2022 Annual Groundwater Monitoring and Corrective Action Report

River Rouge Power Plant Bottom Ash Basin
Coal Combustion Residual Unit
1 Belanger Park Drive
River Rouge, Michigan

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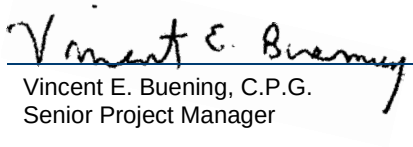

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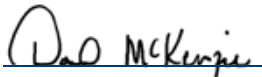

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Executive Summary

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) River Rouge Power Plant (RRPP) Bottom Ash Basin (BAB) 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 Report for calendar year 2022 activities at the RRPP BAB CCR unit. The RRPP BAB CCR unit continued to operate under the assessment monitoring program that was established on April 13, 2018 at the beginning of the annual monitoring period and remained in the assessment monitoring program through the 2022 reporting period as specified in §257.95. The statistical evaluation of the 2022 Appendix IV groundwater data continue to show statistically significant groundwater concentrations above the GWPS for arsenic at MW-16-01. Groundwater data collected through 2022 shows overall improvement in the lithium groundwater quality with lower confidence limits decreasing below the GWPS at MW-16-01. There were no other results reported at statistically significant concentrations above the GWPSs for the remaining Appendix IV parameters for either 2022 semiannual assessment monitoring event.

DTE Electric continued to collect groundwater samples to define the nature and extent of the potential release of CCR per §257.95(g)(1) in 2022. Concentrations of the Appendix IV parameters were below the GWPSs in all nature and extent wells located around the perimeter of the RRPP BAB, delineating the extent of the potential CCR groundwater release to be within the capture zone of the groundwater extraction system that has been operational from March 2, 2018 until September 15, 2022. Nature and extent groundwater monitoring results have remained at concentrations below the GWPSs following shutdown of the extraction system. All the monitoring data that have been collected and evaluated under §257.90 through §257.98 in 2022 are presented in this report.

DTE Electric proceeded with initiating an Assessment of Corrective Measures (ACM) per the CCR Rule by January 14, 2019, completed the initial ACM Report on April 15, 2019 and has completed Semi-Annual Progress Reports on the ongoing evaluations for remedy selection and design in accordance with §257.97a through 2022. Since the removal of CCR from the former BAB in 2020 and through the first semiannual monitoring period of 2022, arsenic at MW-16-01 was the only ongoing exceedance of the GWPS within the downgradient monitoring wells within the monitoring well network. In October 2022, DTE Electric revised the 2019 ACM to include additional innovative technology that was not considered in the initial ACM to address the persistent concentrations of arsenic at MW-16-01. As detailed in the October 2022 revised ACM, DTE Electric conducted a bench-scale treatability study in early 2022 using site groundwater and soil to evaluate two in-situ treatment options for removing arsenic from groundwater at the former RRPP BAB CCR unit and to potentially provide a final groundwater remedy for this site. Results from this bench-scale study indicated that zero valent iron (ZVI)

was effective at removing both arsenate and arsenite from site groundwater. In addition, application of ferrous sulfate and guar gum was successful at stimulating anaerobic bacteria and enhanced the reduction of arsenic from groundwater through biological processes.

On September 15, 2022, the groundwater collection system was shut down to allow the RRPP BAB CCR unit groundwater hydraulic and geochemistry conditions to stabilize prior to implementing an in-situ pilot test designed to confirm the findings of the bench-scale study. Beginning in late September 2022, DTE Electric commenced the in-situ pilot scale test centered on monitoring well MW-16-01 where elevated levels of arsenic have persisted during operation of the groundwater extraction system. This in-situ pilot test is scheduled to be completed in the second quarter of 2023.

In 2023 for the RRPP BAB CCR unit per §257.96(b), DTE Electric will continue semiannual assessment monitoring as specified in §257.95, along with annual nature and extent monitoring per §257.95(g)(1). Additionally in 2023, DTE Electric anticipates completing engineering evaluations for the final groundwater remedy with the final remedy for the RRPP BAB CCR unit and affected groundwater being formally selected per §257.97 at least 30-days after the public meeting required under §257.96(e) is held.

1.0 Introduction

On April 17, 2015, the United States Environmental Protection Agency (USEPA) published the final rule for the regulation and management of Coal Combustion Residuals (CCR) under the Resource Conservation and Recovery Act (RCRA) (the CCR Rule), 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) River Rouge Power Plant (RRPP) Bottom Ash Basin (BAB). 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 Report for calendar year 2022 activities at the RRPP BAB CCR unit (2022 Annual Report). Assessment monitoring is ongoing at the RRPP BAB CCR unit as specified in §257.95. Data that have been collected and evaluated under §257.90 through §257.98 in 2022 are presented in this report.

1.1 Program Summary

As documented in the January 31, 2018 *Annual Groundwater Monitoring Report for the River Rouge Power Plant* (TRC, January 2018), covering calendar year 2017 activities, DTE Electric noted that boron, fluoride, and pH were observed within groundwater at downgradient monitoring well(s) with statistically significant increases (SSIs) above background limits. Therefore, DTE Electric initiated an assessment monitoring program for the RRPP BAB CCR unit pursuant to §257.95 of the CCR Rule that included sampling and analyzing groundwater within the groundwater monitoring system for all constituents listed in Appendix IV.

The results from the assessment monitoring's initial sampling event were used to establish groundwater protection standards (GWPSs) for the Appendix IV constituents in accordance with §257.95(h), as presented in the October 15, 2018 *Assessment Monitoring Data Summary and Statistical Evaluation*. After the initial assessment monitoring sampling event, the monitoring system was sampled for the Appendix III and Appendix IV constituents in May 2018 (within 90 days from the initial Appendix IV sampling event) and in October 2018. Assessment monitoring data that was collected and evaluated in 2018 are presented in the *2018 Annual Groundwater Monitoring Report* (TRC, January 2019).

Results were reported above GWPSs for arsenic (monitoring well MW-16-01) and lithium (MW-16-01 and MW-16-02) during the initial assessment monitoring event for the groundwater samples collected in May 2018, and for arsenic in monitoring well MW-16-01 during the subsequent assessment monitoring event for the groundwater samples collected in October 2018. DTE Electric placed a notification of the initial assessment monitoring event exceedance into the operating record on November 14, 2018 as required by §257.95(g) and within the timeframe required by §257.105(h)(8). Nature and extent groundwater sampling defined the extent of the potential release of CCR to be well within the groundwater capture zone of the proactively constructed groundwater collection system that operated as an interim remedy from March 2, 2018 to September 15, 2022 to mitigate any potential risk of migration of groundwater

from the area of the (now former) RRPP BAB.

DTE Electric proceeded with initiating an assessment of corrective measures (ACM) per the CCR Rule by January 14, 2019. These included implementing activities to proactively manage the potential migration pathway, assessments of corrective measures and closure of the RRPP BAB through removal from 2019 through 2022 as described in Section 5.0 of this report.

This 2022 Annual Report presents the monitoring results and the statistical evaluation of the assessment monitoring parameters (Appendix IV to Part 257 of the CCR Rule) for the February and November/December 2022 assessment groundwater monitoring events for the RRPP BAB CCR unit. Assessment monitoring for these events was performed in accordance with the *CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company River Rouge Power Plant Bottom Ash Basin* (the QAPP) (TRC, July 2016; revised August 2017) and statistically evaluated per the *Groundwater Statistical Evaluation Plan – DTE Electric Company River Rouge Power Plant Coal Combustion Residual Bottom Ash Basin* (Stats Plan) (TRC, October 2017). During assessment monitoring, data are evaluated to identify Appendix IV constituents present at statistically significant levels exceeding a GWPS. In addition, nature and extent groundwater sampling data from existing monitoring wells around the BAB that was collected in November/December 2022 and a summary of an ongoing pilot test for an alternative groundwater remedy are presented in this report.

1.2 Site Overview

The RRPP BAB is located at 1 Belanger Park Drive, within the City of River Rouge in Wayne County, Michigan. The RRPP, including the BAB CCR unit, was originally constructed in the early 1950s, just northeast of the DTE Electric RRPP. The power plant property is located at the confluence of the Rouge River and the Detroit River.

The RRPP BAB was a sedimentation basin that was an incised CCR surface impoundment. The impoundment is sheet-piled around the perimeters to approximately 30 feet below ground surface (ft bgs) into the native soil. The BAB was used for receiving sluiced bottom ash and other process flow effluent pumped from the power plant to the eastern end of the BAB. After CCR removal was completed in September 2020, the former BAB was repurposed into a non-CCR process water pond. There is a sheet pile weir near the middle of the former BAB that maintains the water elevation in the eastern portion to approximately 577.5 feet through gravity flow. The water in the western portion of the former BAB is maintained at an elevation of no higher than 577 feet before being discharged into the Detroit River in accordance with a National Pollution Discharge Elimination System (NPDES) permit.

1.3 Geology/Hydrogeology

The RRPP BAB CCR unit is located immediately adjacent to the Rouge River to the northeast near the intersection of the Rouge River and Detroit River (Figure 1). The RRPP CCR unit is underlain initially by approximately 10 feet of surficial fill of various composition (gravel, sand, silt and clay, brick and/or concrete fragments). The fill is partially saturated in some areas, but is not continuously saturated across the RRPP property, does not represent a significant, usable source of water, and is, therefore, not an aquifer. An organic layer is often encountered

beneath the surficial fill that is then underlain by a silt/clay-rich unit that ranges from 3 to about 8 feet thick in the area of the BAB. Beneath the silt/clay-rich unit, there is a saturated sand and gravel unit that often coarsens from sand to gravel with depth. This coarse-grained sand and gravel unit is present from as shallow as 15 ft bgs to as deep as 25.5 ft bgs. This same coarse-grained unit is observed in most of the historical boring logs across the RRPP and appears to be a relatively continuous unit across the RRPP property. Based on this information, this coarse-grained sand and gravel unit represents the uppermost aquifer present at the RRPP BAB CCR unit.

The coarse-grained sand and gravel uppermost aquifer is underlain by a more than 60-foot-thick contiguous silty clay-rich deposit that serves as a natural lower confining hydraulic barrier that isolates the uppermost aquifer from the underlying Dundee limestone that represents the next aquifer. There is no apparent hydraulic connection between the uppermost aquifer and the Dundee limestone aquifer, and the limestone aquifer is artesian.

Historically, a definitive groundwater flow direction to the northeast with an average gradient of 0.00067 foot/foot (using data from June 2016 through September 2017) within the uppermost aquifer was evident around the RRPP BAB CCR unit, with potential groundwater flow rates within the uppermost aquifer ranging from approximately 5.8 to 73 feet/year. The installation and continual operation of the groundwater collection system extraction wells surrounding the basin between March 2018 and September 2022 had changed the natural groundwater flow regime near the basin to an inward gradient that extends to the edge of the Rouge River. The radius of influence extended beyond all CCR monitoring wells, with the exception of the upgradient monitoring well MW-17-07 that is a background well located more than 1,500 feet up hydraulic gradient of the RRPP BAB CCR unit.

Since the suspension of extraction well operations to allow for the completion of an in-situ pilot test as described in Section 5.0, the groundwater flow regime during the fourth quarter 2022 is now similar to what was seen before the groundwater extraction system was put into operation. There is a much lower groundwater hydraulic gradient/flow to the northeast though the center of the site towards the Rouge River with components of groundwater flow east towards the Detroit River along the east boundary and offsite to the northwest along the west boundary. The well layout is shown on Figure 2.

2.0 Groundwater Monitoring

2.1 Monitoring Well Network

A groundwater monitoring system has been established for the RRPP BAB CCR unit as detailed in the *Groundwater Monitoring System Summary Report – DTE Electric Company River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit* (GWMS Report) (TRC, October 2017). The monitoring well network for the BAB CCR unit currently consists of five monitoring wells that are screened in the uppermost aquifer. The monitoring well locations are shown on Figure 2. Monitoring wells MW-17-06 and MW-17-07 are located south-southwest of the RRPP BAB and provide data on background groundwater quality that has not been affected by the CCR unit (total of two background wells). Monitoring wells MW-16-01 through MW-16-03 are located north-northeast, historically downgradient of the RRPP BAB CCR unit (total of three downgradient monitoring wells).

As shown on Figure 2, monitoring well MW-16-04S is used for water level measurements only. MW-16-04S was originally installed as a potential background monitoring well. However, based on concentrations of several Appendix III parameters, the proximity of the well to the BAB and the hydrogeology of the area, monitoring well MW-16-04S did not appear to be representative of background groundwater conditions; therefore, this well was excluded from the background monitoring network. As such, in June 2017, two additional monitoring wells (MW-17-06 and MW-17-07) were installed in the uppermost aquifer further upgradient on the southwest side of the RRPP main building for use as background wells (Figure 2).

In addition, eleven groundwater recovery wells were installed as part of a groundwater extraction system (Figure 2) and additional monitoring wells were added to evaluate the groundwater extraction system groundwater capture (Figure 2) in 2018. Although the groundwater extraction system did change groundwater flow significantly in the RRPP BAB CCR unit since beginning operation in early March 2018, the three compliance monitoring wells (MW-16-01 through MW-16-03) were still appropriately positioned to evaluate groundwater quality in the vicinity of the RRPP BAB CCR unit. However, while the groundwater extraction system was operational, inward hydraulic gradients were maintained toward the extraction wells and the RRPP BAB CCR unit. Therefore, monitoring wells (MW-16-01 through MW-16-03) were not immediately downgradient of the RRPP BAB CCR unit when the groundwater extraction system was operational. Rather, they were on the upgradient edge of the groundwater capture zone on the downgradient side of the RRPP BAB CCR unit, adjacent to the Rouge River (Figures 3). However, during the suspension of extraction well operations during the late third quarter 2022 the natural groundwater flow regime reestablished itself and monitoring wells (MW-16-01 through MW-16-03) are positioned downgradient of the former RRPP BAB CCR unit, adjacent to the Rouge River (Figure 4).

2.2 Semiannual Assessment Groundwater Monitoring

Per §257.95(d), all wells in the CCR unit monitoring program must be sampled at least semiannually. One semiannual event must include analysis for all parameters from Appendix III and Appendix IV and one semiannual event may include analysis for all Appendix III indicator parameters and those Appendix IV parameters that were detected during prior sampling. In

addition to the Appendix III and IV parameters, field parameters including pH, dissolved oxygen, oxidation reduction potential, specific conductivity, temperature, and turbidity were collected at each well. Samples were collected and analyzed in accordance with the QAPP.

