: 557119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-178297-1	MW-16-01	Total Recoverable	Water	6020	556847
240-178297-2	MW-16-02	Total Recoverable	Water	6020	556847
240-178297-3	MW-16-03	Total Recoverable	Water	6020	556847
240-178297-4	MW-16-04	Total Recoverable	Water	6020	556847
240-178297-5	MW-16-05	Total Recoverable	Water	6020	556847
240-178297-6	MW-16-06	Total Recoverable	Water	6020	556847
240-178297-7	MW-16-07	Total Recoverable	Water	6020	556847
240-178297-8	MW-16-08	Total Recoverable	Water	6020	556847
240-178297-9	MW-16-09	Total Recoverable	Water	6020	556847
240-178297-10	MW-16-10	Total Recoverable	Water	6020	556847
240-178297-11	MW-16-11A	Total Recoverable	Water	6020	556847
MB 240-556847/1-A	Method Blank	Total Recoverable	Water	6020	556847

Metals (Continued)

Analysis Batch: 557119 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-556847/3-A	Lab Control Sample	Total Recoverable	Water	6020	556847
240-178297-1 MS	MW-16-01	Total Recoverable	Water	6020	556847
240-178297-1 MSD	MW-16-01	Total Recoverable	Water	6020	556847

General Chemistry

Analysis Batch: 557050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-178297-1	MW-16-01	Total/NA	Water	2320B-1997	
240-178297-2	MW-16-02	Total/NA	Water	2320B-1997	
240-178297-3	MW-16-03	Total/NA	Water	2320B-1997	
240-178297-4	MW-16-04	Total/NA	Water	2320B-1997	
240-178297-5	MW-16-05	Total/NA	Water	2320B-1997	
240-178297-6	MW-16-06	Total/NA	Water	2320B-1997	
240-178297-7	MW-16-07	Total/NA	Water	2320B-1997	
240-178297-8	MW-16-08	Total/NA	Water	2320B-1997	
240-178297-9	MW-16-09	Total/NA	Water	2320B-1997	
240-178297-10	MW-16-10	Total/NA	Water	2320B-1997	
240-178297-11	MW-16-11A	Total/NA	Water	2320B-1997	
MB 240-557050/30	Method Blank	Total/NA	Water	2320B-1997	
MB 240-557050/4	Method Blank	Total/NA	Water	2320B-1997	
LCS 240-557050/29	Lab Control Sample	Total/NA	Water	2320B-1997	
240-178297-8 DU	MW-16-08	Total/NA	Water	2320B-1997	

Analysis Batch: 557788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-178297-1	MW-16-01	Total/NA	Water	9060A	
240-178297-2	MW-16-02	Total/NA	Water	9060A	
240-178297-3	MW-16-03	Total/NA	Water	9060A	
240-178297-4	MW-16-04	Total/NA	Water	9060A	
240-178297-5	MW-16-05	Total/NA	Water	9060A	
240-178297-6	MW-16-06	Total/NA	Water	9060A	
240-178297-7	MW-16-07	Total/NA	Water	9060A	
240-178297-8	MW-16-08	Total/NA	Water	9060A	
240-178297-9	MW-16-09	Total/NA	Water	9060A	
240-178297-10	MW-16-10	Total/NA	Water	9060A	
240-178297-11	MW-16-11A	Total/NA	Water	9060A	
MB 240-557788/3	Method Blank	Total/NA	Water	9060A	
LCS 240-557788/4	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 557809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-178297-1	MW-16-01	Total/NA	Water	9056A	
240-178297-1	MW-16-01	Total/NA	Water	9056A	
240-178297-2	MW-16-02	Total/NA	Water	9056A	
240-178297-2	MW-16-02	Total/NA	Water	9056A	
240-178297-3	MW-16-03	Total/NA	Water	9056A	
240-178297-3	MW-16-03	Total/NA	Water	9056A	
240-178297-4	MW-16-04	Total/NA	Water	9056A	
240-178297-4	MW-16-04	Total/NA	Water	9056A	
240-178297-5	MW-16-05	Total/NA	Water	9056A	

General Chemistry (Continued)

Analysis Batch: 557809 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-178297-5	MW-16-05	Total/NA	Water	9056A	
240-178297-6	MW-16-06	Total/NA	Water	9056A	
240-178297-6	MW-16-06	Total/NA	Water	9056A	
240-178297-7	MW-16-07	Total/NA	Water	9056A	
240-178297-7	MW-16-07	Total/NA	Water	9056A	
240-178297-8	MW-16-08	Total/NA	Water	9056A	
240-178297-8	MW-16-08	Total/NA	Water	9056A	
240-178297-9	MW-16-09	Total/NA	Water	9056A	
240-178297-9	MW-16-09	Total/NA	Water	9056A	
240-178297-10	MW-16-10	Total/NA	Water	9056A	
240-178297-10	MW-16-10	Total/NA	Water	9056A	
240-178297-11	MW-16-11A	Total/NA	Water	9056A	
240-178297-11	MW-16-11A	Total/NA	Water	9056A	
MB 240-557809/3	Method Blank	Total/NA	Water	9056A	
LCS 240-557809/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-01 — Lab Sample ID: 240-178297-1

Date Collected: 12/14/22 10:33 — **Matrix: Water**
Date Received: 12/20/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6010B		1	557096	RKT	EET CAN	12/23/22 03:28
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6020		1	557119	AJC	EET CAN	12/22/22 16:09
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 21:26
Total/NA	Analysis	9056A		1	557809	JMB	EET CAN	01/03/23 16:05
Total/NA	Analysis	9056A		5	557809	JMB	EET CAN	01/03/23 16:27
Total/NA	Analysis	9060A		1	557788	MMS	EET CAN	12/29/22 14:35

Client Sample ID: MW-16-02 — Lab Sample ID: 240-178297-2

Date Collected: 12/14/22 12:13 — **Matrix: Water**
Date Received: 12/20/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6010B		1	557096	RKT	EET CAN	12/23/22 03:44
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6020		1	557119	AJC	EET CAN	12/22/22 16:21
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 21:30
Total/NA	Analysis	9056A		1	557809	JMB	EET CAN	01/03/23 16:48
Total/NA	Analysis	9056A		5	557809	JMB	EET CAN	01/03/23 17:53
Total/NA	Analysis	9060A		1	557788	MMS	EET CAN	12/29/22 15:10

Client Sample ID: MW-16-03 — Lab Sample ID: 240-178297-3

Date Collected: 12/14/22 13:46 — **Matrix: Water**
Date Received: 12/20/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6010B		1	557096	RKT	EET CAN	12/23/22 03:49
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6020		1	557119	AJC	EET CAN	12/22/22 16:24
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 21:35
Total/NA	Analysis	9056A		1	557809	JMB	EET CAN	01/03/23 18:15
Total/NA	Analysis	9056A		10	557809	JMB	EET CAN	01/03/23 18:37
Total/NA	Analysis	9060A		1	557788	MMS	EET CAN	12/29/22 15:45

Client Sample ID: MW-16-04 — Lab Sample ID: 240-178297-4

Date Collected: 12/15/22 13:34 — **Matrix: Water**
Date Received: 12/20/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6010B		1	557096	RKT	EET CAN	12/23/22 03:53

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-04 — Lab Sample ID: 240-178297-4

Date Collected: 12/15/22 13:34 — **Matrix: Water**
Date Received: 12/20/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6020		1	557119	AJC	EET CAN	12/22/22 16:26
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 21:39
Total/NA	Analysis	9056A		1	557809	JMB	EET CAN	01/03/23 18:59
Total/NA	Analysis	9056A		5	557809	JMB	EET CAN	01/03/23 19:20
Total/NA	Analysis	9060A		1	557788	MMS	EET CAN	12/29/22 16:20

Client Sample ID: MW-16-05 — Lab Sample ID: 240-178297-5

Date Collected: 12/15/22 09:24 — **Matrix: Water**
Date Received: 12/20/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6010B		1	557096	RKT	EET CAN	12/23/22 04:06
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6020		1	557119	AJC	EET CAN	12/22/22 16:34
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 21:43
Total/NA	Analysis	9056A		2	557809	JMB	EET CAN	01/03/23 19:42
Total/NA	Analysis	9056A		20	557809	JMB	EET CAN	01/03/23 20:04
Total/NA	Analysis	9060A		1	557788	MMS	EET CAN	12/29/22 16:56

Client Sample ID: MW-16-06 — Lab Sample ID: 240-178297-6

Date Collected: 12/15/22 10:55 — **Matrix: Water**
Date Received: 12/20/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6010B		1	557096	RKT	EET CAN	12/23/22 04:10
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6020		1	557119	AJC	EET CAN	12/22/22 16:36
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 21:47
Total/NA	Analysis	9056A		2	557809	JMB	EET CAN	01/03/23 20:25
Total/NA	Analysis	9056A		20	557809	JMB	EET CAN	01/03/23 20:47
Total/NA	Analysis	9060A		1	557788	MMS	EET CAN	12/29/22 17:32

Client Sample ID: MW-16-07 — Lab Sample ID: 240-178297-7

Date Collected: 12/15/22 12:28 — **Matrix: Water**
Date Received: 12/20/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6010B		1	557096	RKT	EET CAN	12/23/22 04:14
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6020		1	557119	AJC	EET CAN	12/22/22 16:39

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-07 — Lab Sample ID: 240-178297-7

Date Collected: 12/15/22 12:28 — **Matrix: Water**
Date Received: 12/20/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 21:52
Total/NA	Analysis	9056A		2	557809	JMB	EET CAN	01/03/23 21:09
Total/NA	Analysis	9056A		20	557809	JMB	EET CAN	01/03/23 22:14
Total/NA	Analysis	9060A		1	557788	MMS	EET CAN	12/29/22 18:08

Client Sample ID: MW-16-08 — Lab Sample ID: 240-178297-8

Date Collected: 12/16/22 12:33 — **Matrix: Water**
Date Received: 12/20/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6010B		1	557096	RKT	EET CAN	12/23/22 04:19
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6020		1	557119	AJC	EET CAN	12/22/22 16:41
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 21:58
Total/NA	Analysis	9056A		2	557809	JMB	EET CAN	01/03/23 22:35
Total/NA	Analysis	9056A		20	557809	JMB	EET CAN	01/03/23 22:57
Total/NA	Analysis	9060A		1	557788	MMS	EET CAN	12/29/22 18:45

Client Sample ID: MW-16-09 — Lab Sample ID: 240-178297-9

Date Collected: 12/16/22 13:34 — **Matrix: Water**
Date Received: 12/20/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6010B		1	557096	RKT	EET CAN	12/23/22 04:23
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6020		1	557119	AJC	EET CAN	12/22/22 16:44
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 22:07
Total/NA	Analysis	9056A		1	557809	JMB	EET CAN	01/03/23 23:19
Total/NA	Analysis	9056A		10	557809	JMB	EET CAN	01/03/23 23:40
Total/NA	Analysis	9060A		1	557788	MMS	EET CAN	12/29/22 19:39

Client Sample ID: MW-16-10 — Lab Sample ID: 240-178297-10

Date Collected: 12/16/22 09:20 — **Matrix: Water**
Date Received: 12/20/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6010B		1	557096	RKT	EET CAN	12/23/22 04:28
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6020		1	557119	AJC	EET CAN	12/22/22 16:46
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 22:11
Total/NA	Analysis	9056A		2	557809	JMB	EET CAN	01/04/23 00:02

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Client Sample ID: MW-16-10 Lab Sample ID: 240-178297-10

Date Collected: 12/16/22 09:20 **Matrix: Water**
Date Received: 12/20/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		20	557809	JMB	EET CAN	01/04/23 00:24
Total/NA	Analysis	9060A		1	557788	MMS	EET CAN	12/29/22 20:14

Client Sample ID: MW-16-11A Lab Sample ID: 240-178297-11

Date Collected: 12/16/22 11:05 **Matrix: Water**
Date Received: 12/20/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6010B		1	557096	RKT	EET CAN	12/23/22 04:32
Total Recoverable	Prep	3005A			556847	SHB	EET CAN	12/21/22 12:00
Total Recoverable	Analysis	6020		1	557119	AJC	EET CAN	12/22/22 16:49
Total/NA	Analysis	2320B-1997		1	557050	JWW	EET CAN	12/21/22 22:16
Total/NA	Analysis	9056A		2	557809	JMB	EET CAN	01/04/23 00:46
Total/NA	Analysis	9056A		20	557809	JMB	EET CAN	01/04/23 01:07
Total/NA	Analysis	9060A		1	557788	MMS	EET CAN	12/29/22 20:49

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-178297-1
Project/Site: CCR DTE Belle River Power - Aquifer

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22 *
Michigan	State	9135	02-27-23
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

MICHIGAN
190

3.2/3.0

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: J. Krenz	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-102238-37085.4
Client Contact: Jacob Krenz	Phone: 734-345-4801	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page 4 of 7
Company: TRC Environmental Corporation.	PWSID:			Job #:
Address: 1540 Eisenhower Place	Due Date Requested:			
City: Ann Arbor	TAT Requested (days):			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: ~~179071 2022~~ ~~[illegible]~~ 193523			
Email: JKrenz@trccompanies.com	WO #: ~~379029.0003 P512~~			
Project Name: CCR DTE Belle River Power-Aquifer	Project #: ~~24016468~~			
Site: Michigan	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B - Carb, BiCarb & Total Alkalinity	9056A_28D - Chloride, Sulfate	6020 - (MOD) Metals - Ca,Mg,Na,K,Ba,Fe,B,Sr,Li	TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	D	A		
MW-16-01	12-14-22	1033	G	Water	N	N	X	X	X	X	4	
MW-16-02	12-14-22	1213	G	Water			X	X	X	X	4	
MW-16-03	12-14-22	1346	G	Water			X	X	X	X	4	
MW-16-04	12-15-22	1334	G	Water			X	X	X	X	4	
MW-16-05	12-15-22	0924	G	Water			X	X	X	X	4	
MW-16-06	12-15-22	1055	G	Water			X	X	X	X	4	
MW-16-07	12-15-22	1228	G	Water			X	X	X	X	4	
MW-16-08	12-16-22	1233	G	Water			X	X	X	X	4	
MW-16-09	12-16-22	1334	G	Water			X	X	X	X	4	
MW-16-10	12-16-22	0920	G	Water			X	X	X	X	4	
MW-16-11a	12-16-22	1105	G	Water	V	V	X	X	X	X	4	

240-178297 Chain of Custody

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

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		12-14-22/0850	TRC	TRC Storage	12/19/22/0850	TRC
2	TRC Storage Vault & Runner	12/19/22/1039			12/19/22 1040	
3		12/19/22 1400			12-20-22 10:00	

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

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins - Canton Sample Receipt Form/Narrative **Login # :** 178297
Barberton Facility

Client TRC Site Name

Cooler unpacked by: Chamek

Cooler Received on 12-20-22 Opened on 12-20-22

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

Eurofins Cooler # 3C Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN # IR-13 (CF **-0.2** °C) Observed Cooler Temp. 3.2 °C Corrected Cooler Temp. 3.0 °C
   IR GUN # IR-16 (CF **-0.1**°C) Observed Cooler Temp. ____ °C Corrected Cooler Temp. ____ °C
   IR GUN # IR-17 (CF **-0.3**°C) Observed Cooler Temp. ____ °C Corrected Cooler Temp. ____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity____	Yes	No	
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No	NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No	
-Were tamper/custody seals intact and uncompromised?	Yes	No	NA
3. Shippers' packing slip attached to the cooler(s)?	Yes	No	
4. Did custody papers accompany the sample(s)?	Yes	No	
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No	
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No	
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No	
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No	
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?			
10. Were correct bottle(s) used for the test(s) indicated?	Yes	No	
11. Sufficient quantity received to perform indicated analyses?	Yes	No	
12. Are these work share samples and all listed on the COC?	Yes	No	
If yes, Questions 13-17 have been checked at the originating laboratory.			
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No	NA pH Strip Lot# **HC291590**
14. Were VOAs on the COC?	Yes	No	
15. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	No	NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #____	Yes	No	
17. Was a LL Hg or Me Hg trip blank present? ____	Yes	No	

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM ____ Date ____ by ____ via Verbal Voice Mail Other

Concerning ____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) ____ were received after the recommended holding time had expired.
Sample(s) ____ were received in a broken container.
Sample(s) ____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) ____ were further preserved in the laboratory.
Time preserved: ____ Preservative(s) added/Lot number(s): ____

VOA Sample Preservation - Date/Time VOAs Frozen: ____

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-01	240-178297-D-1	Plastic 500ml - with Nitric Acid				
MW-16-02	240-178297-D-2	Plastic 500ml - with Nitric Acid				
MW-16-03	240-178297-D-3	Plastic 500ml - with Nitric Acid				
MW-16-04	240-178297-D-4	Plastic 500ml - with Nitric Acid				
MW-16-05	240-178297-D-5	Plastic 500ml - with Nitric Acid				
MW-16-06	240-178297-D-6	Plastic 500ml - with Nitric Acid				
MW-16-07	240-178297-D-7	Plastic 500ml - with Nitric Acid				
MW-16-08	240-178297-D-8	Plastic 500ml - with Nitric Acid				
MW-16-09	240-178297-D-9	Plastic 500ml - with Nitric Acid				
MW-16-10	240-178297-D-10	Plastic 500ml - with Nitric Acid				
MW-16-11A	240-178297-D-11	Plastic 500ml - with Nitric Acid				

ALS Scandinavia

ANALYSIS REPORT

Issued by:	ALS Scandinavia Luleå, Aurorum 10, SE-977 75 LULEÅ, Sweden
Client:	TRC
Date of receipt:	2022-12-22
Date of analysis:	2023-01-12
Order number(our):	LE2216210
Your reference:	Vincent Buening
Our reference:	Ilia Rodushkin

Lab number(our)	Sample name	δ11B, ‰	2SD, ‰	δ^{7}Li, ‰	2SD, ‰	$^{87}Sr/^{86}Sr$	2 SD
LE2216210-001	MW-16-01	39.26	0.65	31.21	0.72	0.709290	0.000029
LE2216210-002	MW-16-02	39.32	0.84	30.67	0.77	0.709517	0.000016
LE2216210-003	MW-16-03	39.49	0.56	29.15	0.82	0.709430	0.000065
LE2216210-004	MW-16-04	40.63	0.62	28.75	0.92	0.709343	0.000012
LE2216210-005	MW-16-05	45.84	0.62	27.83	0.73	0.709407	0.000008
LE2216210-006	MW-16-06	46.46	0.60	31.52	0.78	0.709327	0.000026
LE2216210-007	MW-16-07	45.94	0.85	28.44	0.73	0.709541	0.000013
LE2216210-008	MW-16-08	46.31	0.65	23.69	0.79	0.709581	0.000016
LE2216210-009	MW-16-09	43.49	0.71	29.89	1.04	0.709459	0.000030
LE2216210-009	MW-16-09, r.2	44.18	0.67	30.51	0.88	0.709448	0.000039
LE2216210-010	MW-16-10	46.72	0.79	21.88	0.67	0.709502	0.000020
LE2216210-011	MW-16-11A	46.11	0.64	22.89	0.74	0.709443	0.000040
LE2216210-012	North BAB	-0.81	0.78	-0.13	0.66	0.708901	0.000014
LE2216210-013	DB-01	-5.01	0.63	11.48	0.63	0.709354	0.000008
LE2216210-014	SC-01	-4.82	0.62	20.80	0.65	0.709999	0.000013
LE2216210-014	SC-01, r.2	-5.07	0.68	21.14	0.71	0.710000	0.000009
LE2216210-015	DUP-01	40.29	0.68	28.79	0.84	0.709390	0.000024

Comments

The analysis is carried out by MC-ICP-MS (NEPTUNE Plus) using internal standartization and external calibration with bracketing isotope SRMs

Analysis is carried out after ion exchange separation

Li delta value calculated against LSVEC NIST 8545 RM

Boron delta values calculated to NIST SRM 951 RM

SD calculated from two independent consequintive measurements

Signature

Ilia Rodushkin
Associate Professor
LABORATORY MANAGER
ALS Scandinavia AB

Waterloo EIL

#	Sample	Date	Lab#	$\delta^{18}O$	Result	Repeat	$\delta^{2}H$	Result	Repeat		pH
				H_2O	VSMOW	± 0.2‰	H_2O	VSMOW	± 0.8‰		
1	MW-16-01	2022-12-14	495331	X	-14.96	-15.02	X	-103.94	-104.60	250ml	7.75
2	MW-16-02	2022-12-14	495332	X	-15.04		X	-104.86		250ml	7.57
3	MW-16-03	2022-12-14	495333	X	-14.68		X	-102.29		250ml	7.92
4	MW-16-04	2022-12-15	495334	X	-14.67		X	-102.68		250ml	7.84
5	MW-16-05	2022-12-15	495335	X	-16.73	-16.61	X	-118.71	-118.73	250ml	8.05
6	MW-16-06	2022-12-15	495336	X	-16.61		X	-118.39		250ml	8.12
7	MW-16-07	2022-12-15	495337	X	-16.39		X	-116.78		250ml	7.98
8	MW-16-08	2022-12-16	495338	X	-16.35		X	-116.98		250ml	8.12
9	MW-16-09	2022-12-16	495339	X	-15.80		X	-112.02		250ml	7.76
10	MW-16-10	2022-12-16	495340	X	-16.42	-16.43	X	-116.12	-116.35	250ml	8.08
11	MW-16-11A	2022-12-16	495341	X	-16.75		X	-118.91		250ml	8.08
12	North BAB	2022-12-14	495342	X	-7.44		X	-54.32		250ml	9.28
13	DB-01	2022-12-16	495343	X	-7.06		X	-53.02		250ml	8.9
14	SC-01	2022-12-16	495344	X	-7.36		X	-53.70		250ml	8.33
15	DUP-01	2022-12-14	495345	X	-14.92	-14.92	X	-102.52	-101.84	250ml	7.92

EC	AZD
uS/cm	
1,371	
1,085	
1,615	
1,498	
3,497	
4,022	
4,492	
4,622	
2,527	
3,853	
4,198	
411	
1,827	
149	
1,615	

Miami Tritium Laboratory

UNIVERSITY
OF MIAMI

Rosenstiel School of Marine, Atmospheric, and Earth Science
Tritium Laboratory

4600 Rickenbacker Causeway
Miami, FL 33149-1031

P: 305-421-4100
F: 305-421-4112
tritium@miami.edu

March 13, 2023

TRITIUM LABORATORY

Data Release #23-013
Job # 4256

TRC Companies
TRITIUM SAMPLES

Dr. James D. Happell
Associate Research Professor

Distribution:
Vince Buening
1540 Eisenhower Place
Ann Arbor, MI 48108
vbuening@trccompanies.com

COMMENTS ON TRITIUM RESULTS (revision date 29 November 2016)

Tritium Scale New Half-life

Tritium concentrations are normally expressed in TU, where 1 TU indicates a T/H abundance ratio of 10^{-18}. The values refer to the tritium scale recommended by U.S. National Institute of Science and Technology (NIST, formerly NBS), and International Atomic Energy Agency (IAEA). The TU-numbers are based on the NIST tritium water standard #4926E. Age corrections and conversions are made using the recommended half-life of **12.32 years**, i.e., a decay rate of $\lambda = 5.626\%\ year^{-1}$. In this scale, 1 TU is equivalent to 7.151 dpm/kg H_2O, or 3.222 pCi/kg H_2O, (equivalent to pCi/L in freshwater) or 0.1192 Bq/kg H_2O (Bq = disint/sec). We can also express tritium concentrations in pCi/L upon client request.