2.2.1 Data Summary

The first semiannual groundwater assessment monitoring event for 2022 was performed on February 22, 2022 and the second semiannual groundwater assessment monitoring event was performed on November 30 and December 1, 2022. Both events were performed 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 monitoring well locations in addition to surface water measuring points MP-01, MP-03, and MP-04 established along the Rouge River and Detroit River (Figure 2). Groundwater samples were collected from the two background monitoring wells and three downgradient monitoring wells for the Appendix III and Appendix IV parameters and field parameters. A summary of the groundwater data collected during both the February 2022 and November/December 2022 events are provided on Table 1 (static groundwater elevation data), Table 2 (field data), and Table 3 (analytical results). The laboratory analytical reports are included in Appendix A.

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 B.

2.2.3 Groundwater Flow Rate and Direction

Groundwater elevation data collected during the February 2022 sampling event shows the groundwater within the uppermost aquifer in the vicinity of the RRPP BAB is being captured by the groundwater extraction well system. Similar to the groundwater sampling events reported in the 2019, 2020 and 2021 annual reports (TRC, January 2020, January 2021 and January 2022, respectively), the series of eleven extraction wells surrounding the basin creates an inward gradient that extends to the edge of the river. The radius of influence extended beyond all CCR monitoring wells with the exception of MW-17-07 that is a background well located more than 1,500 feet up hydraulic gradient of the RRPP BAB CCR unit. Additionally, during the February 2022 event there is an eastern groundwater flow component on the southeast edge of the site toward the Detroit River (from MW-17-07 to the Detroit River).

Groundwater elevation data collected during the November/December 2022 event show that the groundwater flow regime has re-equilibrated to pre-pumping conditions, prior to when the groundwater extraction system was put into operation, following the suspension of extraction well operations to allow for the completion of the aforementioned in-situ pilot test. As a result, the groundwater hydraulic gradient and flow rate are much lower than they were under pumping conditions. In general, groundwater flow is to the northeast through the center of the RRPP BAB CCR unit towards the Rouge River with components flowing east towards the Detroit River along the east boundary and offsite to the northwest along the west property

boundary. Groundwater elevations measured across the Site during the February and November/December 2022 sampling events are provided on Table 1 and were used to construct groundwater contour maps (Figures 3 and 4, respectively).

The average hydraulic gradients throughout the RRPP BAB CCR unit during the February and November/December 2022 events show a hydraulic gradient of approximately 0.0056 ft/ft during the February event and 0.00023 ft/ft during the November/December 2022 event. The gradients were calculated using the well pairs MW-17-06/MW-16--04S and MW-17-07/MW-17-06. Using the aforementioned low hydraulic conductivity of 9.5 feet/day and high hydraulic conductivity of 120 feet/day, and an assumed effective porosity of 0.4, the estimated groundwater flow velocity ranges from approximately 0.13 feet/day (approximately 49 feet/year) to approximately 1.7 feet/day (approximately 610 feet/year) during the February 2022 event when the groundwater extraction system was still in operation and approximately 0.0055 feet/day (approximately 2.0 feet/year) to approximately 0.069 feet/day (approximately 25 feet/year) during the November/December 2022 event after the groundwater extraction system had been shut down.

3.0 Statistical Evaluation

Assessment monitoring is continuing at the RRPP BAB CCR unit while corrective measures are further evaluated in accordance with §257.96 and §257.97 as outlined in the ACM. The following section summarizes the statistical approach applied to assess the 2022 groundwater data in accordance with the assessment monitoring program. The statistical evaluation details are provided in Appendix C (Appendix IV Assessment Monitoring Statistical Evaluation – February 2022) and Appendix D (Appendix IV Assessment Monitoring Statistical Evaluation – November/December 2022).

3.1 Establishing Groundwater Protection Standards

The Appendix IV GWPSs are used to determine whether groundwater has been impacted from the RRPP BAB CCR unit by statistically comparing concentrations in the assessment monitoring wells to their respective GWPS for each Appendix IV parameter. In accordance with §257.95(h) and the Stats Plan, GWPSs were established for the Appendix IV parameters following the preliminary assessment monitoring event using nine rounds of data collected from the background monitoring wells MW-17-06 and MW-17-07 (July 2017 through April 2018). The calculation of the GWPSs is documented in the *Assessment Monitoring Data Summary and Statistical Evaluation* (Initial Assessment Monitoring Statistical Evaluation Memo) (TRC, October 2018a). The GWPS is established as the higher of the USEPA Maximum Contaminant Level (MCL) or statistically derived background level for constituents with MCLs and the higher of the USEPA Regional Screening Levels (RSLs) or background level for constituents with RSLs.

3.2 Data Comparison to Groundwater Protection Standards – First Semiannual Event (February 2022)

Consistent with the *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (Unified Guidance) (USEPA, 2009), the preferred method for comparisons to a fixed standard are confidence limits. An exceedance of the standard occurs when the 99 percent lower confidence level of the downgradient data exceeds the GWPS. Confidence intervals were established per the statistical methods detailed in the *Appendix IV Assessment Monitoring Statistical Evaluation for February 2022* technical memorandum provided in Appendix C.

For each detected constituent, the concentrations for each well were first compared directly to the GWPS. Parameter-well combinations that included a direct exceedance of the GWPS were retained for further statistical analysis using confidence limits as detailed in the Appendix C technical memorandum. The calculated upper and lower confidence limits and comparison of the lower confidence limits to the GWPSs are provided in Table 4 for the February 2022 event.

The statistical evaluation of the February 2022 Appendix IV parameters shows continued statistical exceedances of the GWPSs for:

- Arsenic at MW-16-01.

Lithium concentrations in groundwater at monitoring well MW-16-01 show a decrease, with the lower confidence limit below the GWPS during the first semiannual event. No other constituents were observed at statistically significant levels exceeding the Appendix IV GWPSs during the February 2022 assessment monitoring event.

3.3 Data Comparison to Groundwater Protection Standards – Second Semiannual Event (November/December 2022)

Statistical analysis for the second semiannual monitoring event was performed using the same approach as the initial assessment monitoring statistical evaluation as discussed in the *Appendix IV Assessment Monitoring Statistical Evaluation for November and December 2022* technical memorandum provided in Appendix D. The calculated upper and lower confidence limits and comparison of the lower confidence limits to the GWPSs for the November/December 2022 event are provided in Table 5.

The statistical evaluation of the November/December 2022 Appendix IV parameters shows continued results above GWPS for:

- Arsenic at MW-16-01.

A decrease in arsenic concentrations was observed at MW-16-01 during the November/December event where arsenic is below the GWPS using direct comparison to the standard. Lithium concentrations in groundwater at monitoring well MW-16-01 increased slightly following the suspension of the extraction system operation and the initiation of the in-situ pilot test in September 2022. However, the lower confidence limit for lithium at MW-16-01 during the second semiannual statistical evaluation is below the GWPS. No other constituents were observed at statistically significant levels exceeding the Appendix IV GWPSs during the November/December 2022 assessment monitoring event.

4.0 Nature and Extent Groundwater Evaluation

4.1 Nature and Extent Groundwater Sampling

Per §257.95(g)(1), in the event that the facility determines, pursuant to §257.93(h), that there is a statistically significant exceedance of the GWPSs for one or more of the Appendix IV constituents, the facility must characterize the nature and extent of the release of CCR as well as any site conditions that may affect the remedy selected. As such, nature and extent groundwater sampling was completed on November 30 and December 1, 2022, by TRC personnel from existing CCR network monitoring wells and the nature and extent monitoring wells installed in 2018.

DTE collected groundwater elevation data at all site monitoring wells shown on Figure 4. In addition, DTE collected groundwater samples at monitoring wells MW-16-04S, MW-17-05, MW-17-14, MW-17-15, MW-17-18, and MW-17-20. Field parameters were stabilized at each monitoring well prior to collecting groundwater samples. Field parameters are summarized in Table 2. Groundwater samples were analyzed by Eurofins for the Appendix III constituents and detected Appendix IV parameters. A summary of the analytical groundwater data collected during the November/December 2022 nature and extent sampling event is provided on Table 6. The laboratory analytical reports are included in Appendix A.

Following the second semiannual assessment monitoring sampling event for 2022, the nature and extent well data for the RRPP BAB collected since 2018 were evaluated using confidence interval analysis in accordance with the Stats Plan as detailed in Appendix C. Concentrations of previously detected Appendix IV parameters continue to decrease following closure of the BAB such that all of the previously detected Appendix IV parameters remain below the GWPSs in all analyzed nature and extent samples collected for the RRPP BAB CCR unit in 2022. Statistical analysis further confirms that there are no statistically significant concentrations present above the GWPS in any of the nature and extent wells when considering the most recent four monitoring events. In addition, all of the land that overlies the potentially affected groundwater is owned by DTE Electric.

5.0 Corrective Action and Evaluation of Corrective Measures

According to §257.95(g)(3), in the event that the facility determines, pursuant to §257.93(h), that a result is reported above GWPSs for one or more of the Appendix IV constituents, the facility will, within 90 days of performing the statistical analysis, initiate an assessment of corrective measures to prevent further releases, to remediate any releases, and to restore affected area to original conditions. The Assessment of Corrective Measures (ACM) must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances.

Although DTE Electric proceeded with initiating an ACM per §257.96 by January 14, 2019, DTE Electric has been proactively managing the potential groundwater migration pathway. DTE Electric's initial management strategy was to operate a groundwater extraction system to mitigate any risk of migration of CCR constituents from the RRPP BAB to groundwater. This system was constructed during January and February 2018, began operation in early March 2018, was operational through September 15, 2022, and effectively captured CCR-affected groundwater in the vicinity of the RRPP BAB in that time period. As discussed below, the groundwater system was shut down to allow the hydraulic and geochemistry conditions in groundwater to stabilize prior to implementing an in-situ pilot test in late September 2022.

DTE Electric completed the initial ACM Report on April 15, 2019 and completed Semi-Annual Progress Reports on the remedy selection and design in accordance with §257.97a through 2022. The preferred alternative in the ACM was to close the RRPP BAB by CCR removal with offsite CCR disposal and to address the CCR-affected groundwater by continuing to operate the already in-place interim groundwater collection system. However, with the completion of source removal activities in 2020 (see next paragraph), and ongoing performance monitoring, the final remedy is still being evaluated.

The RRPP BAB CCR unit Closure Plan was updated in July 2020 (TRC, July 2020). In accordance with §257.101(a)(1), closure for the River Rouge BAB CCR unit was initiated 30-days after the last known receipt of waste. The RRPP ceased coal fired operations in May 2020 and the BAB closure by CCR removal was completed with construction equipment mobilization occurring in June 2020, and CCR removal occurring from July through September 2020 as documented in the *Bottom Ash Basin Closure Certification Report DTE Electric Company River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit, 1 Belanger Park Drive, River Rouge, Michigan* (TRC, November 2020, Revised February 2021). After CCR removal was completed, the former BAB was repurposed into a non-CCR process water pond.

Since the removal of CCR through the first semiannual monitoring period of 2022 arsenic at MW-16-01 was the only ongoing exceedance of the GWPS within the downgradient monitoring wells within the monitoring well network. In October 2022, DTE Electric revised the 2019 ACM to include additional innovative technology that was not considered in the initial ACM to address the persistent concentrations of arsenic at MW-16-01. As detailed in an October 2022 ACM update (TRC, October 4, 2022), DTE Electric conducted a bench-scale treatability study in early 2022 using site groundwater and soil to evaluate two in-situ treatment options for removing arsenic from groundwater at the former RRPP BAB CCR unit and to potentially provide a final

groundwater remedy for this site. These included: (1) zero-valent iron (ZVI), and (2) a solution of guar gum and ferrous sulfate. Results from this study indicated that ZVI was effective at removing both arsenate and arsenite from site groundwater. In addition, application of ferrous sulfate and guar gum was successful at stimulating anaerobic bacteria and enhanced the reduction of arsenic from groundwater through biological processes.

On September 15, 2022, the groundwater collection system was shut down to allow the RRPP BAB CCR unit groundwater hydraulic and geochemistry conditions to stabilize prior to implementing an in-situ pilot test. Beginning in late September 2022, DTE Electric commenced an in-situ pilot scale test centered on monitoring well MW-16-01 where elevated levels of arsenic have persisted during operation of the groundwater extraction system. This pilot test is being completed to confirm that the findings from the bench scale testing, namely the in-place immobilization of arsenic by injection of specific reagents, can be replicated in the field and subsequently scaled up for full implementation as an alternative to continued operation of the groundwater extraction system. The in-situ pilot study is scheduled to be completed in the second quarter of 2023.

Once engineering evaluations for the final groundwater remedy are completed, the final remedy for the RRPP BAB CCR unit and affected groundwater will be formally selected per §257.97 at least 30-days after the public meeting required under §257.96(e) is held.

6.0 Conclusions and Recommendations

In 2022, the semiannual assessment monitoring and annual nature and extent groundwater sampling continued, showing that there are no new constituents observed at statistically significant levels exceeding the Appendix IV GWPSs during the 2022 reporting period.

In 2023 for the RRPP BAB CCR unit per §257.96(b), DTE Electric will continue semiannual assessment monitoring as specified in §257.95, along with annual nature and extent monitoring per §257.95(g)(1). Additionally in 2023, DTE Electric anticipates completing engineering evaluations for the final groundwater remedy with the final remedy for the RRPP BAB CCR unit and affected groundwater being formally selected per §257.97 at least 30-days after the public meeting required under §257.96(e) is held.

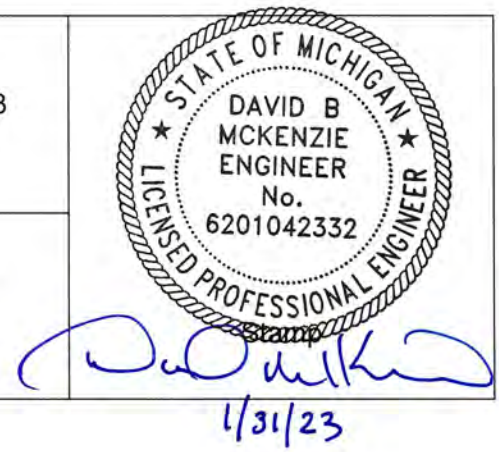
5.0 Groundwater Monitoring Report Certification

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
Sibley Quarry Coal Combustion Residual Landfill
Trenton, Michigan

CERTIFICATION

I hereby certify that the annual groundwater and corrective action report presented within this document for the SQLF 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, 2023	
Company: TRC Engineers Michigan, Inc.	Date: January 31, 2023	1/31/23

8.0 References

TRC. August 2016; Revised March and August 2017. CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company River Rouge Power Plant Bottom Ash Basin, 1 Belanger Park Drive, River Rouge, Michigan. Prepared for DTE Electric Company.