Tritium concentrations in TU or pCi/L are calculated for date of sample collection, REFDATE in the table, as provided by the submitter. If no such date is available, date of sample arrival at our laboratory is used.

The stated errors, eTU or err, are one standard deviation (1 sigma) including all conceivable contributions. In the table, QUANT is quantity of sample received, and ELYS is the amount of water taken for electrolytic enrichment. DIR means direct run (no enrichment).

Very low tritium values

In some cases, negative tritium values are listed. Such numbers can occur because the net tritium count rate is, in principle the difference between the count rate of the sample and that of a tritium-free sample (background count or blank sample). Given a set of "unknown" samples with no tritium, the distribution of net results should become symmetrical around 0 TU or pCi/L. The negative values are reported as such for the benefit of allowing the user unbiased statistical treatment of sets of the data. For other applications, 0 TU or pCi/L should be used.

Additional information

Refer to Services Rendered (Tritium), Section II.8, in the "Tritium Laboratory Price Schedule; Procedures and Standards; Advice on Sampling", and our Web-site www.rsmas.miami.edu/groups/tritium.

Tritium efficiencies and background values are somewhat different in each of the nine counters and values are corrected for cosmic intensity, gas pressure and other parameters. For tritium, the efficiency is typically 1.00 cpm per 100 TU (direct counting). At 50× enrichment, the efficiency is equivalent to 1.00 cpm per 2.4 TU. The background is typically 0.3 cpm, known to about ± 0.02 cpm. Our reported results include not only the Poisson statistics, but also other experimental uncertainties such as enrichment error, etc.

Client: TRC COMPANIES — Purchase Order: 193682
Recvd : 22/12/21 — Contact: Vince Buening 734-904-3302
Job# : 4256 — vbuening@trccomapnies.com — 1540 Eisenhower Place
Final : 23/03/09 — BRPP BABs & DB — Ann Arbor, MI 48108

Cust LABEL INFO	JOB.SX	REFDATE	QUANT	ELYS	TU	eTU
MW-16-01	4256.01	221214	1000	275	0.02	0.09
MW-16-02	4256.02	221214	1000	275	0.03	0.09
MW-16-03	4256.03	221214	1000	275	0.00	0.09
MW-16-04	4256.04	221215	1000	275	-0.12	0.09
MW-16-05	4256.05	221215	1000	275	0.11	0.09
MW-16-06	4256.06	221215	1000	275	-0.01	0.09
MW-16-07	4256.07	221215	1000	275	0.37	0.09
MW-16-08	4256.08	221216	1000	275	0.03	0.09
MW-16-09	4256.09	221216	1000	275	0.18	0.09
MW-16-10	4256.10	221216	1000	275	0.27	0.09
MW-16-11A	4256.11	221216	1000	275	0.05	0.09
NORTH BAB	4256.12	221214	1000	275	26.4	0.9
DB-01	4256.13	221216	1000	275	22.4	0.7
SC-01	4256.14	221216	1000	275	23.9	0.8
DUP-01	4256.15	221214	1000	275	0.05*	0.09

* Average of duplicate runs

Appendix B
Laboratory Analytical

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Vincent Buening
TRC Environmental Corporation.
1540 Eisenhower Place
Ann Arbor, Michigan 48108-7080

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JOB DESCRIPTION

CCR DTE Belle River Power

JOB NUMBER

240-184643-2

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization

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6/21/2023 4:40:02 PM

Authorized for release by
Kris Brooks, Project Manager II
Kris.Brooks@et.eurofinsus.com
(330)966-9790

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-184643-2

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit
U	Indicates the analyte was analyzed for but not detected.

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

Job ID: 240-184643-2

Laboratory: Eurofins Cleveland

Narrative

Job Narrative
240-184643-2

Comments
No additional comments.

Receipt
The samples were received on 5/4/2023 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.4º C, 1.8º C, 2.4º C and 2.6º C.

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

General Chemistry
Method SM 2540C: The matrix spike / matrix spike duplicate (MS/MSD) precision for analytical batch 240-572272 was outside control limits. Sample matrix interference is suspected.

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

Method Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-184643-2

Method	Method Description	Protocol	Laboratory
6010D	Metals (ICP)	SW846	EET CLE
6020B	Metals (ICP/MS)	SW846	EET CLE
9056A	Anions, Ion Chromatography	SW846	EET CLE
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CLE

Protocol References:

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

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

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-184643-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-184643-9	MW-16-01	Ground Water	04/28/23 09:55	05/04/23 08:00
240-184643-10	MW-16-02	Ground Water	04/28/23 11:25	05/04/23 08:00
240-184643-11	MW-16-03	Ground Water	04/28/23 12:09	05/04/23 08:00
240-184643-12	MW-16-04	Ground Water	04/28/23 14:11	05/04/23 08:00
240-184643-13	MW-16-09	Ground Water	04/28/23 13:13	05/04/23 08:00
240-184643-14	DUP-02	Ground Water	04/28/23 00:00	05/04/23 08:00

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-184643-2

Client Sample ID: MW-16-01 — Lab Sample ID: 240-184643-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100	B	100	57	ug/L	1		6010D	Total Recoverable
Calcium	39000		1000	250	ug/L	1		6020B	Total Recoverable
Iron	740		100	47	ug/L	1		6020B	Total Recoverable
Chloride	450		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.7		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	13		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	860		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02 — Lab Sample ID: 240-184643-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1200	B	100	57	ug/L	1		6010D	Total Recoverable
Calcium	51000		1000	250	ug/L	1		6020B	Total Recoverable
Iron	790		100	47	ug/L	1		6020B	Total Recoverable
Chloride	350		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.2		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	9.2		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	700		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03 — Lab Sample ID: 240-184643-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100	B	100	57	ug/L	1		6010D	Total Recoverable
Calcium	32000		1000	250	ug/L	1		6020B	Total Recoverable
Iron	580		100	47	ug/L	1		6020B	Total Recoverable
Chloride	550		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.7		0.050	0.050	mg/L	1		9056A	Total/NA
Total Dissolved Solids	960		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-04 — Lab Sample ID: 240-184643-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1000	B	100	57	ug/L	1		6010D	Total Recoverable
Calcium	41000		1000	250	ug/L	1		6020B	Total Recoverable
Iron	2000		100	47	ug/L	1		6020B	Total Recoverable
Chloride	470		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.7		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	9.0		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	880		20	20	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-184643-2

Client Sample ID: MW-16-09 — Lab Sample ID: 240-184643-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1500	B	100	57	ug/L	1		6010D	Total Recoverable
Calcium	67000		1000	250	ug/L	1		6020B	Total Recoverable
Iron	16000		100	47	ug/L	1		6020B	Total Recoverable
Chloride	940		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.4		0.10	0.10	mg/L	2		9056A	Total/NA
Sulfate	9.6		2.0	2.0	mg/L	2		9056A	Total/NA
Total Dissolved Solids	1700		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-02 — Lab Sample ID: 240-184643-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100	B	100	57	ug/L	1		6010D	Total Recoverable
Calcium	39000		1000	250	ug/L	1		6020B	Total Recoverable
Iron	750		100	47	ug/L	1		6020B	Total Recoverable
Chloride	450		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.7		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	13		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1500		50	50	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-184643-2

Client Sample ID: MW-16-01

Date Collected: 04/28/23 09:55
Date Received: 05/04/23 08:00

Lab Sample ID: 240-184643-9

Matrix: Ground Water

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100	B	100	57	ug/L		05/05/23 14:00	05/10/23 05:03	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	39000		1000	250	ug/L		05/05/23 14:00	05/08/23 18:46	1
Iron	740		100	47	ug/L		05/05/23 14:00	05/08/23 18:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	450		5.0	5.0	mg/L			05/18/23 08:26	5
Fluoride (SW846 9056A)	1.7		0.050	0.050	mg/L			05/18/23 07:21	1
Sulfate (SW846 9056A)	13		1.0	1.0	mg/L			05/18/23 07:21	1
Total Dissolved Solids (SM 2540C)	860		20	20	mg/L			05/05/23 11:41	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-184643-2

Client Sample ID: MW-16-02

Date Collected: 04/28/23 11:25
Date Received: 05/04/23 08:00

Lab Sample ID: 240-184643-10

Matrix: Ground Water

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1200	B	100	57	ug/L		05/05/23 14:00	05/10/23 05:07	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	51000		1000	250	ug/L		05/05/23 14:00	05/08/23 18:49	1
Iron	790		100	47	ug/L		05/05/23 14:00	05/08/23 18:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	350		5.0	5.0	mg/L			05/20/23 09:38	5
Fluoride (SW846 9056A)	1.2		0.050	0.050	mg/L			05/18/23 08:47	1
Sulfate (SW846 9056A)	9.2		1.0	1.0	mg/L			05/18/23 08:47	1
Total Dissolved Solids (SM 2540C)	700		10	10	mg/L			05/05/23 11:41	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-184643-2

Client Sample ID: MW-16-03

Date Collected: 04/28/23 12:09
Date Received: 05/04/23 08:00

Lab Sample ID: 240-184643-11

Matrix: Ground Water

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100	B	100	57	ug/L		05/05/23 14:00	05/10/23 05:12	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	32000		1000	250	ug/L		05/05/23 14:00	05/08/23 18:51	1
Iron	580		100	47	ug/L		05/05/23 14:00	05/08/23 18:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	550		5.0	5.0	mg/L			05/19/23 03:50	5
Fluoride (SW846 9056A)	1.7		0.050	0.050	mg/L			05/19/23 03:28	1
Sulfate (SW846 9056A)	1.0	U	1.0	1.0	mg/L			05/19/23 03:28	1
Total Dissolved Solids (SM 2540C)	960		20	20	mg/L			05/05/23 11:41	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-184643-2

Client Sample ID: MW-16-04

Date Collected: 04/28/23 14:11
Date Received: 05/04/23 08:00

Lab Sample ID: 240-184643-12

Matrix: Ground Water

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000	B	100	57	ug/L		05/05/23 14:00	05/10/23 05:16	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	41000		1000	250	ug/L		05/05/23 14:00	05/08/23 18:54	1
Iron	2000		100	47	ug/L		05/05/23 14:00	05/08/23 18:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	470		5.0	5.0	mg/L			05/18/23 13:30	5
Fluoride (SW846 9056A)	1.7		0.050	0.050	mg/L			05/18/23 13:09	1
Sulfate (SW846 9056A)	9.0		1.0	1.0	mg/L			05/18/23 13:09	1
Total Dissolved Solids (SM 2540C)	880		20	20	mg/L			05/05/23 11:41	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-184643-2

Client Sample ID: MW-16-09

Date Collected: 04/28/23 13:13
Date Received: 05/04/23 08:00

Lab Sample ID: 240-184643-13

Matrix: Ground Water

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1500	B	100	57	ug/L		05/05/23 14:00	05/10/23 05:21	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	67000		1000	250	ug/L		05/05/23 14:00	05/08/23 18:57	1
Iron	16000		100	47	ug/L		05/05/23 14:00	05/08/23 18:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	940		20	20	mg/L			05/18/23 14:14	20
Fluoride (SW846 9056A)	1.4		0.10	0.10	mg/L			05/18/23 13:52	2
Sulfate (SW846 9056A)	9.6		2.0	2.0	mg/L			05/18/23 13:52	2
Total Dissolved Solids (SM 2540C)	1700		40	40	mg/L			05/05/23 11:41	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-184643-2

Client Sample ID: DUP-02

Date Collected: 04/28/23 00:00
Date Received: 05/04/23 08:00

Lab Sample ID: 240-184643-14

Matrix: Ground Water

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100	B	100	57	ug/L		05/05/23 14:00	05/10/23 05:25	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	39000		1000	250	ug/L		05/05/23 14:00	05/08/23 18:59	1
Iron	750		100	47	ug/L		05/05/23 14:00	05/08/23 18:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	450		5.0	5.0	mg/L			05/18/23 09:53	5
Fluoride (SW846 9056A)	1.7		0.050	0.050	mg/L			05/18/23 09:31	1
Sulfate (SW846 9056A)	13		1.0	1.0	mg/L			05/18/23 09:31	1
Total Dissolved Solids (SM 2540C)	1500		50	50	mg/L			05/05/23 11:41	1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-572275/1-A
Matrix: Water
Analysis Batch: 572766

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 572275

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	69.1	J	100	57	ug/L		05/05/23 14:00	05/10/23 03:45	1

Lab Sample ID: LCS 240-572275/2-A
Matrix: Water
Analysis Batch: 572766

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 572275

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1000	1010		ug/L		101	80 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 240-572275/1-A
Matrix: Water
Analysis Batch: 572569

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 572275

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	250	ug/L		05/05/23 14:00	05/08/23 17:58	1
Iron	100	U	100	47	ug/L		05/05/23 14:00	05/08/23 17:58	1

Lab Sample ID: LCS 240-572275/3-A
Matrix: Water
Analysis Batch: 572569

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 572275

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	25000	23600		ug/L		95	80 - 120
Iron	5000	4890		ug/L		98	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-573779/3
Matrix: Water
Analysis Batch: 573779

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			05/17/23 23:43	1
Fluoride	0.050	U	0.050	0.050	mg/L			05/17/23 23:43	1
Sulfate	1.0	U	1.0	1.0	mg/L			05/17/23 23:43	1

Lab Sample ID: LCS 240-573779/4
Matrix: Water
Analysis Batch: 573779

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.1		mg/L		100	90 - 110
Fluoride	2.50	2.63		mg/L		105	90 - 110
Sulfate	50.0	51.8		mg/L		104	90 - 110

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 240-573940/3
Matrix: Water
Analysis Batch: 573940

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			05/18/23 16:03	1
Fluoride	0.050	U	0.050	0.050	mg/L			05/18/23 16:03	1
Sulfate	1.0	U	1.0	1.0	mg/L			05/18/23 16:03	1

Lab Sample ID: LCS 240-573940/4
Matrix: Water
Analysis Batch: 573940

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.0		mg/L		100	90 - 110
Fluoride	2.50	2.60		mg/L		104	90 - 110
Sulfate	50.0	51.6		mg/L		103	90 - 110

Lab Sample ID: MB 240-574096/3
Matrix: Water
Analysis Batch: 574096

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			05/19/23 22:44	1
Fluoride	0.050	U	0.050	0.050	mg/L			05/19/23 22:44	1
Sulfate	1.0	U	1.0	1.0	mg/L			05/19/23 22:44	1

Lab Sample ID: LCS 240-574096/4
Matrix: Water
Analysis Batch: 574096

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.1		mg/L		100	90 - 110
Fluoride	2.50	2.63		mg/L		105	90 - 110
Sulfate	50.0	51.7		mg/L		103	90 - 110

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

Lab Sample ID: MB 240-572272/1
Matrix: Water
Analysis Batch: 572272

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			05/05/23 11:41	1

Lab Sample ID: LCS 240-572272/2
Matrix: Water
Analysis Batch: 572272

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	580	537		mg/L		93	80 - 120

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

Lab Sample ID: 240-184643-9 DU
Matrix: Ground Water
Analysis Batch: 572272

Client Sample ID: MW-16-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	860			1380	F3	mg/L				47	20

Metals

Prep Batch: 572275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184643-9	MW-16-01	Total Recoverable	Ground Water	3005A	
240-184643-10	MW-16-02	Total Recoverable	Ground Water	3005A	
240-184643-11	MW-16-03	Total Recoverable	Ground Water	3005A	
240-184643-12	MW-16-04	Total Recoverable	Ground Water	3005A	
240-184643-13	MW-16-09	Total Recoverable	Ground Water	3005A	
240-184643-14	DUP-02	Total Recoverable	Ground Water	3005A	
MB 240-572275/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-572275/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-572275/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 572569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184643-9	MW-16-01	Total Recoverable	Ground Water	6020B	572275
240-184643-10	MW-16-02	Total Recoverable	Ground Water	6020B	572275
240-184643-11	MW-16-03	Total Recoverable	Ground Water	6020B	572275
240-184643-12	MW-16-04	Total Recoverable	Ground Water	6020B	572275
240-184643-13	MW-16-09	Total Recoverable	Ground Water	6020B	572275
240-184643-14	DUP-02	Total Recoverable	Ground Water	6020B	572275
MB 240-572275/1-A	Method Blank	Total Recoverable	Water	6020B	572275
LCS 240-572275/3-A	Lab Control Sample	Total Recoverable	Water	6020B	572275

Analysis Batch: 572766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184643-9	MW-16-01	Total Recoverable	Ground Water	6010D	572275
240-184643-10	MW-16-02	Total Recoverable	Ground Water	6010D	572275
240-184643-11	MW-16-03	Total Recoverable	Ground Water	6010D	572275
240-184643-12	MW-16-04	Total Recoverable	Ground Water	6010D	572275
240-184643-13	MW-16-09	Total Recoverable	Ground Water	6010D	572275
240-184643-14	DUP-02	Total Recoverable	Ground Water	6010D	572275
MB 240-572275/1-A	Method Blank	Total Recoverable	Water	6010D	572275
LCS 240-572275/2-A	Lab Control Sample	Total Recoverable	Water	6010D	572275

General Chemistry

Analysis Batch: 572272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184643-9	MW-16-01	Total/NA	Ground Water	SM 2540C	
240-184643-10	MW-16-02	Total/NA	Ground Water	SM 2540C	
240-184643-11	MW-16-03	Total/NA	Ground Water	SM 2540C	
240-184643-12	MW-16-04	Total/NA	Ground Water	SM 2540C	
240-184643-13	MW-16-09	Total/NA	Ground Water	SM 2540C	
240-184643-14	DUP-02	Total/NA	Ground Water	SM 2540C	
MB 240-572272/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-572272/2	Lab Control Sample	Total/NA	Water	SM 2540C	
240-184643-9 DU	MW-16-01	Total/NA	Ground Water	SM 2540C	

Analysis Batch: 573779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184643-9	MW-16-01	Total/NA	Ground Water	9056A	
240-184643-9	MW-16-01	Total/NA	Ground Water	9056A	
240-184643-10	MW-16-02	Total/NA	Ground Water	9056A	

General Chemistry (Continued)

Analysis Batch: 573779 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184643-12	MW-16-04	Total/NA	Ground Water	9056A	
240-184643-12	MW-16-04	Total/NA	Ground Water	9056A	
240-184643-13	MW-16-09	Total/NA	Ground Water	9056A	
240-184643-13	MW-16-09	Total/NA	Ground Water	9056A	
240-184643-14	DUP-02	Total/NA	Ground Water	9056A	
240-184643-14	DUP-02	Total/NA	Ground Water	9056A	
MB 240-573779/3	Method Blank	Total/NA	Water	9056A	
LCS 240-573779/4	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 573940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184643-11	MW-16-03	Total/NA	Ground Water	9056A	
240-184643-11	MW-16-03	Total/NA	Ground Water	9056A	
MB 240-573940/3	Method Blank	Total/NA	Water	9056A	
LCS 240-573940/4	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 574096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184643-10	MW-16-02	Total/NA	Ground Water	9056A	
MB 240-574096/3	Method Blank	Total/NA	Water	9056A	
LCS 240-574096/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-184643-2

Client Sample ID: MW-16-01

Date Collected: 04/28/23 09:55
Date Received: 05/04/23 08:00

Lab Sample ID: 240-184643-9

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			572275	MRL	EET CLE	05/05/23 14:00
Total Recoverable	Analysis	6010D		1	572766	KLC	EET CLE	05/10/23 05:03
Total Recoverable	Prep	3005A			572275	MRL	EET CLE	05/05/23 14:00
Total Recoverable	Analysis	6020B		1	572569	DSH	EET CLE	05/08/23 18:46
Total/NA	Analysis	9056A		1	573779	JWW	EET CLE	05/18/23 07:21
Total/NA	Analysis	9056A		5	573779	JWW	EET CLE	05/18/23 08:26
Total/NA	Analysis	SM 2540C		1	572272	MS	EET CLE	05/05/23 11:41

Client Sample ID: MW-16-02

Date Collected: 04/28/23 11:25
Date Received: 05/04/23 08:00

Lab Sample ID: 240-184643-10

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			572275	MRL	EET CLE	05/05/23 14:00
Total Recoverable	Analysis	6010D		1	572766	KLC	EET CLE	05/10/23 05:07
Total Recoverable	Prep	3005A			572275	MRL	EET CLE	05/05/23 14:00
Total Recoverable	Analysis	6020B		1	572569	DSH	EET CLE	05/08/23 18:49
Total/NA	Analysis	9056A		1	573779	JWW	EET CLE	05/18/23 08:47
Total/NA	Analysis	9056A		5	574096	JWW	EET CLE	05/20/23 09:38
Total/NA	Analysis	SM 2540C		1	572272	MS	EET CLE	05/05/23 11:41

Client Sample ID: MW-16-03

Date Collected: 04/28/23 12:09
Date Received: 05/04/23 08:00

Lab Sample ID: 240-184643-11

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			572275	MRL	EET CLE	05/05/23 14:00
Total Recoverable	Analysis	6010D		1	572766	KLC	EET CLE	05/10/23 05:12
Total Recoverable	Prep	3005A			572275	MRL	EET CLE	05/05/23 14:00
Total Recoverable	Analysis	6020B		1	572569	DSH	EET CLE	05/08/23 18:51
Total/NA	Analysis	9056A		1	573940	JWW	EET CLE	05/19/23 03:28
Total/NA	Analysis	9056A		5	573940	JWW	EET CLE	05/19/23 03:50
Total/NA	Analysis	SM 2540C		1	572272	MS	EET CLE	05/05/23 11:41

Client Sample ID: MW-16-04

Date Collected: 04/28/23 14:11
Date Received: 05/04/23 08:00

Lab Sample ID: 240-184643-12

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			572275	MRL	EET CLE	05/05/23 14:00
Total Recoverable	Analysis	6010D		1	572766	KLC	EET CLE	05/10/23 05:16
Total Recoverable	Prep	3005A			572275	MRL	EET CLE	05/05/23 14:00
Total Recoverable	Analysis	6020B		1	572569	DSH	EET CLE	05/08/23 18:54
Total/NA	Analysis	9056A		1	573779	JWW	EET CLE	05/18/23 13:09

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-184643-2

Client Sample ID: MW-16-04

Date Collected: 04/28/23 14:11
Date Received: 05/04/23 08:00

Lab Sample ID: 240-184643-12
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	573779	JWW	EET CLE	05/18/23 13:30
Total/NA	Analysis	SM 2540C		1	572272	MS	EET CLE	05/05/23 11:41

Client Sample ID: MW-16-09

Date Collected: 04/28/23 13:13
Date Received: 05/04/23 08:00

Lab Sample ID: 240-184643-13
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			572275	MRL	EET CLE	05/05/23 14:00
Total Recoverable	Analysis	6010D		1	572766	KLC	EET CLE	05/10/23 05:21
Total Recoverable	Prep	3005A			572275	MRL	EET CLE	05/05/23 14:00
Total Recoverable	Analysis	6020B		1	572569	DSH	EET CLE	05/08/23 18:57
Total/NA	Analysis	9056A		2	573779	JWW	EET CLE	05/18/23 13:52
Total/NA	Analysis	9056A		20	573779	JWW	EET CLE	05/18/23 14:14
Total/NA	Analysis	SM 2540C		1	572272	MS	EET CLE	05/05/23 11:41