TRC. October 2017. Groundwater Monitoring System Summary Report – DTE Electric Company River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit, 1 Belanger Park Drive, River Rouge, Michigan. Prepared for DTE Electric Company.

TRC. October 2017; Revised December 2017. Groundwater Statistical Evaluation Plan – River Rouge Power Plant Coal Combustion Residual Bottom Ash Basin, 1 Belanger Park Drive, River Rouge, Michigan. Prepared for DTE Electric Company.

TRC. January 2018. Annual Groundwater Monitoring Report, DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit, prepared for DTE Electric Company. TRC Environmental Corporation. January 2019.

TRC. October 15, 2018(a). Assessment Monitoring Data Summary and Statistical Evaluation, DTE Electric Company, River Rouge Power Plant Bottom Ash Basin CCR Unit, River Rouge, Michigan, letter report prepared for DTE Electric Company.

TRC. October 15, 2018(b). Appendix IV Assessment Monitoring Statistical Evaluation, DTE Electric Company, River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit, technical memorandum prepared for DTE Electric Company.

TRC. January 2019. 2018 Annual Groundwater Monitoring Report, DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit, prepared for DTE Electric Company.

TRC. January 31, 2019. October 2018 Appendix IV Assessment Monitoring Statistical Evaluation, DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit, technical memorandum prepared for DTE Electric Company.

TRC. April 15, 2019, Revised October 4, 2022. Assessment of Corrective Measures Report, DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit, prepared for DTE Electric Company.

TRC. October 15, 2019. Semi-Annual Progress Report – Remedy Selection and Design, DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit, prepared for DTE Electric Company.

TRC. December 16, 2019. Federal CCR Rule – Notice of Alternative Closure Per 40CFR 257.103(b) Letter, DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit, prepared for DTE Electric Company.

TRC. January 2020. 2019 Annual Groundwater Monitoring and Corrective Action Report, DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit, prepared for DTE Electric Company.

TRC. April 15, 2020. Semi-Annual Progress Report – Remedy Selection and Design, Rouge Power Plant Coal Combustion Residual Unit Bottom Ash Basin, River Rouge, Michigan, prepared for DTE Electric Company.

TRC. July 2020. Updated Closure Plan for Existing CCR Surface Impoundment - DTE Electric Company River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit, 1 Belanger Park Drive, River Rouge, Michigan, prepared for DTE Electric Company.

TRC. October 15, 2020. Semi-Annual Progress Report – Remedy Selection and Design, Rouge Power Plant Coal Combustion Residual Unit Bottom Ash Basin, River Rouge, Michigan, prepared for DTE Electric Company.

TRC. January 2021. 2020 Annual Groundwater Monitoring and Corrective Action Report, DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit, prepared for DTE Electric Company.

TRC. April 15, 2021. Semi-Annual Progress Report – Remedy Selection and Design, Rouge Power Plant Coal Combustion Residual Unit Bottom Ash Basin, River Rouge, Michigan, prepared for DTE Electric Company.

TRC. October 15, 2021. Semi-Annual Progress Report – Remedy Selection and Design, Rouge Power Plant Coal Combustion Residual Unit Bottom Ash Basin, River Rouge, Michigan, prepared for DTE Electric Company.

TRC. January 2022. 2021 Annual Groundwater Monitoring and Corrective Action Report, DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit, prepared for DTE Electric Company.

TRC. April 15, 2022. Semi-Annual Progress Report – Remedy Selection and Design, Rouge Power Plant Coal Combustion Residual Unit Bottom Ash Basin, River Rouge, Michigan, prepared for DTE Electric Company.

TRC. October 14, 2022. Semi-Annual Progress Report – Remedy Selection and Design, Rouge Power Plant Coal Combustion Residual Unit Bottom Ash Basin, River Rouge, Michigan, prepared for DTE Electric Company.

TRC. November 2020. Bottom Ash Basin Closure Certification Report DTE Electric Company River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit, 1 Belanger Park Drive, River Rouge, Michigan, prepared for DTE Electric Company.

TRC. August 2022. State of Michigan Part 115 Assessment of Corrective Measures River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit, 1 Belanger Park Drive, River Rouge, Michigan, prepared for DTE Electric Company.

USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. Office of Conservation and Recovery. EPA 530/R-09-007.

USEPA. April 2015. 40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule. 80 Federal Register 74 (April 17, 2015), pp. 21301-21501 (80 FR 21301).

USEPA. July 2018. 40 CFR Part 257. Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Amendments to the National Minimum Criteria (Phase One, Part One); Final Rule. 83 Federal Register 146 (July 30, 2018), pp. 36435-36456 (83 FR 36435).

USEPA. April 2018. Barnes Johnson (Office of Resource Conservation and Recovery) to James Roewer (c/o Edison Electric Institute) and Douglas Green, Margaret Fawal (Venable LLP). Re: Coal Combustion Residuals Rule Groundwater Monitoring Requirements. April 30, 2018. United States Environmental Protection Agency, Washington, D.C. 20460. Office of Solid Waste and Emergency Response, now the Office of Land and Emergency Management.

Tables

Table 1
Summary of Groundwater Elevation Data – February and November 2022
River Rouge Power Plant Bottom Ash Basins – RCRA CCR Monitoring Program
River Rouge, Michigan

Well ID	Date Installed	Reference Elevation	Geologic Unit of Screened Interval	Screened Interval Elevation	2/22/2022		11/30/2022	
					Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation
				ft	ft BTOC	ft	ft BTOC	ft
MP-01	6/23/2016	579.25[1]	NA	NA	NM[2]		3.05	576.20
MP-03	6/20/2017	578.42[1]	NA	NA	4.20	574.22	NM[4]	
MP-04	6/20/2017	579.17[1]	NA	NA	5.10	574.07	6.15	573.02
MW-16-01	6/13/2016	583.02	Sand/Silty Clay/Gravel	562.0 to 557.0	13.85	569.17	9.23	573.79
MW-16-02	6/20/2017	582.79	Silty Sand/Sand/Clay/Gravel	561.4 to 556.4	10.64	572.15	9.44	573.35
MW-16-03	6/10/2016	582.75	Sand with Gravel	561.4 to 556.4	12.29	570.46	9.63	573.12
MW-16-04S	3/17/2016	582.41	Sand and Gravel	561.2 to 556.2	14.02	568.39	7.92	574.49
MW-17-01	6/7/2017	578.47	Sand/Silty Sand	558.0 to 563.0	NM[3]		4.05	574.42
MW-17-02	6/7/2017	581.24	Sand	553.8 to 558.8	6.23	575.01	8.28	572.96
MW-17-03	6/8/2017	580.20	Sand/Gravel with Sand/Clay	552.5 to 557.5	5.68	574.52	7.24	572.96
MW-17-04	6/8/2017	578.01	Sand	553.5 to 558.5	3.93	574.08	4.91	573.10
MW-17-05	6/9/2017	581.61	Sand/Silty Sand with Gravel	553.6 to 558.6	15.14	566.47	7.31	574.30
MW-17-06	6/7/2017	583.01	Silty Sand/Gravel with Sand	559.9 to 554.9	8.88	574.13	7.90	574.68
MW-17-07	6/14/2017	583.05	Silt with Sand/Clay	564.0 to 559.0	6.45	576.60	8.20	574.85
MW-17-08	6/12/2017	580.52	Clay/Sand/Gravel	553.0 to 558.0	6.70	573.82	7.20	573.32
MW-17-09	6/13/2017	581.05	Clay/Sand/Gravel with Sand	553.6 to 558.6	6.78	574.27	7.57	573.48
MW-17-10	6/13/2017	581.41	Silty Sand/Clay/Sand	555.7 to 560.7	5.89	575.52	7.41	574.00
MW-17-12	12/12/2017	580.51	Silty Sand/Gravel with Sand	555.5 to 560.5	9.51	571.00	5.87	574.64
MW-17-13	12/6/2017	578.90	Silty Sand/Clay/Gravel with Sand	555.9 to 560.9	NM[3]		4.60	574.22
MW-17-14	12/7/2017	579.35	Clay/Gravel with Sand	554.9 to 559.9	NM[2]		5.22	574.13
MW-17-15	12/8/2017	579.75	Silty Sand/Clay/Gravel with Sand	556.0 to 561.0	NM[3]		5.50	574.25
MW-17-16	12/7/2017	579.73	Sand with Silt/Clay with Silt/Gravel with Sand	558.2 to 567.2	9.42	570.31	6.26	573.47
MW-17-17	12/11/2017	579.35	Silty Sand/Sand with Gravel	557.8 to 562.8	8.00	571.35	5.64	573.71
MW-17-18	12/8/2017	579.00	Sand and Clay	557.7 to 562.7	10.80	568.20	4.50	574.50
MW-17-19	12/11/2017	577.99	Sand and Clay	551.4 to 556.4	6.22	571.77	3.98	574.01
MW-17-20	12/12/2017	579.40	Clay/Sand/Gravel with Sand	555.1 to 560.1	9.95	569.45	4.88	574.52

Notes:

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

ft BTOC - feet below top of casing

NA - not applicable

NM - not measured due to frozen conditions, flooded well, insufficient water, or damaged well.

1) Elevation represents the point of reference used to collect surface water level measurements.

2) Monitoring well or measuring point not measured due to frozen conditions.

3) Monitoring well not measured due to flooded well protective cover.

4) Measuring point was dry during the November 2022 sampling event.

Table 2
Summary of Groundwater Field Data – February and November/December 2022
River Rouge Power Plant Bottom Ash Basin – RCRA CCR Monitoring Program
River Rouge, Michigan

Sample Location	Sample Date	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	pH (SU)	Specific Conductivity (umhos/cm)	Temperature (deg C)	Turbidity (NTU)
Background							
MW-17-06	2/22/2022	1.14	-98.7	6.8	4,000	13.60	10.90
	12/1/2022	1.04	-38.2	6.5	2,786	14.90	5.37
MW-17-07	2/22/2022	1.20	-87.1	6.8	9,470	11.90	11.10
	12/1/2022	1.20	-34.6	6.5	7,716	12.80	5.91
Downgradient							
MW-16-01	2/22/2022	1.20	-148.8	7.4	538	12.70	5.69
	12/1/2022	0.00	-136.4	6.6	2,188	12.10	11.05
MW-16-02	2/22/2022	1.23	-143.7	7.4	555	12.80	3.51
	12/1/2022	0.06	-100.1	7.4	524	12.30	4.27
MW-16-03	2/22/2022	1.28	-109.0	7.3	560	12.90	3.62
	11/30/2022	1.30	-79.1	7.3	374	11.30	3.50
MW-16-04S	12/1/2022	1.17	12.4	7.4	1,171	11.90	4.67
MW-17-05	11/30/2022	1.06	13.7	6.9	1,048	12.00	2.23
MW-17-14	12/1/2022	1.14	43.7	6.7	2,574	12.90	2.15
MW-17-15	11/30/2022	2.46	8.9	8.6	834	12.40	35.10
MW-17-18	11/30/2022	1.05	-25.6	6.7	2,037	13.10	4.92
MW-17-20	11/30/2022	1.05	-18.8	6.5	3,571	12.50	2.24

Notes:

mg/L -Milligrams per Liter.

mV - Millivolts.

SU - Standard Units.

umhos/cm - Micromhos per centimeter.

°C - Degrees Celsius.

NTU - Nephelometric Turbidity Unit

Table 3
Summary of Groundwater Analytical Data – February and November/December 2022
River Rouge Power Plant Bottom Ash Basin – RCRA CCR Monitoring Program
River Rouge, Michigan

					Sample Location:	MW-17-06		MW-17-07		MW-16-01		MW-16-02		MW-16-03	
					Sample Date:	2/22/2022	12/1/2022	2/22/2022	12/1/2022	2/22/2022	12/1/2022	2/22/2022	12/1/2022	2/22/2022	11/30/2022
Constituent	Unit	EPA MCL	EPA RSL	UTL	GWPS	Background				Downgradient					
Appendix III															
Boron	ug/L	NC	NA	NA	NA	350	390	530	550	530	1300	330	200	87	110
Calcium	ug/L	NC	NA	NA	NA	320,000	270,000	570,000	410,000	57,000	360,000	62,000	60,000	59,000	60,000
Chloride	mg/L	250*	NA	NA	NA	740	490	2,300	2,400	43	52	46	42	45	39
Fluoride	mg/L	4	NA	NA	NA	0.89	0.31	< 0.2	0.42	1.4	0.49	0.54	0.4	0.31	0.28
pH, Field	su	6.5 - 8.5*	NA	NA	NA	6.8	6.5	6.8	6.5	7.4	6.6	7.4	7.4	7.3	7.3
Sulfate	mg/L	250*	NA	NA	NA	360	500	1,300	1,400	0.34	1,800	0.4	30	1.3	< 1
Total Dissolved Solids	mg/L	500*	NA	NA	NA	2,400	2,000	6,400	6,200	330	2,800	290	300	310	280
Appendix IV															
Antimony	ug/L	6	NA	2.0	6	< 3	--	< 3	--	< 3	--	< 3	--	< 3	--
Arsenic	ug/L	10	NA	32	**32**	16	12	**98**	17	**140**	28	2.4	< 5	0.36	< 5
Barium	ug/L	2,000	NA	150	2,000	130	110	54	29	110	280	27	40	28	24
Beryllium	ug/L	4	NA	1.0	4	< 1	--	< 1	--	< 1	--	< 1	--	< 1	--
Cadmium	ug/L	5	NA	1.0	5	< 0.5	< 1	0.17	< 1	< 0.5	< 1	< 0.5	< 1	< 0.5	< 1
Chromium	ug/L	100	NA	2.0	100	< 5	< 2	6.5	< 2	< 5	< 2	< 5	< 2	< 5	< 2
Cobalt	ug/L	NC	6	23	23	0.82	< 1	8	6.6	< 1	< 1	< 1	< 1	< 1	< 1
Fluoride	mg/L	4	NA	1.3	4	0.89	0.31	< 0.2	0.42	1.4	0.49	0.54	0.4	0.31	0.28
Lead	ug/L	NC	15	1.0	15	< 0.5	< 1	4.2	< 1	< 0.5	< 1	< 0.5	< 1	< 0.5	< 1
Lithium	ug/L	NC	40	34	**40**	21	19	26	25	40	**75**	16	11	7.9	< 8
Mercury	ug/L	2	NA	0.20	2	--	< 0.2	--	< 0.2	--	< 0.2	--	< 0.2	--	< 0.2
Molybdenum	ug/L	NC	100	22	100	8.7	8.2	21	13	2.9	14	< 5	< 5	< 5	< 5
Radium-226	pci/L	NC	NA	NA	NA	1.11	0.688	1.44	0.529	0.436	0.482	0.475	< 0.126	< 0.336	0.118
Radium-228	pci/L	NC	NA	NA	NA	1.86	1.07	2.69	1.1	0.664	< 0.777	0.826	0.555	< 0.505	0.668
Radium-226/228	pci/L	5	NA	2.83	5	2.97	1.75	4.13	1.63	1.1	< 0.777	1.3	0.654	0.751	0.785
Selenium	ug/L	50	NA	5.0	50	< 2.5	< 5	1.3	< 5	< 2.5	< 5	< 2.5	< 5	< 2.5	< 5
Thallium	ug/L	2	NA	1.0	2	< 2	--	< 2	--	< 2	--	< 2	--	< 2	--