Client Sample ID: DUP-02

Date Collected: 04/28/23 00:00
Date Received: 05/04/23 08:00

Lab Sample ID: 240-184643-14
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			572275	MRL	EET CLE	05/05/23 14:00
Total Recoverable	Analysis	6010D		1	572766	KLC	EET CLE	05/10/23 05:25
Total Recoverable	Prep	3005A			572275	MRL	EET CLE	05/05/23 14:00
Total Recoverable	Analysis	6020B		1	572569	DSH	EET CLE	05/08/23 18:59
Total/NA	Analysis	9056A		1	573779	JWW	EET CLE	05/18/23 09:31
Total/NA	Analysis	9056A		5	573779	JWW	EET CLE	05/18/23 09:53
Total/NA	Analysis	SM 2540C		1	572272	MS	EET CLE	05/05/23 11:41

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation.
Job ID: 240-184643-2
Project/Site: CCR DTE Belle River Power

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Connecticut	State	PH-0590	06-29-23
Florida	NELAP	E87225	05-24-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	05-31-23
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	06-12-23
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	05-24-23
Pennsylvania	NELAP	68-00340	06-13-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

MICHIGAN 190

Chain of Custody Record

MICHIGAN 190

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Client Information	Sampler: Jake Krenz	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-106108-33142.1
Client Contact: Jacob Krenz	Phone: 734-395-9804	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: TRC Environmental Corporation.	PWSID:	Analysis Requested		Job #:
Address: 1540 Eisenhower Place	Due Date Requested:			Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:
City: Ann Arbor	TAT Requested (days):			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: PO Requested			
Email: JKrenz@trccompanies.com	WO #: 518728.0003.0000			
Project Name: CCR DTE Belle River Power	Project #: 24016463			
Site: Michigan	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)		2540C_Calcd - TDS	6010B, 6020	9056A_28D - Chloride, Fluoride and Sulfate												Total Number of containers	Special Instructions/Note:
			Preservation Code:		X		N	D	N												X	
~~MW-16-01~~				Water																		
~~MW-16-02~~				Water																		
~~MW-16-03~~				Water																		
~~MW-16-04~~				Water																		
MW-16-05	4-27-23	1423	G	Water	N	N	X	X	X												3	
MW-16-06	4-27-23	1313	G	Water	N	N	X	X	X												3	
MW-16-07	4-27-23	1220	G	Water	N	N	X	X	X												3	
MW-16-08	4-27-23	1051	G	Water	N	N	X	X	X												3	
~~MW-16-09~~				Water																		
MW-16-10	4-27-23	1003	G	Water	N	N	X	X	X												3	
MW-16-11A	4-27-23	0908	G	Water	N	N	X	X	X												3	

240-184643 Chain of Custody

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

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time: 5-1-23 1600	Company: TRC	Received by: TRC Storage	Date/Time: 5-1-23 0600	Company: TRC
Relinquished by:	Date/Time: 5/3/23 1:45 PM	Company: TRC	Received by:	Date/Time: 5/3/23	Company: FEDEX
Relinquished by:	Date/Time: 5/3/23	Company: FEDEX	Received by: Leah M. Smith	Date/Time: 05-04-23 800	Company: FEDEX

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

MICHIGAN 190

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

Client Information	Sampler: Jake Krenz	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-106108-33142.2
Client Contact: Jacob Krenz	Phone: 734-395-5804	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page 2 of 2
Company: TRC Environmental Corporation.	PWSID:			Job #:
Address: 1540 Eisenhower Place	Due Date Requested:			
City: Ann Arbor	TAT Requested (days):			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: PO Requested			
Email: JKrenz@trccompanies.com	WO #: 518728.0003.0000			
Project Name: CCR DTE Belle River Power	Project #: 24016463			
Site: Michigan	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Y	2540C_Calcd - TDS	6010B, 6020	9056A_28D - Chloride, Fluoride and Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N		
DUP-01	4-27-23	—	G	Water	N	N	X	X	X	3	
~~DUP-02~~				~~Water~~							
EB-01	4-26-23	1530	G	Water	N	N	X	X	X	3	
				Water							

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

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		5-1-23 /0600	TRC	TRC Storage	5-1-23 /0600	TRC
2		5/3/23 1145PM	TRC		5/3/23	EETNA
3		5/3/23	EETNA	M. Smith	05-04-23 800	EETNC

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

MICHIGAN 190

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing

Client Information	Sampler: Jake Krenz	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-106108-33142.1
Client Contact: Jacob Krenz	Phone: 734-395-4804	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: TRC Environmental Corporation	PWSID:			Job #:
Address: 1540 Eisenhower Place	Due Date Requested:			
City: Ann Arbor	TAT Requested (days):			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: PO Requested			
Email: JKrenz@trccompanies.com	WO #: 518728.0003.0000			
Project Name: CCR DTE Belle River Power	Project #: 24016463			
Site: Michigan	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C_Calcd - TDS	6010B_6020	9056A_28D - Chloride, Fluoride and Sulfate	Special Instructions/Note:
			Preservation Code:				N	D	N	
MW-16-01	4-28-23	0955	G	Water	N	N	X	X	X	
MW-16-02	4-28-23	1125	G	Water			X	X	X	
MW-16-03	4-28-23	1209	G	Water			X	X	X	
MW-16-04	4-28-23	1411	G	Water			X	X	X	
~~MW-16-05~~				Water						
~~MW-16-06~~				Water						
~~MW-16-07~~				Water						
~~MW-16-08~~				Water						
MW-16-09	4-28-23	1313	G	Water	N	N	X	X	X	
~~MW-16-10~~				Water						
~~MW-16-11A~~				Water						

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

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		5-1-23/0600	TRC	TRC Storage	5-1-23/0600	TRC
2		5/3/23 1:45pm	TRC		5/3/23	EETA
3		5/3/23	EETA		05-04-23 800	EETNC

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

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

MICHIGAN 190

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing

Client Information	Sampler:	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-106108-33142.2
Client Contact: Jacob Krenz	Phone:	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page 2 of 2
Company: TRC Environmental Corporation.	PWSID:	Analysis Requested		Job #:
Address: 1540 Eisenhower Place	Due Date Requested:			Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:
City: Ann Arbor	TAT Requested (days):			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: PO Requested			
Email: JKrenz@trccompanies.com	WO #: 518728.0003.0000			
Project Name: CCR DTE Belle River Power	Project #: 24016463			
Site: Michigan	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C_Calcd - TDS	6010B, 6020	9056A_28D - Chloride, Fluoride and Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	D	N		
~~DUP-01~~				Water							
DUP-02	4-28-23	—	G	Water	N	N	X	X	X		
~~EB-01~~				~~Water~~							
				Water							

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

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

	Date/Time	Company		Date/Time	Company
Relinquished by:	5-1-23 /0600	TRC	Received by: TRC Storage	5-1-23 /0600	TRC
Relinquished by:	5/3/23 1:45PM	TRC	Received by:	5/3/23	EBA
Relinquished by:	5/3/23	EBA	Received by: Leah M. Smith	05-04-23 800	EETNC

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins - Canton Sample Receipt Form/Narrative **Login # :** 184643
Barberton Facility

Client TRC Environmental Corporation Site Name _____ Cooler unpacked by: Leah M. Smith

Cooler Received on 05-04-23 Opened on 05-04-23

FedEx: 1st Grd Exp UPS FAS (Clipper) Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used: ~~Bubble Wrap~~ Foam Plastic Bag None Other _____

COOLANT: ~~Wet Ice~~ Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☒ See Multiple Cooler Form

IR GUN # 22 (CF +0.0 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____	(Yes)	No
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes)	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	Yes	No (NA)
3. Shippers' packing slip attached to the cooler(s)?	Yes	(No)
4. Did custody papers accompany the sample(s)?	(Yes)	No
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	(Yes)	No
7. Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes)	No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?	(Y)	(Y) (Y)
10. Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11. Sufficient quantity received to perform indicated analyses?	(Yes)	No
12. Are these work share samples and all listed on the COC?	Yes	(No)
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	(Yes)	No NA pH Strip Lot# **HC208070**
14. Were VOAs on the COC?	Yes	(No)
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes	No (NA)
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes	(No)
17. Was a LL Hg or Me Hg trip blank present? _____	Yes	(No)

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login # : 184643

Eurofins - Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
EC (circled) Client Box Other	IR GUN #: 22	1.8	1.8	Wet Ice (circled) Blue Ice Dry Ice Water None
EC (circled) Client Box Other	IR GUN #: 22	2.4	2.4	Wet Ice (circled) Blue Ice Dry Ice Water None
EC (circled) Client Box Other	IR GUN #: 22	1.4	1.4	Wet Ice (circled) Blue Ice Dry Ice Water None
EC (circled) Client Box Other	IR GUN #: 22	2.6	2.6	Wet Ice (circled) Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None

☐ See Temperature Excursion Form

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Coolers

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-05	240-184643-C-1	Plastic 500ml - with Nitric Acid	<2			
MW-16-06	240-184643-C-2	Plastic 500ml - with Nitric Acid	<2			
MW-16-07	240-184643-C-3	Plastic 500ml - with Nitric Acid	<2			
MW-16-08	240-184643-C-4	Plastic 500ml - with Nitric Acid	<2			
MW-16-10	240-184643-C-5	Plastic 500ml - with Nitric Acid	<2			
MW-16-11A	240-184643-C-6	Plastic 500ml - with Nitric Acid	<2			
DUP-01	240-184643-C-7	Plastic 500ml - with Nitric Acid	<2			
EB-01	240-184643-C-8	Plastic 500ml - with Nitric Acid	<2			
MW-16-01	240-184643-C-9	Plastic 500ml - with Nitric Acid	<2			
MW-16-02	240-184643-C-10	Plastic 500ml - with Nitric Acid	<2			
MW-16-03	240-184643-C-11	Plastic 500ml - with Nitric Acid	<2			
MW-16-04	240-184643-C-12	Plastic 500ml - with Nitric Acid	<2			
MW-16-09	240-184643-C-13	Plastic 500ml - with Nitric Acid	<2			
DUP-02	240-184643-C-14	Plastic 500ml - with Nitric Acid	<2			

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Vincent Buening
TRC Environmental Corporation.
1540 Eisenhower Place
Ann Arbor, Michigan 48108-7080

Generated 10/23/2023 3:04:11 PM

JOB DESCRIPTION

CCR DTE Belle River Power

JOB NUMBER

240-193581-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization

Generated
10/23/2023 3:04:11 PM

Authorized for release by
Kris Brooks, Project Manager II
Kris.Brooks@et.eurofinsus.com
(330)966-9790

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation.
Job ID: 240-193581-1
Project/Site: CCR DTE Belle River Power

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

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

Job ID: 240-193581-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative
240-193581-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/13/2023 6:37 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.3°C, 0.6°C and 1.1°C

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

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

Method Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-193581-1

Method	Method Description	Protocol	Laboratory
6010D	Metals (ICP)	SW846	EET CLE
6020B	Metals (ICP/MS)	SW846	EET CLE
9056A	Anions, Ion Chromatography	SW846	EET CLE
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CLE

Protocol References:

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

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

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-193581-1
Project/Site: CCR DTE Belle River Power

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-193581-1	MW-16-01	Water	10/09/23 12:50	10/13/23 18:37
240-193581-2	MW-16-02	Water	10/09/23 13:35	10/13/23 18:37
240-193581-3	MW-16-03	Water	10/09/23 14:40	10/13/23 18:37
240-193581-4	MW-16-04	Water	10/09/23 15:40	10/13/23 18:37
240-193581-5	MW-16-09	Water	10/10/23 09:19	10/13/23 18:37
240-193581-6	DUP-01	Water	10/09/23 00:00	10/13/23 18:37

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-193581-1

Client Sample ID: MW-16-01 — Lab Sample ID: 240-193581-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100	57	ug/L	1		6010D	Total Recoverable
Calcium	38000		1000	250	ug/L	1		6020B	Total Recoverable
Iron	630		100	47	ug/L	1		6020B	Total Recoverable
Chloride	470		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.8		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	6.8		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	900		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02 — Lab Sample ID: 240-193581-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100	57	ug/L	1		6010D	Total Recoverable
Calcium	52000		1000	250	ug/L	1		6020B	Total Recoverable
Iron	880		100	47	ug/L	1		6020B	Total Recoverable
Chloride	360		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.2		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	17		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	740		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03 — Lab Sample ID: 240-193581-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100	57	ug/L	1		6010D	Total Recoverable
Calcium	33000		1000	250	ug/L	1		6020B	Total Recoverable
Iron	610		100	47	ug/L	1		6020B	Total Recoverable
Chloride	570		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.8		0.050	0.050	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1000		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-04 — Lab Sample ID: 240-193581-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	940		100	57	ug/L	1		6010D	Total Recoverable
Calcium	39000		1000	250	ug/L	1		6020B	Total Recoverable
Iron	1400		100	47	ug/L	1		6020B	Total Recoverable
Chloride	500		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.8		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	13		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	910		20	20	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-193581-1

Client Sample ID: MW-16-09 — Lab Sample ID: 240-193581-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1500		100	57	ug/L	1		6010D	Total Recoverable
Calcium	110000		1000	250	ug/L	1		6020B	Total Recoverable
Iron	22000		100	47	ug/L	1		6020B	Total Recoverable
Chloride	960		10	10	mg/L	10		9056A	Total/NA
Fluoride	1.5		0.10	0.10	mg/L	2		9056A	Total/NA
Sulfate	5.9		2.0	2.0	mg/L	2		9056A	Total/NA
Total Dissolved Solids	1600		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01 — Lab Sample ID: 240-193581-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100	57	ug/L	1		6010D	Total Recoverable
Calcium	32000		1000	250	ug/L	1		6020B	Total Recoverable
Iron	590		100	47	ug/L	1		6020B	Total Recoverable
Chloride	560		10	10	mg/L	10		9056A	Total/NA
Fluoride	1.8		0.050	0.050	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1000		20	20	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-193581-1

Client Sample ID: MW-16-01
Date Collected: 10/09/23 12:50
Date Received: 10/13/23 18:37

Lab Sample ID: 240-193581-1
Matrix: Water

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100	57	ug/L		10/16/23 14:00	10/18/23 01:03	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	38000		1000	250	ug/L		10/16/23 14:00	10/18/23 15:45	1
Iron	630		100	47	ug/L		10/16/23 14:00	10/18/23 15:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	470		5.0	5.0	mg/L			10/19/23 14:02	5
Fluoride (SW846 9056A)	1.8		0.050	0.050	mg/L			10/19/23 13:02	1
Sulfate (SW846 9056A)	6.8		1.0	1.0	mg/L			10/19/23 13:02	1
Total Dissolved Solids (SM 2540C)	900		40	40	mg/L			10/16/23 14:12	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-193581-1

Client Sample ID: MW-16-02
Date Collected: 10/09/23 13:35
Date Received: 10/13/23 18:37

Lab Sample ID: 240-193581-2
Matrix: Water

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100	57	ug/L		10/16/23 14:00	10/18/23 01:07	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	52000		1000	250	ug/L		10/16/23 14:00	10/18/23 15:47	1
Iron	880		100	47	ug/L		10/16/23 14:00	10/18/23 15:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	360		5.0	5.0	mg/L			10/19/23 05:59	5
Fluoride (SW846 9056A)	1.2		0.050	0.050	mg/L			10/19/23 05:39	1
Sulfate (SW846 9056A)	17		1.0	1.0	mg/L			10/19/23 05:39	1
Total Dissolved Solids (SM 2540C)	740		10	10	mg/L			10/16/23 14:12	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-193581-1

Client Sample ID: MW-16-03
Date Collected: 10/09/23 14:40
Date Received: 10/13/23 18:37

Lab Sample ID: 240-193581-3
Matrix: Water

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100	57	ug/L		10/16/23 14:00	10/18/23 01:12	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	33000		1000	250	ug/L		10/16/23 14:00	10/18/23 15:50	1
Iron	610		100	47	ug/L		10/16/23 14:00	10/18/23 15:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	570		5.0	5.0	mg/L			10/19/23 06:39	5
Fluoride (SW846 9056A)	1.8		0.050	0.050	mg/L			10/19/23 06:19	1
Sulfate (SW846 9056A)	1.0	U	1.0	1.0	mg/L			10/19/23 06:19	1
Total Dissolved Solids (SM 2540C)	1000		20	20	mg/L			10/16/23 14:12	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-193581-1

Client Sample ID: MW-16-04
Date Collected: 10/09/23 15:40
Date Received: 10/13/23 18:37

Lab Sample ID: 240-193581-4
Matrix: Water

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	940		100	57	ug/L		10/16/23 14:00	10/18/23 01:16	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	39000		1000	250	ug/L		10/16/23 14:00	10/18/23 15:52	1
Iron	1400		100	47	ug/L		10/16/23 14:00	10/18/23 15:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	500		5.0	5.0	mg/L			10/19/23 08:00	5
Fluoride (SW846 9056A)	1.8		0.050	0.050	mg/L			10/19/23 06:59	1
Sulfate (SW846 9056A)	13		1.0	1.0	mg/L			10/19/23 06:59	1
Total Dissolved Solids (SM 2540C)	910		20	20	mg/L			10/16/23 14:12	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-193581-1

Client Sample ID: MW-16-09
Date Collected: 10/10/23 09:19
Date Received: 10/13/23 18:37

Lab Sample ID: 240-193581-5
Matrix: Water

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1500		100	57	ug/L		10/16/23 14:00	10/18/23 01:21	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	110000		1000	250	ug/L		10/16/23 14:00	10/18/23 15:54	1
Iron	22000		100	47	ug/L		10/16/23 14:00	10/18/23 15:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	960		10	10	mg/L			10/19/23 08:40	10
Fluoride (SW846 9056A)	1.5		0.10	0.10	mg/L			10/19/23 08:20	2
Sulfate (SW846 9056A)	5.9		2.0	2.0	mg/L			10/19/23 08:20	2
Total Dissolved Solids (SM 2540C)	1600		40	40	mg/L			10/16/23 14:12	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-193581-1

Client Sample ID: DUP-01
Date Collected: 10/09/23 00:00
Date Received: 10/13/23 18:37

Lab Sample ID: 240-193581-6
Matrix: Water

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100	57	ug/L		10/16/23 14:00	10/18/23 01:34	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	32000		1000	250	ug/L		10/16/23 14:00	10/18/23 15:57	1
Iron	590		100	47	ug/L		10/16/23 14:00	10/18/23 15:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	560		10	10	mg/L			10/19/23 09:20	10
Fluoride (SW846 9056A)	1.8		0.050	0.050	mg/L			10/19/23 09:00	1
Sulfate (SW846 9056A)	1.0	U	1.0	1.0	mg/L			10/19/23 09:00	1
Total Dissolved Solids (SM 2540C)	1000		20	20	mg/L			10/16/23 14:12	1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-590940/1-A
Matrix: Water
Analysis Batch: 591127

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 590940

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	57	ug/L		10/16/23 14:00	10/17/23 23:19	1

Lab Sample ID: LCS 240-590940/2-A
Matrix: Water
Analysis Batch: 591127

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 590940

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1000	1030		ug/L		103	80 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 240-590940/1-A
Matrix: Water
Analysis Batch: 591232

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 590940

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	250	ug/L		10/16/23 14:00	10/17/23 20:40	1
Iron	100	U	100	47	ug/L		10/16/23 14:00	10/17/23 20:40	1

Lab Sample ID: LCS 240-590940/3-A
Matrix: Water
Analysis Batch: 591232

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 590940

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	25000	23000		ug/L		92	80 - 120
Iron	5000	4810		ug/L		96	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-591317/3
Matrix: Water
Analysis Batch: 591317

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			10/19/23 03:58	1
Fluoride	0.050	U	0.050	0.050	mg/L			10/19/23 03:58	1
Sulfate	1.0	U	1.0	1.0	mg/L			10/19/23 03:58	1

Lab Sample ID: LCS 240-591317/4
Matrix: Water
Analysis Batch: 591317

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	52.4		mg/L		105	90 - 110
Fluoride	2.50	2.74		mg/L		109	90 - 110
Sulfate	50.0	54.0		mg/L		108	90 - 110

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 240-193581-1 MS
Matrix: Water
Analysis Batch: 591317

Client Sample ID: MW-16-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	1.8		2.50	4.63		mg/L		113	80 - 120
Sulfate	6.8		50.0	62.7		mg/L		112	80 - 120

Lab Sample ID: 240-193581-1 MS
Matrix: Water
Analysis Batch: 591317

Client Sample ID: MW-16-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	470		250	694		mg/L		89	80 - 120
Fluoride	1.8		12.5	15.4		mg/L		109	80 - 120
Sulfate	7.4		250	266		mg/L		104	80 - 120

Lab Sample ID: 240-193581-1 MSD
Matrix: Water
Analysis Batch: 591317

Client Sample ID: MW-16-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	1.8		2.50	4.52		mg/L		108	80 - 120	3	15
Sulfate	6.8		50.0	60.5		mg/L		107	80 - 120	4	15

Lab Sample ID: 240-193581-1 MSD
Matrix: Water
Analysis Batch: 591317

Client Sample ID: MW-16-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	470		250	696		mg/L		90	80 - 120	0	15
Fluoride	1.8		12.5	15.5		mg/L		109	80 - 120	1	15
Sulfate	7.4		250	269		mg/L		105	80 - 120	1	15

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

Lab Sample ID: MB 240-590981/1
Matrix: Water
Analysis Batch: 590981

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			10/16/23 14:12	1

Lab Sample ID: LCS 240-590981/2
Matrix: Water
Analysis Batch: 590981

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	336	317		mg/L		94	80 - 120

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

Lab Sample ID: 240-193581-2 DU
Matrix: Water
Analysis Batch: 590981

Client Sample ID: MW-16-02
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	740			730		mg/L				1	20

Metals

Prep Batch: 590940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-193581-1	MW-16-01	Total Recoverable	Water	3005A	
240-193581-2	MW-16-02	Total Recoverable	Water	3005A	
240-193581-3	MW-16-03	Total Recoverable	Water	3005A	
240-193581-4	MW-16-04	Total Recoverable	Water	3005A	
240-193581-5	MW-16-09	Total Recoverable	Water	3005A	
240-193581-6	DUP-01	Total Recoverable	Water	3005A	
MB 240-590940/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-590940/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-590940/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 591127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-193581-1	MW-16-01	Total Recoverable	Water	6010D	590940
240-193581-2	MW-16-02	Total Recoverable	Water	6010D	590940
240-193581-3	MW-16-03	Total Recoverable	Water	6010D	590940
240-193581-4	MW-16-04	Total Recoverable	Water	6010D	590940
240-193581-5	MW-16-09	Total Recoverable	Water	6010D	590940
240-193581-6	DUP-01	Total Recoverable	Water	6010D	590940
MB 240-590940/1-A	Method Blank	Total Recoverable	Water	6010D	590940
LCS 240-590940/2-A	Lab Control Sample	Total Recoverable	Water	6010D	590940