Notes:
ug/L - micrograms per liter.
mg/L - milligrams per liter.
SU - standard units; pH is a field parameter.
pCi/L - picocuries per liter.
NA - not applicable.
NC - no criteria.
MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.
RSL - Regional Screening Level from 83 FR 36435.
UTL - Upper Tolerance Limit (95%) of the background data set.
GWPS - Groundwater Protection Standard. GWPS is the higher of the MCL/RSL and UTL.
* - Secondary Maximum Contaminant Level (SMCL), EPA Secondary Drinking Water Regulations (SDWR) April, 2012.
Bold value indicates an exceedance of the GWPS. Data from downgradient monitoring wells are screened against
The GWPS for evaluation purposes only. Confidence intervals will be used to determine compliance per the CCR rules.

Table 4
Summary of Groundwater Protection Standard Exceedances - February 2022
River Rouge Power Plant Bottom Ash Basin – RCRA CCR Monitoring Program
River Rouge, Michigan

Appendix IV	Units	GWPS	MW-16-01	
			LCL	UCL
Arsenic	ug/L	32	120	180
Lithium	ug/L	40	37	59

Notes:

ug/L - micrograms per liter.

GWPS - Groundwater Protection Standard.

UCL - Upper Confidence Limit (99%) of the downgradient data set.

LCL - Lower Confidence Limit (99%) of the downgradient data set.

Indicates a statistically significant exceedance of the GWPS.
An exceedance occurs when the LCL exceeds the GWPS.

Table 5
Summary of Groundwater Protection Standard Exceedances – November/December 2022
River Rouge Power Plant Bottom Ash Basin – RCRA CCR Monitoring Program
River Rouge, Michigan

Appendix IV	Units	GWPS	MW-16-01	
			LCL	UCL
Arsenic	ug/L	32	81	190
Lithium	ug/L	40	35	64

Notes:

ug/L - micrograms per liter.

GWPS - Groundwater Protection Standard.

UCL - Upper Confidence Limit (99%) of the downgradient data set.

LCL - Lower Confidence Limit (99%) of the downgradient data set.

Indicates a statistically significant exceedance of the GWPS.

An exceedance occurs when the LCL exceeds the GWPS.

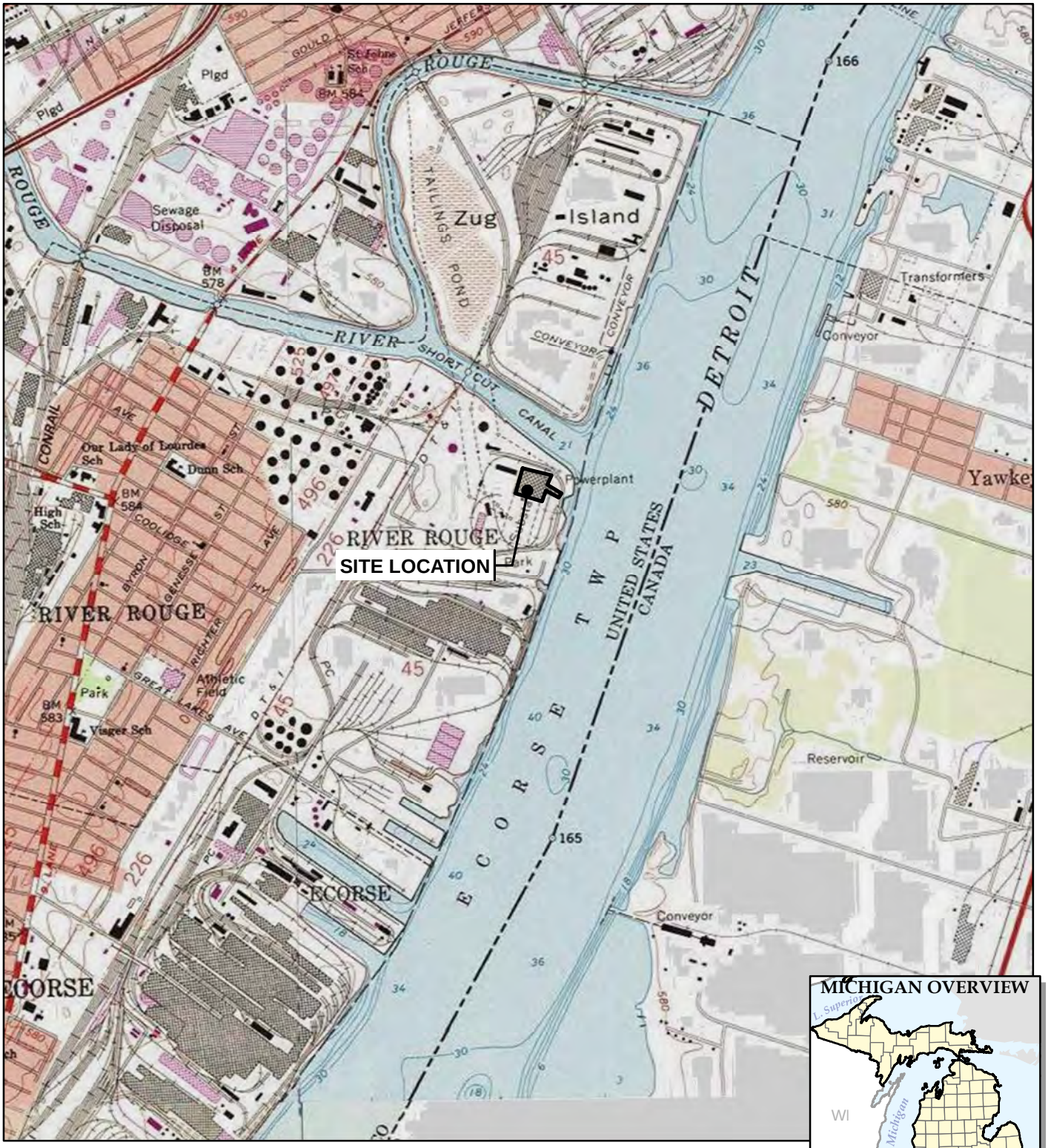
Table 6
Summary of Nature and Extent Analytical Data – November/December 2022
River Rouge Power Plant Bottom Ash Basin – RCRA CCR Monitoring Program
River Rouge, Michigan

					Sample Location:	**MW-16-04S**	**MW-17-05**	**MW-17-14**	**MW-17-15**	**MW-17-18**	**MW-17-20**
					Sample Date:	12/1/2022	11/30/2022	12/1/2022	12/1/2022	11/30/2022	11/30/2022
Constituent	Unit	EPA MCL	EPA RSL	UTL	GWPS	Nature and Extent					
Appendix III											
Boron	ug/L	NC	NA	NA	NA	1,000	280	330	140	390	470
Calcium	ug/L	NC	NA	NA	NA	110,000	130,000	150,000	84,000	200,000	350,000
Chloride	mg/L	250*	NA	NA	NA	130	120	820	220	500	980
Fluoride	mg/L	4	NA	NA	NA	1.3	0.48	0.91	0.28	0.45	0.34
pH, Field	su	6.5 - 8.5*	NA	NA	NA	7.4	6.9	6.7	--	6.7	6.5
Sulfate	mg/L	250*	NA	NA	NA	410	91	29	41	130	340
Total Dissolved Solids	mg/L	500*	NA	NA	NA	1,000	740	1,600	620	1,400	2,600
Appendix IV											
Arsenic	ug/L	10	NA	32	32	< 5	< 5	< 5	7.2	< 5	< 5
Barium	ug/L	2,000	NA	150	2,000	110	290	420	190	120	120
Cadmium	ug/L	5	NA	1.0	5	< 1	< 1	< 1	< 1	< 1	< 1
Chromium	ug/L	100	NA	2.0	100	< 2	< 2	< 2	2.8	< 2	< 2
Cobalt	ug/L	NC	6	23	23	< 1	< 1	< 1	1	< 1	< 1
Fluoride	mg/L	4	NA	1.3	4	1.3	0.48	0.91	0.28	0.45	0.34
Lead	ug/L	NC	15	1.0	15	< 1	< 1	< 1	5.2	< 1	< 1
Lithium	ug/L	NC	40	34	40	39	17	15	28	19	28
Mercury	ug/L	2	NA	0.20	2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Molybdenum	ug/L	NC	100	22	100	23	< 5	5.1	8.6	< 5	< 5
Radium-226	pci/L	NC	NA	NA	NA	0.414	1.09	1.16	0.262	0.427	1.12
Radium-228	pci/L	NC	NA	NA	NA	1.24	0.673	1.43	< 1.03	1.52	1.78
Radium-226/228	pci/L	5	NA	2.83	5	1.65	1.77	2.59	< 1.03	1.94	2.89
Selenium	ug/L	50	NA	5.0	50	< 5	< 5	< 5	< 5	< 5	< 5

Notes:

ug/L - micrograms per liter.
mg/L - milligrams per liter.
SU - standard units; pH is a field parameter.
pCi/L - picocuries per liter.
NA - not applicable.
NC - no criteria.
MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.
RSL - Regional Screening Level from 83 FR 36435.
UTL - Upper Tolerance Limit (95%) of the background data set.
GWPS - Groundwater Protection Standard. GWPS is the higher of the MCL/RSL and UTL.
* - Secondary Maximum Contaminant Level (SMCL), EPA Secondary Drinking Water Regulations (SDWR) April, 2012.
Bold value indicates an exceedance of the GWPS. Data from downgradient monitoring wells are screened against the GWPS for evaluation purposes only. Confidence intervals will be used to determine compliance per the CCR rules.

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
www.trccompanies.com
TRC - GIS

PROJECT:
DTE ELECTRIC COMPANY
RIVER ROUGE POWER PLANT
1 BELANGER PARK DRIVE
RIVER ROUGE, MICHIGAN

TITLE:
SITE LOCATION MAP

DRAWN BY:	A. FOJTIK
CHECKED BY:	B. YELEN
APPROVED BY:	V. BUENING
DATE:	JANUARY 2023
PROJ. NO.:	461816.0005
FILE:	461816-0005-001slm.mxd

FIGURE 1

E:\DTE\CCR_Sites\2017_265996\461816-0005-001slm.mxd -- Saved By: RSUEMNICHT on 1/4/2023, 12:11:09 PM

LEGEND

- COMPLIANCE WELLS
- MONITORING POINT
- NATURE AND EXTENT WELLS
- EXTRACTION WELL

NOTES

1. BASE MAP IMAGERY FROM GOOGLE, MAY 2022.
2. WELL LOCATIONS SURVEYED BY BMJ ENGINEERS AND SURVEYORS INC. IN JUNE 2016 & JUNE 2017.

N

0 300 600 Feet

1 " = 300 '

1:3,600

PROJECT:

DTE ELECTRIC COMPANY
RIVER ROUGE POWER PLANT BOTTOM ASH BASIN
1 BELANGER PARK DRIVE
RIVER ROUGE, MICHIGAN

TITLE:

MONITORING NETWORK AND SITE PLAN

DRAWN BY:	A. FOJTIK	PROJ NO.:	461816.0005
CHECKED BY:	B. YELEN		
APPROVED BY:	V. BUENING		**FIGURE 2**
DATE:	JANUARY 2023		

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

FILE NO.: 461816-0005-002.mxd

Plot Date: 1/4/2023, 16:50:04 PM by RSUEMNICHT -- LAYOUT: ANSI B(11"x17")
Path: E:\DTE\CCR_Sites\2017_265996\461816-0005-002.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

TRC - GIS

LEGEND

- COMPLIANCE WELLS
- MONITORING POINT
- NATURE AND EXTENT WELLS
- EXTRACTION WELL
- GROUNDWATER CONTOUR (2' INTERVAL, DASHED WHERE INFERRED)
- INFERRED GROUNDWATER FLOW DIRECTION
- (575.01) ELEVATION FT (NAVD 88)
- (NM) NOT MEASURED

NOTES

1. BASE MAP IMAGERY FROM GOOGLE, MAY 2022.
2. WELL LOCATIONS SURVEYED BY BMJ ENGINEERS AND SURVEYORS INC. IN JUNE 2016 & JUNE 2017.
3. GROUNDWATER ELEVATIONS DISPLAYED IN FEET RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988.
4. MONITORING WELL NOT MEASURED DUE TO FLOODED WELL PROTECTIVE COVER.
5. MONITORING WELL OR MEASURING POINT NOT MEASURED DUE TO FROZEN CONDITIONS.

0 350 700 Feet

1 " = 350 '

1:4,200

PROJECT:
DTE ELECTRIC COMPANY
RIVER ROUGE POWER PLANT BOTTOM ASH BASIN
1 BELANGER PARK DRIVE
RIVER ROUGE, MICHIGAN

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE MAP FEBRUARY 2022

DRAWN BY:	A. FOJTIK	PROJ NO.:	461816.0005
CHECKED BY:	B. YELEN		
APPROVED BY:	V. BUENING		**FIGURE 3**
DATE:	JANUARY 2023		

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

FILE NO.: 461816-0005-003.mxd

TRC - GIS
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0
Plot Date: 1/25/2023, 15:14:09 PM by RSUEMNICHT -- LAYOUT: ANSI B(11"x17")
Path: E:\DTE\CCR_Sites\2017_265996\461816-0005-003.mxd

LEGEND

- COMPLIANCE WELLS
- MONITORING POINT
- NATURE AND EXTENT WELLS
- EXTRACTION WELL
- GROUNDWATER CONTOUR (2' INTERVAL, DASHED WHERE INFERRED)
- INFERRED GROUNDWATER FLOW DIRECTION
- (574.85) ELEVATION FT (NAVD 88)
- (NM) NOT MEASURED

NOTES

1. BASE MAP IMAGERY FROM GOOGLE, MAY 2022.
2. WELL LOCATIONS SURVEYED BY BMJ ENGINEERS AND SURVEYORS INC. IN JUNE 2016 & JUNE 2017.
3. GROUNDWATER ELEVATIONS DISPLAYED IN FEET RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988.
4. MEASURING POINT WAS DRY.

N

0 350 700 Feet

1 " = 350 '

1:4,200

PROJECT:
DTE ELECTRIC COMPANY
RIVER ROUGE POWER PLANT BOTTOM ASH BASIN
1 BELANGER PARK DRIVE
RIVER ROUGE, MICHIGAN

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE MAP NOVEMBER 2022

DRAWN BY:	A. FOJTIK	PROJ NO.:	461816.0005
CHECKED BY:	B. YELEN		
APPROVED BY:	V. BUENING		**FIGURE 4**
DATE:	JANUARY 2023		

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

FILE NO.: 461816-0005-004.mxd

Plot Date: 1/25/2023, 15:16:11 PM by RSUEMNICHT -- LAYOUT: ANSI B(11"x17")
Path: E:\DTE\CCR_Sites\2017_265996\461816-0005-004.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

TRC - GIS

Appendix A
Laboratory Reports

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Tel: (330)497-9396

Laboratory Job ID: 240-163016-1
Client Project/Site: CCR DTE River Rouge Power Plant

For:
TRC Environmental Corporation.
1540 Eisenhower Place
Ann Arbor, Michigan 48108-7080

Attn: Mr. Vincent Buening

Patrick O'Meara

Authorized for release by:
3/11/2022 2:34:33 PM
Patrick O'Meara, Manager of Project Management
(330)966-5725
patrick.o'meara@eurofinset.com

Designee for

Kris Brooks, Project Manager II
(330)966-9790
Kris.Brooks@Eurofinset.com

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

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

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Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-163016-1
Project/Site: CCR DTE River Rouge Power Plant

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.
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
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: 240-163016-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-163016-1

Comments
The SW846 Method 6010D Metals (ICP), SW-846 Method 6020B Total Metals (ICPMS) , SM 2540C Total Dissolved Solids, and EPA SW-846 Method 9056A Anions analyses were performed at the Eurofins, Chicago laboratory.

Receipt
The samples were received on 2/24/2022 @ 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 2 coolers at receipt time were 0.2º C and 0.3º C.

Metals
Method 6020B: The internal standard Terbium (Tb) was used to report the elements Lead and Thallium in batch 500-645716. This was due to the LCS being spiked with the trace digestion spike which contains Bismuth.

Method 6020B: The method blank for preparation batch 500-645034 and analytical batch 500-645716 contained Chromium and Iron above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were either greater than 10X the value found in the method blank or non-detects.

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

General Chemistry
Method 9056A: There was a retention time shift associated with sample MW-16-02_20220222 (240-163016-2) for Chloride and Sulfate. The data matches historical data; therefore it has been reported.

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: 240-163016-1
Project/Site: CCR DTE River Rouge Power Plant

Method	Method Description	Protocol	Laboratory
6010D	Metals (ICP)	SW846	TAL CHI
6020B	Metals (ICP/MS)	SW846	TAL CHI
9056A	Anions, Ion Chromatography	SW846	TAL CHI
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI

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:

TAL CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-163016-1
Project/Site: CCR DTE River Rouge Power Plant

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-163016-1	MW-16-01_20220222	Water	02/22/22 11:00	02/24/22 08:00
240-163016-2	MW-16-02_20220222	Water	02/22/22 10:05	02/24/22 08:00
240-163016-3	MW-16-03_20220222	Water	02/22/22 09:05	02/24/22 08:00
240-163016-4	MW-17-06_20220222	Water	02/22/22 12:00	02/24/22 08:00
240-163016-5	MW-17-07_20220222	Water	02/22/22 15:25	02/24/22 08:00
240-163016-6	DUP-01_20220222	Water	02/22/22 00:00	02/24/22 08:00

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE River Rouge Power Plant

Job ID: 240-163016-1

Client Sample ID: MW-16-01_20220222 — Lab Sample ID: 240-163016-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.53		0.050	0.0056	mg/L	1		6010D	Total Recoverable
Arsenic	140		1.0	0.23	ug/L	1		6020B	Total Recoverable
Barium	110		2.5	0.73	ug/L	1		6020B	Total Recoverable
Calcium	57000	B	200	44	ug/L	1		6020B	Total Recoverable
Copper	0.69	J	2.0	0.50	ug/L	1		6020B	Total Recoverable
Molybdenum	2.9	J	5.0	2.5	ug/L	1		6020B	Total Recoverable
Nickel	0.69	J	2.0	0.63	ug/L	1		6020B	Total Recoverable
Lithium	40		2.0	0.50	ug/L	1		6020B	Total Recoverable
Iron	2400	B	100	47	ug/L	1		6020B	Total Recoverable
Chloride	43		5.0	4.3	mg/L	25		9056A	Total/NA
Fluoride	1.4		0.20	0.067	mg/L	1		9056A	Total/NA
Sulfate	0.34		0.20	0.095	mg/L	1		9056A	Total/NA
Total Dissolved Solids	330		10	4.3	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02_20220222 — Lab Sample ID: 240-163016-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.33		0.050	0.0056	mg/L	1		6010D	Total Recoverable
Arsenic	2.4		1.0	0.23	ug/L	1		6020B	Total Recoverable
Barium	27		2.5	0.73	ug/L	1		6020B	Total Recoverable
Calcium	62000	B	200	44	ug/L	1		6020B	Total Recoverable
Lithium	16		2.0	0.50	ug/L	1		6020B	Total Recoverable
Iron	550		100	47	ug/L	1		6020B	Total Recoverable
Chloride	46		5.0	4.3	mg/L	25		9056A	Total/NA
Fluoride	0.54		0.20	0.067	mg/L	1		9056A	Total/NA
Sulfate	0.40		0.20	0.095	mg/L	1		9056A	Total/NA
Total Dissolved Solids	290		10	4.3	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03_20220222 — Lab Sample ID: 240-163016-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.087		0.050	0.0056	mg/L	1		6010D	Total Recoverable
Arsenic	0.36	J	1.0	0.23	ug/L	1		6020B	Total Recoverable
Barium	28		2.5	0.73	ug/L	1		6020B	Total Recoverable
Calcium	59000	B	200	44	ug/L	1		6020B	Total Recoverable
Lithium	7.9		2.0	0.50	ug/L	1		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE River Rouge Power Plant

Job ID: 240-163016-1

Client Sample ID: MW-16-03_20220222 (Continued) — Lab Sample ID: 240-163016-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	84	J B	100	47	ug/L	1		6020B	Total Recoverable
Chloride	45		5.0	4.3	mg/L	25		9056A	Total/NA
Fluoride	0.31		0.20	0.067	mg/L	1		9056A	Total/NA
Sulfate	1.3		0.20	0.095	mg/L	1		9056A	Total/NA
Total Dissolved Solids	310		10	4.3	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-06_20220222 — Lab Sample ID: 240-163016-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.35		0.050	0.0056	mg/L	1		6010D	Total Recoverable
Arsenic	16		1.0	0.23	ug/L	1		6020B	Total Recoverable
Barium	130		2.5	0.73	ug/L	1		6020B	Total Recoverable
Calcium	320000	B	1000	220	ug/L	5		6020B	Total Recoverable
Cobalt	0.82	J	1.0	0.40	ug/L	1		6020B	Total Recoverable
Copper	0.56	J	2.0	0.50	ug/L	1		6020B	Total Recoverable
Molybdenum	8.7		5.0	2.5	ug/L	1		6020B	Total Recoverable
Nickel	2.1		2.0	0.63	ug/L	1		6020B	Total Recoverable
Lithium	21		2.0	0.50	ug/L	1		6020B	Total Recoverable
Iron	13000	B	100	47	ug/L	1		6020B	Total Recoverable
Chloride	740		50	43	mg/L	250		9056A	Total/NA
Fluoride	0.89		0.20	0.067	mg/L	1		9056A	Total/NA
Sulfate	360		50	24	mg/L	250		9056A	Total/NA
Total Dissolved Solids	2400		13	5.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-07_20220222 — Lab Sample ID: 240-163016-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.53		0.050	0.0056	mg/L	1		6010D	Total Recoverable
Arsenic	98		1.0	0.23	ug/L	1		6020B	Total Recoverable
Barium	54		2.5	0.73	ug/L	1		6020B	Total Recoverable
Calcium	570000	B	1000	220	ug/L	5		6020B	Total Recoverable
Cadmium	0.17	J	0.50	0.17	ug/L	1		6020B	Total Recoverable
Cobalt	8.0		1.0	0.40	ug/L	1		6020B	Total Recoverable
Chromium	6.5		5.0	1.1	ug/L	1		6020B	Total Recoverable
Copper	20		2.0	0.50	ug/L	1		6020B	Total Recoverable
Molybdenum	21		5.0	2.5	ug/L	1		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE River Rouge Power Plant

Job ID: 240-163016-1

Client Sample ID: MW-17-07_20220222 (Continued)

Lab Sample ID: 240-163016-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	7.2		2.0	0.63	ug/L	1		6020B	Total Recoverable
Selenium	1.3	J	2.5	0.98	ug/L	1		6020B	Total Recoverable
Vanadium	3.7	J	5.0	2.2	ug/L	1		6020B	Total Recoverable
Zinc	29	B	20	6.9	ug/L	1		6020B	Total Recoverable
Lithium	26		2.0	0.50	ug/L	1		6020B	Total Recoverable
Iron	63000		100	47	ug/L	1		6020B	Total Recoverable
Lead	4.2		0.50	0.19	ug/L	1		6020B	Total Recoverable
Chloride	2300		100	85	mg/L	500		9056A	Total/NA
Sulfate	1300		50	24	mg/L	250		9056A	Total/NA
Total Dissolved Solids	6400		50	22	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01_20220222

Lab Sample ID: 240-163016-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.084		0.050	0.0056	mg/L	1		6010D	Total Recoverable
Arsenic	0.67	J	1.0	0.23	ug/L	1		6020B	Total Recoverable
Barium	28		2.5	0.73	ug/L	1		6020B	Total Recoverable
Calcium	60000	B	200	44	ug/L	1		6020B	Total Recoverable
Copper	0.62	J	2.0	0.50	ug/L	1		6020B	Total Recoverable
Lithium	8.8		2.0	0.50	ug/L	1		6020B	Total Recoverable
Chloride	46		5.0	4.3	mg/L	25		9056A	Total/NA
Fluoride	0.31		0.20	0.067	mg/L	1		9056A	Total/NA
Sulfate	1.2		0.20	0.095	mg/L	1		9056A	Total/NA
Total Dissolved Solids	320		10	4.3	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation.
Job ID: 240-163016-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-16-01_20220222
Lab Sample ID: 240-163016-1

Date Collected: 02/22/22 11:00
Matrix: Water
Date Received: 02/24/22 08:00

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.53**		0.050	0.0056	mg/L		03/01/22 09:08	03/01/22 14:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.0	U	3.0	1.3	ug/L		03/01/22 09:08	03/04/22 11:30	1
Arsenic	**140**		1.0	0.23	ug/L		03/01/22 09:08	03/04/22 11:30	1
Barium	**110**		2.5	0.73	ug/L		03/01/22 09:08	03/04/22 11:30	1
Beryllium	1.0	U	1.0	0.53	ug/L		03/01/22 09:08	03/04/22 11:30	1
Calcium	**57000**	**B**	200	44	ug/L		03/01/22 09:08	03/04/22 11:30	1
Cadmium	0.50	U	0.50	0.17	ug/L		03/01/22 09:08	03/04/22 11:30	1
Cobalt	1.0	U	1.0	0.40	ug/L		03/01/22 09:08	03/04/22 11:30	1
Chromium	5.0	U	5.0	1.1	ug/L		03/01/22 09:08	03/04/22 11:30	1
Copper	**0.69**	**J**	2.0	0.50	ug/L		03/01/22 09:08	03/04/22 11:30	1
Molybdenum	**2.9**	**J**	5.0	2.5	ug/L		03/01/22 09:08	03/04/22 11:30	1
Nickel	**0.69**	**J**	2.0	0.63	ug/L		03/01/22 09:08	03/04/22 11:30	1
Selenium	2.5	U	2.5	0.98	ug/L		03/01/22 09:08	03/04/22 11:30	1
Thallium	2.0	U	2.0	0.57	ug/L		03/01/22 09:08	03/04/22 11:30	1
Vanadium	5.0	U	5.0	2.2	ug/L		03/01/22 09:08	03/04/22 11:30	1
Zinc	20	U	20	6.9	ug/L		03/01/22 09:08	03/04/22 11:30	1
Silver	0.50	U	0.50	0.12	ug/L		03/01/22 09:08	03/04/22 11:30	1
Lithium	**40**		2.0	0.50	ug/L		03/01/22 09:08	03/04/22 11:30	1
Iron	**2400**	**B**	100	47	ug/L		03/01/22 09:08	03/04/22 11:30	1
Lead	0.50	U	0.50	0.19	ug/L		03/01/22 09:08	03/04/22 11:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**43**		5.0	4.3	mg/L			03/04/22 16:26	25
Fluoride	**1.4**		0.20	0.067	mg/L			03/04/22 16:12	1
Sulfate	**0.34**		0.20	0.095	mg/L			03/04/22 16:12	1
Total Dissolved Solids	**330**		10	4.3	mg/L			02/27/22 19:36	1

Client: TRC Environmental Corporation.
Job ID: 240-163016-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-16-02_20220222
Lab Sample ID: 240-163016-2
Date Collected: 02/22/22 10:05
Matrix: Water
Date Received: 02/24/22 08:00