Analysis Batch: 591232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-590940/1-A	Method Blank	Total Recoverable	Water	6020B	590940
LCS 240-590940/3-A	Lab Control Sample	Total Recoverable	Water	6020B	590940

Analysis Batch: 591382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-193581-1	MW-16-01	Total Recoverable	Water	6020B	590940
240-193581-2	MW-16-02	Total Recoverable	Water	6020B	590940
240-193581-3	MW-16-03	Total Recoverable	Water	6020B	590940
240-193581-4	MW-16-04	Total Recoverable	Water	6020B	590940
240-193581-5	MW-16-09	Total Recoverable	Water	6020B	590940
240-193581-6	DUP-01	Total Recoverable	Water	6020B	590940

General Chemistry

Analysis Batch: 590981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-193581-1	MW-16-01	Total/NA	Water	SM 2540C	
240-193581-2	MW-16-02	Total/NA	Water	SM 2540C	
240-193581-3	MW-16-03	Total/NA	Water	SM 2540C	
240-193581-4	MW-16-04	Total/NA	Water	SM 2540C	
240-193581-5	MW-16-09	Total/NA	Water	SM 2540C	
240-193581-6	DUP-01	Total/NA	Water	SM 2540C	
MB 240-590981/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-590981/2	Lab Control Sample	Total/NA	Water	SM 2540C	
240-193581-2 DU	MW-16-02	Total/NA	Water	SM 2540C	

QC Association Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-193581-1

General Chemistry

Analysis Batch: 591317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-193581-1	MW-16-01	Total/NA	Water	9056A	
240-193581-1	MW-16-01	Total/NA	Water	9056A	
240-193581-2	MW-16-02	Total/NA	Water	9056A	
240-193581-2	MW-16-02	Total/NA	Water	9056A	
240-193581-3	MW-16-03	Total/NA	Water	9056A	
240-193581-3	MW-16-03	Total/NA	Water	9056A	
240-193581-4	MW-16-04	Total/NA	Water	9056A	
240-193581-4	MW-16-04	Total/NA	Water	9056A	
240-193581-5	MW-16-09	Total/NA	Water	9056A	
240-193581-5	MW-16-09	Total/NA	Water	9056A	
240-193581-6	DUP-01	Total/NA	Water	9056A	
240-193581-6	DUP-01	Total/NA	Water	9056A	
MB 240-591317/3	Method Blank	Total/NA	Water	9056A	
LCS 240-591317/4	Lab Control Sample	Total/NA	Water	9056A	
240-193581-1 MS	MW-16-01	Total/NA	Water	9056A	
240-193581-1 MS	MW-16-01	Total/NA	Water	9056A	
240-193581-1 MSD	MW-16-01	Total/NA	Water	9056A	
240-193581-1 MSD	MW-16-01	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-193581-1

Client Sample ID: MW-16-01

Lab Sample ID: 240-193581-1

Date Collected: 10/09/23 12:50

Matrix: Water

Date Received: 10/13/23 18:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			590940	BN	EET CLE	10/16/23 14:00
Total Recoverable	Analysis	6010D		1	591127	KLC	EET CLE	10/18/23 01:03
Total Recoverable	Prep	3005A			590940	BN	EET CLE	10/16/23 14:00
Total Recoverable	Analysis	6020B		1	591382	RKT	EET CLE	10/18/23 15:45
Total/NA	Analysis	9056A		1	591317	JWW	EET CLE	10/19/23 13:02
Total/NA	Analysis	9056A		5	591317	JWW	EET CLE	10/19/23 14:02
Total/NA	Analysis	SM 2540C		1	590981	QUY8	EET CLE	10/16/23 14:12

Client Sample ID: MW-16-02

Lab Sample ID: 240-193581-2

Date Collected: 10/09/23 13:35

Matrix: Water

Date Received: 10/13/23 18:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			590940	BN	EET CLE	10/16/23 14:00
Total Recoverable	Analysis	6010D		1	591127	KLC	EET CLE	10/18/23 01:07
Total Recoverable	Prep	3005A			590940	BN	EET CLE	10/16/23 14:00
Total Recoverable	Analysis	6020B		1	591382	RKT	EET CLE	10/18/23 15:47
Total/NA	Analysis	9056A		1	591317	JWW	EET CLE	10/19/23 05:39
Total/NA	Analysis	9056A		5	591317	JWW	EET CLE	10/19/23 05:59
Total/NA	Analysis	SM 2540C		1	590981	QUY8	EET CLE	10/16/23 14:12

Client Sample ID: MW-16-03

Lab Sample ID: 240-193581-3

Date Collected: 10/09/23 14:40

Matrix: Water

Date Received: 10/13/23 18:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			590940	BN	EET CLE	10/16/23 14:00
Total Recoverable	Analysis	6010D		1	591127	KLC	EET CLE	10/18/23 01:12
Total Recoverable	Prep	3005A			590940	BN	EET CLE	10/16/23 14:00
Total Recoverable	Analysis	6020B		1	591382	RKT	EET CLE	10/18/23 15:50
Total/NA	Analysis	9056A		1	591317	JWW	EET CLE	10/19/23 06:19
Total/NA	Analysis	9056A		5	591317	JWW	EET CLE	10/19/23 06:39
Total/NA	Analysis	SM 2540C		1	590981	QUY8	EET CLE	10/16/23 14:12

Client Sample ID: MW-16-04

Lab Sample ID: 240-193581-4

Date Collected: 10/09/23 15:40

Matrix: Water

Date Received: 10/13/23 18:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			590940	BN	EET CLE	10/16/23 14:00
Total Recoverable	Analysis	6010D		1	591127	KLC	EET CLE	10/18/23 01:16
Total Recoverable	Prep	3005A			590940	BN	EET CLE	10/16/23 14:00
Total Recoverable	Analysis	6020B		1	591382	RKT	EET CLE	10/18/23 15:52
Total/NA	Analysis	9056A		1	591317	JWW	EET CLE	10/19/23 06:59

Lab Chronicle

Client: TRC Environmental Corporation.
Job ID: 240-193581-1
Project/Site: CCR DTE Belle River Power

Client Sample ID: MW-16-04
Lab Sample ID: 240-193581-4
Date Collected: 10/09/23 15:40
Matrix: Water
Date Received: 10/13/23 18:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	591317	JWW	EET CLE	10/19/23 08:00
Total/NA	Analysis	SM 2540C		1	590981	QUY8	EET CLE	10/16/23 14:12

Client Sample ID: MW-16-09
Lab Sample ID: 240-193581-5
Date Collected: 10/10/23 09:19
Matrix: Water
Date Received: 10/13/23 18:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			590940	BN	EET CLE	10/16/23 14:00
Total Recoverable	Analysis	6010D		1	591127	KLC	EET CLE	10/18/23 01:21
Total Recoverable	Prep	3005A			590940	BN	EET CLE	10/16/23 14:00
Total Recoverable	Analysis	6020B		1	591382	RKT	EET CLE	10/18/23 15:54
Total/NA	Analysis	9056A		2	591317	JWW	EET CLE	10/19/23 08:20
Total/NA	Analysis	9056A		10	591317	JWW	EET CLE	10/19/23 08:40
Total/NA	Analysis	SM 2540C		1	590981	QUY8	EET CLE	10/16/23 14:12

Client Sample ID: DUP-01
Lab Sample ID: 240-193581-6
Date Collected: 10/09/23 00:00
Matrix: Water
Date Received: 10/13/23 18:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			590940	BN	EET CLE	10/16/23 14:00
Total Recoverable	Analysis	6010D		1	591127	KLC	EET CLE	10/18/23 01:34
Total Recoverable	Prep	3005A			590940	BN	EET CLE	10/16/23 14:00
Total Recoverable	Analysis	6020B		1	591382	RKT	EET CLE	10/18/23 15:57
Total/NA	Analysis	9056A		1	591317	JWW	EET CLE	10/19/23 09:00
Total/NA	Analysis	9056A		10	591317	JWW	EET CLE	10/19/23 09:20
Total/NA	Analysis	SM 2540C		1	590981	QUY8	EET CLE	10/16/23 14:12

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation.
Job ID: 240-193581-1
Project/Site: CCR DTE Belle River Power

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone (330) 497-9396 Phone (330) 497-0772

MICHIGAN 130

Chain of Custody Record

1.3/1.1 0.5/0.3 0.8/0.6

eurofins

Environment Testing

Client Information	Sampler	Lab PM	Carrier Tracking No(s)	COC No
Client Contact: Jacob Krenz	A. Whaley 734-210-9239	Brooks, Kris M		240-112842-40151.1
Company: TRC Environmental Corporation.	Phone	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin: MI	Page: Page 1 of 1
Address: 1540 Eisenhower Place	PWSID			Job #
City: Ann Arbor	Due Date Requested:			
State, Zip: MI, 48108-7080	TAT Requested (days): Standard			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	Compliance Project: Δ Yes Δ No			
Email: JKrenz@trccompanies.com	PO # 199489			
Project Name: CCR DTE Belle River Power	WO # 518728.0003			
Site: Michigan	Project # 24016463			
	SSOW#			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C_Calcd - TDS	6010B Bo, 6020 Ca, Fe	9056A_28D - Chloride, Fluoride and Sulfate	Total Number of containers	Special Instructions/Note:
Preservation Code:					X	X	N	D	N	X	
MW-16-01	10/9/23	1250	G	Water	N	N	X	X	X	3	
MW-16-02	10/9/23	1335	G	Water	N	N	X	X	X	3	
MW-16-03	10/9/23	1440	G	Water	N	N	X	X	X	3	
MW-16-04	10/9/23	1540	G	Water	N	N	X	X	X	3	
MW-16-09	10/10/23	0919	G	Water	N	N	X	X	X	3	
DUP-01	10/9/23	—	G	Water	N	N	X	X	X	3	
				Water							

240-193581 Chain of Custody

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

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

Deliverable Requested: I, II, III, IV, Other (specify) TRC EDD

Special Instructions/QC Requirements:

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		10-10-2023 1900	TRC		10/10/23	EEA
2		10/13/23 1310	EEA		10/13/23 800	EETNC
3		Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Ver: 01/16/2019

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client Trc Corporation Site Name _____ Cooler unpacked by: L Osborne

Cooler Received on 10/12/23 Opened on 10/13/23

FedEx: 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☒ See Multiple Cooler Form

IR GUN # 21 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?		
10. Were correct bottle(s) used for the test(s) indicated?	Yes	No
11. Sufficient quantity received to perform indicated analyses?	Yes	No
12. Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC316719
14. Were VOAs on the COC?	Yes	No
15. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes	No
17. Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

_____

_____

_____

_____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Eurofins - Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
(EC) Client Box Other	IR GUN #: 21	1.3	1.1	(Wet Ice) Blue Ice Dry Ice Water None
(EC) Client Box Other	IR GUN #: 21	0.5	0.3	(Wet Ice) Blue Ice Dry Ice Water None
(EC) Client Box Other	IR GUN #: 21	0.8	0.6	(Wet Ice) Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None

☐ See Temperature Excursion Form

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Coolers

1 2 3 4 5 6 7 8 9 10 11 12 13

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-01	240-193581-C-1	Plastic 500ml - with Nitric Acid	<2			
MW-16-02	240-193581-C-2	Plastic 500ml - with Nitric Acid	<2			
MW-16-03	240-193581-C-3	Plastic 500ml - with Nitric Acid	<2			
MW-16-04	240-193581-C-4	Plastic 500ml - with Nitric Acid	<2			
MW-16-09	240-193581-C-5	Plastic 500ml - with Nitric Acid	<2			
DUP-01	240-193581-C-6	Plastic 500ml - with Nitric Acid	<2			

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Vincent Buening
TRC Environmental Corporation.
1540 Eisenhower Place
Ann Arbor, Michigan 48108-7080