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.33**		0.050	0.0056	mg/L		03/01/22 09:08	03/01/22 14:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.0	U	3.0	1.3	ug/L		03/01/22 09:08	03/04/22 11:54	1
Arsenic	**2.4**		1.0	0.23	ug/L		03/01/22 09:08	03/04/22 11:54	1
Barium	**27**		2.5	0.73	ug/L		03/01/22 09:08	03/04/22 11:54	1
Beryllium	1.0	U	1.0	0.53	ug/L		03/01/22 09:08	03/04/22 11:54	1
Calcium	**62000**	**B**	200	44	ug/L		03/01/22 09:08	03/04/22 11:54	1
Cadmium	0.50	U	0.50	0.17	ug/L		03/01/22 09:08	03/04/22 11:54	1
Cobalt	1.0	U	1.0	0.40	ug/L		03/01/22 09:08	03/04/22 11:54	1
Chromium	5.0	U	5.0	1.1	ug/L		03/01/22 09:08	03/04/22 11:54	1
Copper	2.0	U	2.0	0.50	ug/L		03/01/22 09:08	03/04/22 11:54	1
Molybdenum	5.0	U	5.0	2.5	ug/L		03/01/22 09:08	03/04/22 11:54	1
Nickel	2.0	U	2.0	0.63	ug/L		03/01/22 09:08	03/04/22 11:54	1
Selenium	2.5	U	2.5	0.98	ug/L		03/01/22 09:08	03/04/22 11:54	1
Thallium	2.0	U	2.0	0.57	ug/L		03/01/22 09:08	03/04/22 11:54	1
Vanadium	5.0	U	5.0	2.2	ug/L		03/01/22 09:08	03/04/22 11:54	1
Zinc	20	U	20	6.9	ug/L		03/01/22 09:08	03/04/22 11:54	1
Silver	0.50	U	0.50	0.12	ug/L		03/01/22 09:08	03/04/22 11:54	1
Lithium	**16**		2.0	0.50	ug/L		03/01/22 09:08	03/04/22 11:54	1
Iron	**550**		100	47	ug/L		03/07/22 08:41	03/07/22 16:41	1
Lead	0.50	U	0.50	0.19	ug/L		03/01/22 09:08	03/04/22 11:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**46**		5.0	4.3	mg/L			03/04/22 16:53	25
Fluoride	**0.54**		0.20	0.067	mg/L			03/04/22 16:39	1
Sulfate	**0.40**		0.20	0.095	mg/L			03/04/22 16:39	1
Total Dissolved Solids	**290**		10	4.3	mg/L			02/27/22 19:41	1

Client: TRC Environmental Corporation.
Job ID: 240-163016-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-16-03_20220222
Lab Sample ID: 240-163016-3

Date Collected: 02/22/22 09:05
Matrix: Water
Date Received: 02/24/22 08:00

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.087**		0.050	0.0056	mg/L		03/01/22 09:08	03/01/22 14:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.0	U	3.0	1.3	ug/L		03/01/22 09:08	03/04/22 11:58	1
Arsenic	**0.36**	**J**	1.0	0.23	ug/L		03/01/22 09:08	03/04/22 11:58	1
Barium	**28**		2.5	0.73	ug/L		03/01/22 09:08	03/04/22 11:58	1
Beryllium	1.0	U	1.0	0.53	ug/L		03/01/22 09:08	03/04/22 11:58	1
Calcium	**59000**	**B**	200	44	ug/L		03/01/22 09:08	03/04/22 11:58	1
Cadmium	0.50	U	0.50	0.17	ug/L		03/01/22 09:08	03/04/22 11:58	1
Cobalt	1.0	U	1.0	0.40	ug/L		03/01/22 09:08	03/04/22 11:58	1
Chromium	5.0	U	5.0	1.1	ug/L		03/01/22 09:08	03/04/22 11:58	1
Copper	2.0	U	2.0	0.50	ug/L		03/01/22 09:08	03/04/22 11:58	1
Molybdenum	5.0	U	5.0	2.5	ug/L		03/01/22 09:08	03/04/22 11:58	1
Nickel	2.0	U	2.0	0.63	ug/L		03/01/22 09:08	03/04/22 11:58	1
Selenium	2.5	U	2.5	0.98	ug/L		03/01/22 09:08	03/04/22 11:58	1
Thallium	2.0	U	2.0	0.57	ug/L		03/01/22 09:08	03/04/22 11:58	1
Vanadium	5.0	U	5.0	2.2	ug/L		03/01/22 09:08	03/04/22 11:58	1
Zinc	20	U	20	6.9	ug/L		03/01/22 09:08	03/04/22 11:58	1
Silver	0.50	U	0.50	0.12	ug/L		03/01/22 09:08	03/04/22 11:58	1
Lithium	**7.9**		2.0	0.50	ug/L		03/01/22 09:08	03/04/22 11:58	1
Iron	**84**	**J B**	100	47	ug/L		03/01/22 09:08	03/04/22 11:58	1
Lead	0.50	U	0.50	0.19	ug/L		03/01/22 09:08	03/04/22 11:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**45**		5.0	4.3	mg/L			03/04/22 17:20	25
Fluoride	**0.31**		0.20	0.067	mg/L			03/04/22 17:07	1
Sulfate	**1.3**		0.20	0.095	mg/L			03/04/22 17:07	1
Total Dissolved Solids	**310**		10	4.3	mg/L			02/27/22 19:44	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE River Rouge Power Plant

Job ID: 240-163016-1

Client Sample ID: MW-17-06_20220222

Date Collected: 02/22/22 12:00
Date Received: 02/24/22 08:00

Lab Sample ID: 240-163016-4

Matrix: Water

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.35**		0.050	0.0056	mg/L		03/01/22 09:08	03/01/22 14:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.0	U	3.0	1.3	ug/L		03/01/22 09:08	03/04/22 12:01	1
Arsenic	**16**		1.0	0.23	ug/L		03/01/22 09:08	03/04/22 12:01	1
Barium	**130**		2.5	0.73	ug/L		03/01/22 09:08	03/04/22 12:01	1
Beryllium	1.0	U	1.0	0.53	ug/L		03/01/22 09:08	03/04/22 12:01	1
Calcium	**320000**	**B**	1000	220	ug/L		03/01/22 09:08	03/04/22 12:50	5
Cadmium	0.50	U	0.50	0.17	ug/L		03/01/22 09:08	03/04/22 12:01	1
Cobalt	**0.82**	**J**	1.0	0.40	ug/L		03/01/22 09:08	03/04/22 12:01	1
Chromium	5.0	U	5.0	1.1	ug/L		03/01/22 09:08	03/04/22 12:01	1
Copper	**0.56**	**J**	2.0	0.50	ug/L		03/01/22 09:08	03/04/22 12:01	1
Molybdenum	**8.7**		5.0	2.5	ug/L		03/01/22 09:08	03/04/22 12:01	1
Nickel	**2.1**		2.0	0.63	ug/L		03/01/22 09:08	03/04/22 12:01	1
Selenium	2.5	U	2.5	0.98	ug/L		03/01/22 09:08	03/04/22 12:01	1
Thallium	2.0	U	2.0	0.57	ug/L		03/01/22 09:08	03/04/22 12:01	1
Vanadium	5.0	U	5.0	2.2	ug/L		03/01/22 09:08	03/04/22 12:01	1
Zinc	20	U	20	6.9	ug/L		03/01/22 09:08	03/04/22 12:01	1
Silver	0.50	U	0.50	0.12	ug/L		03/01/22 09:08	03/04/22 12:01	1
Lithium	**21**		2.0	0.50	ug/L		03/01/22 09:08	03/04/22 12:01	1
Iron	**13000**	**B**	100	47	ug/L		03/01/22 09:08	03/04/22 12:01	1
Lead	0.50	U	0.50	0.19	ug/L		03/01/22 09:08	03/04/22 12:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**740**		50	43	mg/L			03/04/22 18:15	250
Fluoride	**0.89**		0.20	0.067	mg/L			03/04/22 17:34	1
Sulfate	**360**		50	24	mg/L			03/04/22 18:15	250
Total Dissolved Solids	**2400**		13	5.4	mg/L			02/27/22 19:46	1

Client: TRC Environmental Corporation.
Job ID: 240-163016-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-17-07_20220222
Lab Sample ID: 240-163016-5

Date Collected: 02/22/22 15:25
Matrix: Water
Date Received: 02/24/22 08:00

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.53		0.050	0.0056	mg/L		03/02/22 08:11	03/02/22 17:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.0	U	3.0	1.3	ug/L		03/02/22 08:11	03/04/22 11:19	1
Arsenic	98		1.0	0.23	ug/L		03/02/22 08:11	03/04/22 11:19	1
Barium	54		2.5	0.73	ug/L		03/02/22 08:11	03/04/22 11:19	1
Beryllium	1.0	U	1.0	0.53	ug/L		03/02/22 08:11	03/04/22 11:19	1
Calcium	570000	B	1000	220	ug/L		03/02/22 08:11	03/04/22 12:46	5
Cadmium	0.17	J	0.50	0.17	ug/L		03/02/22 08:11	03/04/22 11:19	1
Cobalt	8.0		1.0	0.40	ug/L		03/02/22 08:11	03/04/22 11:19	1
Chromium	6.5		5.0	1.1	ug/L		03/02/22 08:11	03/04/22 11:19	1
Copper	20		2.0	0.50	ug/L		03/02/22 08:11	03/04/22 11:19	1
Molybdenum	21		5.0	2.5	ug/L		03/02/22 08:11	03/04/22 11:19	1
Nickel	7.2		2.0	0.63	ug/L		03/02/22 08:11	03/04/22 11:19	1
Selenium	1.3	J	2.5	0.98	ug/L		03/02/22 08:11	03/04/22 11:19	1
Thallium	2.0	U	2.0	0.57	ug/L		03/02/22 08:11	03/04/22 11:19	1
Vanadium	3.7	J	5.0	2.2	ug/L		03/02/22 08:11	03/04/22 11:19	1
Zinc	29	B	20	6.9	ug/L		03/02/22 08:11	03/04/22 11:19	1
Silver	0.50	U	0.50	0.12	ug/L		03/02/22 08:11	03/04/22 11:19	1
Lithium	26		2.0	0.50	ug/L		03/02/22 08:11	03/04/22 11:19	1
Iron	63000		100	47	ug/L		03/02/22 08:11	03/04/22 11:19	1
Lead	4.2		0.50	0.19	ug/L		03/02/22 08:11	03/04/22 11:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2300		100	85	mg/L			03/05/22 14:43	500
Fluoride	0.20	U	0.20	0.067	mg/L			03/04/22 18:28	1
Sulfate	1300		50	24	mg/L			03/04/22 18:42	250
Total Dissolved Solids	6400		50	22	mg/L			02/27/22 19:49	1

Client Sample ID: DUP-01_20220222 Lab Sample ID: 240-163016-6

Date Collected: 02/22/22 00:00 **Matrix: Water**
Date Received: 02/24/22 08:00

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.084**		0.050	0.0056	mg/L		03/01/22 09:08	03/01/22 15:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.0	U	3.0	1.3	ug/L		03/01/22 09:08	03/04/22 12:04	1
Arsenic	**0.67**	**J**	1.0	0.23	ug/L		03/01/22 09:08	03/04/22 12:04	1
Barium	**28**		2.5	0.73	ug/L		03/01/22 09:08	03/04/22 12:04	1
Beryllium	1.0	U	1.0	0.53	ug/L		03/01/22 09:08	03/04/22 12:04	1
Calcium	**60000**	**B**	200	44	ug/L		03/01/22 09:08	03/04/22 12:04	1
Cadmium	0.50	U	0.50	0.17	ug/L		03/01/22 09:08	03/04/22 12:04	1
Cobalt	1.0	U	1.0	0.40	ug/L		03/01/22 09:08	03/04/22 12:04	1
Chromium	5.0	U	5.0	1.1	ug/L		03/01/22 09:08	03/04/22 12:04	1
Copper	**0.62**	**J**	2.0	0.50	ug/L		03/01/22 09:08	03/04/22 12:04	1
Molybdenum	5.0	U	5.0	2.5	ug/L		03/01/22 09:08	03/04/22 12:04	1
Nickel	2.0	U	2.0	0.63	ug/L		03/01/22 09:08	03/04/22 12:04	1
Selenium	2.5	U	2.5	0.98	ug/L		03/01/22 09:08	03/04/22 12:04	1
Thallium	2.0	U	2.0	0.57	ug/L		03/01/22 09:08	03/04/22 12:04	1
Vanadium	5.0	U	5.0	2.2	ug/L		03/01/22 09:08	03/04/22 12:04	1
Zinc	20	U	20	6.9	ug/L		03/01/22 09:08	03/04/22 12:04	1
Silver	0.50	U	0.50	0.12	ug/L		03/01/22 09:08	03/04/22 12:04	1
Lithium	**8.8**		2.0	0.50	ug/L		03/01/22 09:08	03/04/22 12:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**46**		5.0	4.3	mg/L			03/04/22 19:09	25
Fluoride	**0.31**		0.20	0.067	mg/L			03/04/22 18:56	1
Sulfate	**1.2**		0.20	0.095	mg/L			03/04/22 18:56	1
Total Dissolved Solids	**320**		10	4.3	mg/L			02/27/22 19:52	1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 500-645034/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 645227 — **Prep Batch: 645034**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.050	U	0.050	0.0056	mg/L		03/01/22 09:08	03/01/22 14:28	1

Lab Sample ID: LCS 500-645034/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 645227 — **Prep Batch: 645034**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Boron			1.00	0.966		mg/L		97	80 - 120		

Lab Sample ID: 240-163016-1 MS — **Client Sample ID: MW-16-01_20220222**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 645227 — **Prep Batch: 645034**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Boron	0.53		1.00	1.52		mg/L		99	75 - 125		

Lab Sample ID: 240-163016-1 MSD — **Client Sample ID: MW-16-01_20220222**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 645227 — **Prep Batch: 645034**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.53		1.00	1.52		mg/L		99	75 - 125	0	20

Lab Sample ID: 240-163016-1 DU — **Client Sample ID: MW-16-01_20220222**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 645227 — **Prep Batch: 645034**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Boron	0.53			0.532		mg/L				0.3	20

Lab Sample ID: MB 500-645208/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 645411 — **Prep Batch: 645208**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.050	U	0.050	0.0056	mg/L		03/02/22 08:11	03/02/22 16:57	1

Lab Sample ID: LCS 500-645208/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 645411 — **Prep Batch: 645208**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Boron			1.00	0.957		mg/L		96	80 - 120		

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 500-645034/1-A
Matrix: Water
Analysis Batch: 645716

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 645034

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.0	U	3.0	1.3	ug/L		03/01/22 09:08	03/04/22 11:23	1
Arsenic	1.0	U	1.0	0.23	ug/L		03/01/22 09:08	03/04/22 11:23	1
Barium	2.5	U	2.5	0.73	ug/L		03/01/22 09:08	03/04/22 11:23	1
Beryllium	1.0	U	1.0	0.53	ug/L		03/01/22 09:08	03/04/22 11:23	1
Calcium	175	J	200	44	ug/L		03/01/22 09:08	03/04/22 11:23	1
Cadmium	0.50	U	0.50	0.17	ug/L		03/01/22 09:08	03/04/22 11:23	1
Cobalt	1.0	U	1.0	0.40	ug/L		03/01/22 09:08	03/04/22 11:23	1
Chromium	5.68		5.0	1.1	ug/L		03/01/22 09:08	03/04/22 11:23	1
Copper	2.0	U	2.0	0.50	ug/L		03/01/22 09:08	03/04/22 11:23	1
Molybdenum	5.0	U	5.0	2.5	ug/L		03/01/22 09:08	03/04/22 11:23	1
Nickel	2.0	U	2.0	0.63	ug/L		03/01/22 09:08	03/04/22 11:23	1
Selenium	2.5	U	2.5	0.98	ug/L		03/01/22 09:08	03/04/22 11:23	1
Thallium	2.0	U	2.0	0.57	ug/L		03/01/22 09:08	03/04/22 11:23	1
Vanadium	5.0	U	5.0	2.2	ug/L		03/01/22 09:08	03/04/22 11:23	1
Zinc	20	U	20	6.9	ug/L		03/01/22 09:08	03/04/22 11:23	1
Silver	0.50	U	0.50	0.12	ug/L		03/01/22 09:08	03/04/22 11:23	1
Lithium	2.0	U	2.0	0.50	ug/L		03/01/22 09:08	03/04/22 11:23	1
Iron	102		100	47	ug/L		03/01/22 09:08	03/04/22 11:23	1
Lead	0.50	U	0.50	0.19	ug/L		03/01/22 09:08	03/04/22 11:23	1

Lab Sample ID: LCS 500-645034/2-A
Matrix: Water
Analysis Batch: 645716

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 645034

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	500	496		ug/L		99	80 - 120
Arsenic	100	97.3		ug/L		97	80 - 120
Barium	500	516		ug/L		103	80 - 120
Beryllium	50.0	48.0		ug/L		96	80 - 120
Calcium	10000	10200		ug/L		102	80 - 120
Cadmium	50.0	49.1		ug/L		98	80 - 120
Cobalt	500	516		ug/L		103	80 - 120
Chromium	200	205		ug/L		103	80 - 120
Copper	250	253		ug/L		101	80 - 120
Molybdenum	1000	946		ug/L		95	80 - 120
Nickel	500	501		ug/L		100	80 - 120
Selenium	100	97.6		ug/L		98	80 - 120
Thallium	100	106		ug/L		106	80 - 120
Vanadium	500	495		ug/L		99	80 - 120
Zinc	500	497		ug/L		99	80 - 120
Silver	50.0	50.7		ug/L		101	80 - 120
Lithium	100	102		ug/L		102	80 - 120
Iron	1000	1040		ug/L		104	80 - 120
Lead	100	105		ug/L		105	80 - 120

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

Lab Sample ID: 240-163016-1 MS **Client Sample ID: MW-16-01_20220222**
Matrix: Water **Prep Type: Total Recoverable**
Analysis Batch: 645716 **Prep Batch: 645034**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	3.0	U	500	505		ug/L		101	75 - 125
Arsenic	140		100	245		ug/L		102	75 - 125
Barium	110		500	616		ug/L		101	75 - 125
Beryllium	1.0	U	50.0	49.1		ug/L		98	75 - 125
Calcium	57000	B	10000	65700	4	ug/L		87	75 - 125
Cadmium	0.50	U	50.0	49.9		ug/L		100	75 - 125
Cobalt	1.0	U	500	495		ug/L		99	75 - 125
Chromium	5.0	U	200	201		ug/L		100	75 - 125
Copper	0.69	J	250	252		ug/L		101	75 - 125
Molybdenum	2.9	J	1000	986		ug/L		98	75 - 125
Nickel	0.69	J	500	502		ug/L		100	75 - 125
Selenium	2.5	U	100	99.1		ug/L		99	75 - 125
Thallium	2.0	U	100	104		ug/L		104	75 - 125
Vanadium	5.0	U	500	490		ug/L		98	75 - 125
Zinc	20	U	500	505		ug/L		101	75 - 125
Silver	0.50	U	50.0	50.0		ug/L		100	75 - 125
Lithium	40		100	142		ug/L		101	75 - 125
Iron	2400	B	1000	3310		ug/L		94	75 - 125
Lead	0.50	U	100	103		ug/L		103	75 - 125

Lab Sample ID: 240-163016-1 MSD **Client Sample ID: MW-16-01_20220222**
Matrix: Water **Prep Type: Total Recoverable**
Analysis Batch: 645716 **Prep Batch: 645034**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	3.0	U	500	506		ug/L		101	75 - 125	0	20
Arsenic	140		100	243		ug/L		100	75 - 125	1	20
Barium	110		500	610		ug/L		99	75 - 125	1	20
Beryllium	1.0	U	50.0	47.6		ug/L		95	75 - 125	3	20
Calcium	57000	B	10000	66000	4	ug/L		90	75 - 125	0	20
Cadmium	0.50	U	50.0	49.4		ug/L		99	75 - 125	1	20
Cobalt	1.0	U	500	499		ug/L		100	75 - 125	1	20
Chromium	5.0	U	200	203		ug/L		101	75 - 125	1	20
Copper	0.69	J	250	253		ug/L		101	75 - 125	0	20
Molybdenum	2.9	J	1000	971		ug/L		97	75 - 125	2	20
Nickel	0.69	J	500	506		ug/L		101	75 - 125	1	20
Selenium	2.5	U	100	102		ug/L		102	75 - 125	2	20
Thallium	2.0	U	100	103		ug/L		103	75 - 125	1	20
Vanadium	5.0	U	500	494		ug/L		99	75 - 125	1	20
Zinc	20	U	500	500		ug/L		100	75 - 125	1	20
Silver	0.50	U	50.0	50.1		ug/L		100	75 - 125	0	20
Lithium	40		100	142		ug/L		102	75 - 125	0	20
Iron	2400	B	1000	3340		ug/L		97	75 - 125	1	20
Lead	0.50	U	100	105		ug/L		105	75 - 125	2	20

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

Lab Sample ID: 240-163016-1 DU
Matrix: Water
Analysis Batch: 645716

Client Sample ID: MW-16-01_20220222
Prep Type: Total Recoverable
Prep Batch: 645034

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	3.0	U	3.0	U	ug/L		NC	20
Arsenic	140		145		ug/L		1	20
Barium	110		114		ug/L		1	20
Beryllium	1.0	U	1.0	U	ug/L		NC	20
Calcium	57000	B	58100		ug/L		2	20
Cadmium	0.50	U	0.50	U	ug/L		NC	20
Cobalt	1.0	U	1.0	U	ug/L		NC	20
Chromium	5.0	U	5.0	U	ug/L		NC	20
Copper	0.69	J	0.573	J	ug/L		19	20
Molybdenum	2.9	J	2.66	J	ug/L		9	20
Nickel	0.69	J	2.0	U	ug/L		NC	20
Selenium	2.5	U	2.5	U	ug/L		NC	20
Thallium	2.0	U	2.0	U	ug/L		NC	20
Vanadium	5.0	U	5.0	U	ug/L		NC	20
Zinc	20	U	20	U	ug/L		NC	20
Silver	0.50	U	0.50	U	ug/L		NC	20
Lithium	40		40.9		ug/L		1	20
Iron	2400	B	2380		ug/L		0.6	20
Lead	0.50	U	0.50	U	ug/L		NC	20

Lab Sample ID: MB 500-645208/1-A
Matrix: Water
Analysis Batch: 645716

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 645208

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.0	U	3.0	1.3	ug/L		03/02/22 08:11	03/04/22 11:12	1
Arsenic	1.0	U	1.0	0.23	ug/L		03/02/22 08:11	03/04/22 11:12	1
Barium	2.5	U	2.5	0.73	ug/L		03/02/22 08:11	03/04/22 11:12	1
Beryllium	1.0	U	1.0	0.53	ug/L		03/02/22 08:11	03/04/22 11:12	1
Calcium	63.7	J	200	44	ug/L		03/02/22 08:11	03/04/22 11:12	1
Cadmium	0.50	U	0.50	0.17	ug/L		03/02/22 08:11	03/04/22 11:12	1
Cobalt	1.0	U	1.0	0.40	ug/L		03/02/22 08:11	03/04/22 11:12	1
Chromium	5.0	U	5.0	1.1	ug/L		03/02/22 08:11	03/04/22 11:12	1
Copper	2.0	U	2.0	0.50	ug/L		03/02/22 08:11	03/04/22 11:12	1
Molybdenum	5.0	U	5.0	2.5	ug/L		03/02/22 08:11	03/04/22 11:12	1
Nickel	2.0	U	2.0	0.63	ug/L		03/02/22 08:11	03/04/22 11:12	1
Selenium	2.5	U	2.5	0.98	ug/L		03/02/22 08:11	03/04/22 11:12	1
Thallium	2.0	U	2.0	0.57	ug/L		03/02/22 08:11	03/04/22 11:12	1
Vanadium	5.0	U	5.0	2.2	ug/L		03/02/22 08:11	03/04/22 11:12	1
Zinc	10.6	J	20	6.9	ug/L		03/02/22 08:11	03/04/22 11:12	1
Silver	0.50	U	0.50	0.12	ug/L		03/02/22 08:11	03/04/22 11:12	1
Lithium	2.0	U	2.0	0.50	ug/L		03/02/22 08:11	03/04/22 11:12	1
Iron	100	U	100	47	ug/L		03/02/22 08:11	03/04/22 11:12	1
Lead	0.50	U	0.50	0.19	ug/L		03/02/22 08:11	03/04/22 11:12	1

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

Lab Sample ID: LCS 500-645208/2-A
Matrix: Water
Analysis Batch: 645716

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 645208

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	500	509		ug/L		102	80 - 120
Arsenic	100	94.7		ug/L		95	80 - 120
Barium	2000	2020		ug/L		101	80 - 120
Beryllium	50.0	53.9		ug/L		108	80 - 120
Calcium	10000	10400		ug/L		104	80 - 120
Cadmium	50.0	51.3		ug/L		103	80 - 120
Cobalt	500	532		ug/L		106	80 - 120
Chromium	200	213		ug/L		106	80 - 120
Copper	250	269		ug/L		107	80 - 120
Molybdenum	1000	992		ug/L		99	80 - 120
Nickel	500	534		ug/L		107	80 - 120
Selenium	100	99.5		ug/L		100	80 - 120
Thallium	100	107		ug/L		107	80 - 120
Vanadium	500	505		ug/L		101	80 - 120
Zinc	500	528		ug/L		106	80 - 120
Silver	50.0	53.4		ug/L		107	80 - 120
Lithium	500	539		ug/L		108	80 - 120
Iron	1000	1080		ug/L		108	80 - 120
Lead	100	107		ug/L		107	80 - 120

Lab Sample ID: MB 500-645876/1-A
Matrix: Water
Analysis Batch: 646043

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 645876

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	100	U	100	47	ug/L		03/07/22 08:41	03/07/22 15:57	1

Lab Sample ID: LCS 500-645876/2-A
Matrix: Water
Analysis Batch: 646043

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 645876

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1000	1030		ug/L		103	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 500-645699/9
Matrix: Water
Analysis Batch: 645699

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.20	U	0.20	0.17	mg/L			03/04/22 12:27	1
Fluoride	0.20	U	0.20	0.067	mg/L			03/04/22 12:27	1
Sulfate	0.20	U	0.20	0.095	mg/L			03/04/22 12:27	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 500-645699/10
Matrix: Water
Analysis Batch: 645699

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.00	3.27		mg/L		109	80 - 120
Fluoride	1.00	0.939		mg/L		94	80 - 120
Sulfate	5.00	4.96		mg/L		99	80 - 120

Lab Sample ID: MB 500-645748/3
Matrix: Water
Analysis Batch: 645748

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.20	U	0.20	0.17	mg/L			03/05/22 10:50	1

Lab Sample ID: LCS 500-645748/4
Matrix: Water
Analysis Batch: 645748

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.00	3.38		mg/L		113	80 - 120

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

Lab Sample ID: MB 500-644711/1
Matrix: Water
Analysis Batch: 644711

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	4.3	mg/L			02/27/22 19:21	1

Lab Sample ID: LCS 500-644711/2
Matrix: Water
Analysis Batch: 644711

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	250	272		mg/L		109	80 - 120

Lab Sample ID: 240-163016-1 DU
Matrix: Water
Analysis Batch: 644711

Client Sample ID: MW-16-01_20220222
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	330		320		mg/L		3	5

Metals

Prep Batch: 645034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163016-1	MW-16-01_20220222	Total Recoverable	Water	3005A	
240-163016-2	MW-16-02_20220222	Total Recoverable	Water	3005A	
240-163016-3	MW-16-03_20220222	Total Recoverable	Water	3005A	
240-163016-4	MW-17-06_20220222	Total Recoverable	Water	3005A	
240-163016-6	DUP-01_20220222	Total Recoverable	Water	3005A	
MB 500-645034/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-645034/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-163016-1 MS	MW-16-01_20220222	Total Recoverable	Water	3005A	
240-163016-1 MSD	MW-16-01_20220222	Total Recoverable	Water	3005A	
240-163016-1 DU	MW-16-01_20220222	Total Recoverable	Water	3005A	