Generated 12/28/2023 6:53:04 PM

JOB DESCRIPTION

CCR DTE Belle River Bottom Ash Basins

JOB NUMBER

240-196739-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization

Generated
12/28/2023 6:53:04 PM

Authorized for release by
Kris Brooks, Project Manager II
Kris.Brooks@et.eurofinsus.com
(330)966-9790

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-196739-1
Project/Site: CCR DTE Belle River Bottom Ash Basins

Qualifiers

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

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

Job ID: 240-196739-1 Eurofins Cleveland

Job Narrative
240-196739-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/9/2023 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.2°C

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

Method Summary

Client: TRC Environmental Corporation.
Job ID: 240-196739-1
Project/Site: CCR DTE Belle River Bottom Ash Basins

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CLE

Protocol References:

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

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-196739-1
Project/Site: CCR DTE Belle River Bottom Ash Basins

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-196739-1	MW-16-02	Water	12/06/23 14:33	12/09/23 08:00
240-196739-2	DUP-01	Water	12/06/23 14:33	12/09/23 08:00

Detection Summary

Client: TRC Environmental Corporation.
Job ID: 240-196739-1
Project/Site: CCR DTE Belle River Bottom Ash Basins

Client Sample ID: MW-16-02
Lab Sample ID: 240-196739-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Sulfate	2.7		1.0		mg/L	1		9056A	Total/NA

Client Sample ID: DUP-01
Lab Sample ID: 240-196739-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Sulfate	3.0		1.0		mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation.
Job ID: 240-196739-1
Project/Site: CCR DTE Belle River Bottom Ash Basins

Client Sample ID: MW-16-02
Lab Sample ID: 240-196739-1
Date Collected: 12/06/23 14:33
Matrix: Water
Date Received: 12/09/23 08:00

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate (SW846 9056A)	2.7		1.0		mg/L			12/27/23 18:17	1

Client: TRC Environmental Corporation.
Job ID: 240-196739-1
Project/Site: CCR DTE Belle River Bottom Ash Basins

Client Sample ID: DUP-01
Lab Sample ID: 240-196739-2
Date Collected: 12/06/23 14:33
Matrix: Water
Date Received: 12/09/23 08:00

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate (SW846 9056A)	3.0		1.0		mg/L			12/27/23 18:38	1

Client: TRC Environmental Corporation.
Job ID: 240-196739-1
Project/Site: CCR DTE Belle River Bottom Ash Basins

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-598683/3
Matrix: Water
Analysis Batch: 598683

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.0	U	1.0		mg/L			12/27/23 11:25	1

Lab Sample ID: LCS 240-598683/4
Matrix: Water
Analysis Batch: 598683

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			50.0	50.6		mg/L		101	90 - 110		

QC Association Summary

Client: TRC Environmental Corporation.
Job ID: 240-196739-1
Project/Site: CCR DTE Belle River Bottom Ash Basins

General Chemistry

Analysis Batch: 598683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-196739-1	MW-16-02	Total/NA	Water	9056A	
240-196739-2	DUP-01	Total/NA	Water	9056A	
MB 240-598683/3	Method Blank	Total/NA	Water	9056A	
LCS 240-598683/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation.
Job ID: 240-196739-1
Project/Site: CCR DTE Belle River Bottom Ash Basins

Client Sample ID: MW-16-02
Lab Sample ID: 240-196739-1
Date Collected: 12/06/23 14:33
Matrix: Water
Date Received: 12/09/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		1	598683	JWW	EET CLE	12/27/23 18:17

Client Sample ID: DUP-01
Lab Sample ID: 240-196739-2
Date Collected: 12/06/23 14:33
Matrix: Water
Date Received: 12/09/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		1	598683	JWW	EET CLE	12/27/23 18:38

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-196739-1
Project/Site: CCR DTE Belle River Bottom Ash Basins

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

MICHIGAN 190

Chain of Custody Record

2-1|3-2 MICHIGAN 190

eurofins | Environment Testing

Client Information	Sampler:	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-114843-40724.1
Client Contact: Mr. Vincent Buening	Phone:	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: TRC Environmental Corporation.	PWSID:			Job #:
Address: 1540 Eisenhower Place	Due Date Requested:			
City: Ann Arbor	TAT Requested (days):			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: 199489			
Email: vbuening@trccompanies.com	WO #: 518728.0003			
Project Name: CCR DTE Belle River Bottom Ash Basins	Project #: 24016463			
Site: Michigan	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9056A_28D - Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
MW-16-02	12-6-23	1433	G	Water	N	N	X		
DUP-01	12-6-23	—	G	Water	N	N	X		

240-196739 Chain of Custody

MICHIGAN 190

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

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		12-8-23 / 0923	TRC		12/8/23 9130	EETA
2		12/8/23 9130	EETA		12-9-23	
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins – Cleveland Sample Receipt Form/Narrative
Barberton Facility

Login # : _____

Client TRC Site Name _____ Cooler unpacked by: M. Hou

Cooler Received on 12.9.23 Opened on 12.9.23

FedEx: 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # 22 Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 22 (CF 1.1 °C) Observed Cooler Temp. 2.1 °C Corrected Cooler Temp. 3.2 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____	Yes No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes No
-Were tamper/custody seals intact and uncompromised?	Yes No NA
3. Shippers' packing slip attached to the cooler(s)?	Yes No
4. Did custody papers accompany the sample(s)?	Yes No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes No
7. Did all bottles arrive in good condition (Unbroken)?	Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?	
10. Were correct bottle(s) used for the test(s) indicated?	Yes No
11. Sufficient quantity received to perform indicated analyses?	Yes No
12. Are these work share samples and all listed on the COC?	Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.	
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes No NA pH Strip Lot# HC316719
14. Were VOAs on the COC?	Yes No
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes No
17. Was a LL Hg or Me Hg trip blank present? _____	Yes No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Appendix C
Data Quality Reviews

Laboratory Data Quality Review
Groundwater Monitoring Event April 2023 (Detection Monitoring)
DTE Electric Company Belle River Power Plant (DTE BRPP)

Groundwater samples were collected by TRC for the April 2023 sampling event for the Bottom Ash Basins at the DTE BRPP. Samples were analyzed for anions, total metals, and total dissolved solids by Eurofins-Test America Laboratories, Inc. (Eurofins-TA), located in Barberton, Ohio. The laboratory analytical results are reported in laboratory report 240-184643-1.

During the April 2023 sampling event, a groundwater sample was collected from each of the following wells:

Bottom Ash Basins:

- MW-16-01
- MW-16-02
- MW-16-03
- MW-16-04
- MW-16-09

Each sample was analyzed for the following constituents:

Analyte Group	Method
Anions (Chloride, Fluoride, Sulfate)	SW846 9056A
Total Boron	SW846 3005A/6010D
Total Calcium and Iron	SW846 3005A/6020B
Total Dissolved Solids (TDS)	SM 2540C

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 Methods Data Review (USEPA, 2020). The following items were included in the evaluation of the data:

- 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 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 LCSs and/or LCSDs are used to assess the accuracy 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; and
- Overall usability of the data.

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.

- Appendix III constituents will be utilized for the purposes of a detection monitoring program.
- Data are usable for the purposes of the detection monitoring program.

QA/QC Sample Summary

- An equipment blank was not collected with this data set.
- Boron was detected in the method blank at 61.9 J µg/L. There is no adverse impact on the data usability due to this issue since boron concentrations were > 10x the method blank concentration in all groundwater samples in this data set.
- LCS recoveries for all target analytes were within laboratory control limits.
- MS/MSD analyses were not performed on a sample in this data set.
- Laboratory duplicate analysis was performed for TDS on sample MW-16-01. The relative percent difference (RPD) for TDS (47%) was above the acceptance criteria (20%); thus the positive results for TDS should be considered estimated in all groundwater samples in this data set, as summarized in the attached table, Attachment A.
- Field duplicate DUP-2 corresponds with MW-16-01; RPDs between the parent and field duplicate sample were within the QC limits with the following exception.
  - The RPD for TDS (54.2%) was >30. Therefore, the positive results for TDS should be considered estimated in all groundwater samples in this data set, as summarized in the attached table, Attachment A.

Attachment A

Summary of Data Non-Conformances for Groundwater Analytical Data

Belle River Power Plant CCR Bottom Ash Basins

China Township, Michigan

Samples	Collection Date	Analyte	Non-Conformance/Issue
MW-16-01	4/28/2023	Total Dissolved Solids	Field duplicate variability & laboratory duplicate variability (relative percent difference above criteria); potential uncertainty exists.
MW-16-02	4/28/2023		
MW-16-03	4/28/2023		
MW-16-04	4/28/2023		
MW-16-09	4/28/2023		
DUP-02	4/28/2023		

Laboratory Data Quality Review
Groundwater Monitoring Event October 2023 (Detection Monitoring)
DTE Electric Company Belle River Power Plant (DTE BRPP)

Groundwater samples were collected by TRC for the October 2023 sampling event for the Bottom Ash Basins at the DTE BRPP. Samples were analyzed for anions, total metals, and total dissolved solids by Eurofins Environment Testing, located in Barberton, Ohio. The laboratory analytical results are reported in laboratory report 240-193581-1 (Revision 1).

During the October 2023 sampling event, a groundwater sample was collected from each of the following wells:

Bottom Ash Basins:

- MW-16-01
- MW-16-02
- MW-16-03
- MW-16-04
- MW-16-09

Each sample was analyzed for the following constituents:

Analyte Group	Method
Anions (Chloride, Fluoride, Sulfate)	SW846 9056A
Total Boron	SW846 3005A/6010D
Total Calcium and Iron	SW846 3005A/6020B
Total Dissolved Solids (TDS)	SM 2540C

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 Methods Data Review (USEPA, 2020). The following items were included in the evaluation of the data:

- 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 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 LCSs and/or LCSDs are used to assess the accuracy 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; and
- Overall usability of the data.

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.

- Appendix III constituents will be utilized for the purposes of a detection monitoring program.
- Data are usable for the purposes of the detection monitoring program.

QA/QC Sample Summary

- A field blank and equipment blank were not collected with this data set.
- No analytes were detected in the associated method blanks.
- LCS recoveries for all target analytes were within laboratory control limits.
- MS/MSD analyses were performed on a sample MW-16-01 for anions. All criteria were met.
- Laboratory duplicate analysis was performed on sample MW-16-02 for TDS. All criteria were met.
- Samples DUP-1 and MW-16-03 were submitted as the field duplicate pair with this data set. All criteria were met.

Laboratory Data Quality Review
Groundwater Monitoring Event December 2023
(Detection Monitoring Verification)
DTE Electric Company Belle River Power Plant (DTE BRPP)

A groundwater sample was collected by TRC for the December 2023 sampling event for the Bottom Ash Basins at the DTE BRPP. The sample was analyzed for sulfate by Eurofins Environment Testing, located in Barberton, Ohio. The laboratory analytical results are reported in laboratory report 240-196739-1

During the December 2023 verification sampling event, a groundwater sample was collected from the following well:

Bottom Ash Basins:

- MW-16-02

The sample was analyzed for the following constituent:

Analyte Group	Method
Sulfate	SW846 9056A

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 Methods Data Review (USEPA, 2020). The following items were included in the evaluation of the data:

- 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, when collected. 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 LCSs and/or LCSDs are used to assess the accuracy 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; and
- Overall usability of the data.

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 constituent will be utilized for the purposes of a detection monitoring program.
- Data are usable for the purposes of the detection monitoring program.

QA/QC Sample Summary

- A field blank and equipment blank were not collected with this data set.
- Sulfate was not detected in the associated method blank.
- The LCS recovery for sulfate was within laboratory control limits.
- MS/MSD and laboratory duplicate analyses were not performed on a sample from this data set.
- Samples DUP-1 and MW-16-02 were submitted as the field duplicate pair with this data set. All criteria were met.