Prep Batch: 645208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163016-5	MW-17-07_20220222	Total Recoverable	Water	3005A	
MB 500-645208/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-645208/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 645227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163016-1	MW-16-01_20220222	Total Recoverable	Water	6010D	645034
240-163016-2	MW-16-02_20220222	Total Recoverable	Water	6010D	645034
240-163016-3	MW-16-03_20220222	Total Recoverable	Water	6010D	645034
240-163016-4	MW-17-06_20220222	Total Recoverable	Water	6010D	645034
240-163016-6	DUP-01_20220222	Total Recoverable	Water	6010D	645034
MB 500-645034/1-A	Method Blank	Total Recoverable	Water	6010D	645034
LCS 500-645034/2-A	Lab Control Sample	Total Recoverable	Water	6010D	645034
240-163016-1 MS	MW-16-01_20220222	Total Recoverable	Water	6010D	645034
240-163016-1 MSD	MW-16-01_20220222	Total Recoverable	Water	6010D	645034
240-163016-1 DU	MW-16-01_20220222	Total Recoverable	Water	6010D	645034

Analysis Batch: 645411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163016-5	MW-17-07_20220222	Total Recoverable	Water	6010D	645208
MB 500-645208/1-A	Method Blank	Total Recoverable	Water	6010D	645208
LCS 500-645208/2-A	Lab Control Sample	Total Recoverable	Water	6010D	645208

Analysis Batch: 645716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163016-1	MW-16-01_20220222	Total Recoverable	Water	6020B	645034
240-163016-2	MW-16-02_20220222	Total Recoverable	Water	6020B	645034
240-163016-3	MW-16-03_20220222	Total Recoverable	Water	6020B	645034
240-163016-4	MW-17-06_20220222	Total Recoverable	Water	6020B	645034
240-163016-4	MW-17-06_20220222	Total Recoverable	Water	6020B	645034
240-163016-5	MW-17-07_20220222	Total Recoverable	Water	6020B	645208
240-163016-5	MW-17-07_20220222	Total Recoverable	Water	6020B	645208
240-163016-6	DUP-01_20220222	Total Recoverable	Water	6020B	645034
MB 500-645034/1-A	Method Blank	Total Recoverable	Water	6020B	645034
MB 500-645208/1-A	Method Blank	Total Recoverable	Water	6020B	645208
LCS 500-645034/2-A	Lab Control Sample	Total Recoverable	Water	6020B	645034
LCS 500-645208/2-A	Lab Control Sample	Total Recoverable	Water	6020B	645208
240-163016-1 MS	MW-16-01_20220222	Total Recoverable	Water	6020B	645034

Metals (Continued)

Analysis Batch: 645716 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163016-1 MSD	MW-16-01_20220222	Total Recoverable	Water	6020B	645034
240-163016-1 DU	MW-16-01_20220222	Total Recoverable	Water	6020B	645034

Prep Batch: 645876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163016-2	MW-16-02_20220222	Total Recoverable	Water	3005A	
MB 500-645876/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-645876/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 646043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163016-2	MW-16-02_20220222	Total Recoverable	Water	6020B	645876
MB 500-645876/1-A	Method Blank	Total Recoverable	Water	6020B	645876
LCS 500-645876/2-A	Lab Control Sample	Total Recoverable	Water	6020B	645876

General Chemistry

Analysis Batch: 644711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163016-1	MW-16-01_20220222	Total/NA	Water	SM 2540C	
240-163016-2	MW-16-02_20220222	Total/NA	Water	SM 2540C	
240-163016-3	MW-16-03_20220222	Total/NA	Water	SM 2540C	
240-163016-4	MW-17-06_20220222	Total/NA	Water	SM 2540C	
240-163016-5	MW-17-07_20220222	Total/NA	Water	SM 2540C	
240-163016-6	DUP-01_20220222	Total/NA	Water	SM 2540C	
MB 500-644711/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-644711/2	Lab Control Sample	Total/NA	Water	SM 2540C	
240-163016-1 DU	MW-16-01_20220222	Total/NA	Water	SM 2540C	

Analysis Batch: 645699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163016-1	MW-16-01_20220222	Total/NA	Water	9056A	
240-163016-1	MW-16-01_20220222	Total/NA	Water	9056A	
240-163016-2	MW-16-02_20220222	Total/NA	Water	9056A	
240-163016-2	MW-16-02_20220222	Total/NA	Water	9056A	
240-163016-3	MW-16-03_20220222	Total/NA	Water	9056A	
240-163016-3	MW-16-03_20220222	Total/NA	Water	9056A	
240-163016-4	MW-17-06_20220222	Total/NA	Water	9056A	
240-163016-4	MW-17-06_20220222	Total/NA	Water	9056A	
240-163016-5	MW-17-07_20220222	Total/NA	Water	9056A	
240-163016-5	MW-17-07_20220222	Total/NA	Water	9056A	
240-163016-6	DUP-01_20220222	Total/NA	Water	9056A	
240-163016-6	DUP-01_20220222	Total/NA	Water	9056A	
MB 500-645699/9	Method Blank	Total/NA	Water	9056A	
LCS 500-645699/10	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 645748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163016-5	MW-17-07_20220222	Total/NA	Water	9056A	
MB 500-645748/3	Method Blank	Total/NA	Water	9056A	
LCS 500-645748/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-163016-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-16-01_20220222 — Lab Sample ID: 240-163016-1

Date Collected: 02/22/22 11:00 — **Matrix: Water**
Date Received: 02/24/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			645034	03/01/22 09:08		TAL CHI
Total Recoverable	Analysis	6010D		1	645227	03/01/22 14:35	JJB	TAL CHI
Total Recoverable	Prep	3005A			645034	03/01/22 09:08		TAL CHI
Total Recoverable	Analysis	6020B		1	645716	03/04/22 11:30	FXG	TAL CHI
Total/NA	Analysis	9056A		1	645699	03/04/22 16:12	EAT	TAL CHI
Total/NA	Analysis	9056A		25	645699	03/04/22 16:26	EAT	TAL CHI
Total/NA	Analysis	SM 2540C		1	644711	02/27/22 19:36	CLB	TAL CHI

Client Sample ID: MW-16-02_20220222 — Lab Sample ID: 240-163016-2

Date Collected: 02/22/22 10:05 — **Matrix: Water**
Date Received: 02/24/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			645034	03/01/22 09:08		TAL CHI
Total Recoverable	Analysis	6010D		1	645227	03/01/22 14:50	JJB	TAL CHI
Total Recoverable	Prep	3005A			645034	03/01/22 09:08		TAL CHI
Total Recoverable	Analysis	6020B		1	645716	03/04/22 11:54	FXG	TAL CHI
Total Recoverable	Prep	3005A			645876	03/07/22 08:41	BDE	TAL CHI
Total Recoverable	Analysis	6020B		1	646043	03/07/22 16:41	FXG	TAL CHI
Total/NA	Analysis	9056A		1	645699	03/04/22 16:39	EAT	TAL CHI
Total/NA	Analysis	9056A		25	645699	03/04/22 16:53	EAT	TAL CHI
Total/NA	Analysis	SM 2540C		1	644711	02/27/22 19:41	CLB	TAL CHI

Client Sample ID: MW-16-03_20220222 — Lab Sample ID: 240-163016-3

Date Collected: 02/22/22 09:05 — **Matrix: Water**
Date Received: 02/24/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			645034	03/01/22 09:08		TAL CHI
Total Recoverable	Analysis	6010D		1	645227	03/01/22 14:54	JJB	TAL CHI
Total Recoverable	Prep	3005A			645034	03/01/22 09:08		TAL CHI
Total Recoverable	Analysis	6020B		1	645716	03/04/22 11:58	FXG	TAL CHI
Total/NA	Analysis	9056A		1	645699	03/04/22 17:07	EAT	TAL CHI
Total/NA	Analysis	9056A		25	645699	03/04/22 17:20	EAT	TAL CHI
Total/NA	Analysis	SM 2540C		1	644711	02/27/22 19:44	CLB	TAL CHI

Client Sample ID: MW-17-06_20220222 — Lab Sample ID: 240-163016-4

Date Collected: 02/22/22 12:00 — **Matrix: Water**
Date Received: 02/24/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			645034	03/01/22 09:08		TAL CHI
Total Recoverable	Analysis	6010D		1	645227	03/01/22 14:57	JJB	TAL CHI

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-163016-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-17-06_20220222 — Lab Sample ID: 240-163016-4

Date Collected: 02/22/22 12:00 — **Matrix: Water**
Date Received: 02/24/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			645034	03/01/22 09:08		TAL CHI
Total Recoverable	Analysis	6020B		1	645716	03/04/22 12:01	FXG	TAL CHI
Total Recoverable	Prep	3005A			645034	03/01/22 09:08		TAL CHI
Total Recoverable	Analysis	6020B		5	645716	03/04/22 12:50	FXG	TAL CHI
Total/NA	Analysis	9056A		1	645699	03/04/22 17:34	EAT	TAL CHI
Total/NA	Analysis	9056A		250	645699	03/04/22 18:15	EAT	TAL CHI
Total/NA	Analysis	SM 2540C		1	644711	02/27/22 19:46	CLB	TAL CHI

Client Sample ID: MW-17-07_20220222 — Lab Sample ID: 240-163016-5

Date Collected: 02/22/22 15:25 — **Matrix: Water**
Date Received: 02/24/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			645208	03/02/22 08:11		TAL CHI
Total Recoverable	Analysis	6010D		1	645411	03/02/22 17:03	JJB	TAL CHI
Total Recoverable	Prep	3005A			645208	03/02/22 08:11		TAL CHI
Total Recoverable	Analysis	6020B		1	645716	03/04/22 11:19	FXG	TAL CHI
Total Recoverable	Prep	3005A			645208	03/02/22 08:11		TAL CHI
Total Recoverable	Analysis	6020B		5	645716	03/04/22 12:46	FXG	TAL CHI
Total/NA	Analysis	9056A		1	645699	03/04/22 18:28	EAT	TAL CHI
Total/NA	Analysis	9056A		250	645699	03/04/22 18:42	EAT	TAL CHI
Total/NA	Analysis	9056A		500	645748	03/05/22 14:43	EAT	TAL CHI
Total/NA	Analysis	SM 2540C		1	644711	02/27/22 19:49	CLB	TAL CHI

Client Sample ID: DUP-01_20220222 — Lab Sample ID: 240-163016-6

Date Collected: 02/22/22 00:00 — **Matrix: Water**
Date Received: 02/24/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			645034	03/01/22 09:08		TAL CHI
Total Recoverable	Analysis	6010D		1	645227	03/01/22 15:27	JJB	TAL CHI
Total Recoverable	Prep	3005A			645034	03/01/22 09:08		TAL CHI
Total Recoverable	Analysis	6020B		1	645716	03/04/22 12:04	FXG	TAL CHI
Total/NA	Analysis	9056A		1	645699	03/04/22 18:56	EAT	TAL CHI
Total/NA	Analysis	9056A		25	645699	03/04/22 19:09	EAT	TAL CHI
Total/NA	Analysis	SM 2540C		1	644711	02/27/22 19:52	CLB	TAL CHI

Laboratory References:
TAL CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-163016-1
Project/Site: CCR DTE River Rouge Power Plant

Laboratory: Eurofins Chicago

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	2903	04-29-22
Georgia	State	N/A	04-29-22
Georgia (DW)	State	939	04-30-21 *
Hawaii	State	NA	04-29-22
Illinois	NELAP	IL00035	04-29-22
Indiana	State	C-IL-02	04-29-22
Iowa	State	082	05-01-22
Kansas	NELAP	E-10161	10-31-22
Kentucky (UST)	State	AI # 108083	04-29-22
Kentucky (WW)	State	KY90023	12-31-22
Louisiana	NELAP	02046	06-30-22
Mississippi	State	NA	04-30-22
North Carolina (WW/SW)	State	291	12-31-22
North Dakota	State	R-194	04-29-22
Oklahoma	State	8908	08-31-22
South Carolina	State	77001003	04-29-22
USDA	US Federal Programs	P330-18-00018	02-11-24
Wisconsin	State	999580010	08-31-22
Wyoming	State	8TMS-Q	04-30-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

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

05/10-3 0-4/0-2

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing America

Client Information	Sampler:	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-91330-31405.1
Client Contact: ~~Chris Scieszka~~ KELLY CRATSENBURG	Phone:	E-Mail: Kris.Brooks@Eurofinset.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 #: TBD			
Email: ~~CScieszka@trccompanies.com~~ Kcratsenburg@trcompanies.com	WO #: 413519.0005			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
Site: Michigan	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010B, 6020, 7470A App III, App IV: Cu, Ni, As, V, Zn	9315_Ra226, 9320_Ra228	2540C_Calcd, 9056A_28D	6020 - (MOD) Metals - As, Li	Total Number of containers	Special Instructions/Note:
Preservation Code:							D	D	N	D		
MW-16-01 _ 20220222	2.22.2022	1100	G	Water	N	N	X	X	X			
MW-16-02 _ 20220222		1005		Water			X	X	X			
MW-16-03 _ 20220222		0905		Water			X	X	X			
MW-17-06 _ 20220222		1200		Water			X	X	X			
MW-17-07 _ 20220222		1525		Water			X	X	X			
DUP-01 _ 20220222		/		Water			X	X	X			
				Water								
EW-01 _ 20220222	2.22.2022	1420	G	Water						X		
~~EW-02 _ 20220222~~				Water								NOT COLLECTED
EW-03 _ 20220222	2.22.2022	1410	G	Water						X		
EW-04 _ 20220222	2.22.2022	1405	G	Water						X		

240-163016 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
B. YELEN	2.23.22 0900	TRC	TRC STAFF	2.23.22 0900	TRC
Relinquished by:	Date/Time: 2.23.22 11:47	Company TRC	Received by:	Date/Time: 2.23.22 1149	Company FEDEX
Relinquished by:	Date/Time: 2.23.22 1300	Company	Received by: M. A. A.	Date/Time: 2/24/22 8:00	Company EETNC

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

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

3/11/2022

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

0-5/0-3 0-4/0-2

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing America

Client Information	Sampler:	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-91330-31405.2
Client Contact: ~~Chris Scieszka~~ KEN/ CRATSENBURG	Phone:	E-Mail: Kris.Brooks@Eurofinset.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 #: TBD			
Email: Kcratsenburg@trccompanies.com CScieszka@trccompanies.com	WO #: 413519.0005			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
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, 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)	6010B, 6020, 7470A	9315_Ra226, 9320_Ra228	2540C_Calcd, 9056A_28D	6020 - (MOD) Metals - As, Li	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	D		
~~EW-05~~				Water								NOT COLLECTED
~~EW-06~~				Water								NOT COLLECTED
EW-07_20220222	2.22.2022	1345	G	Water	N	N				X		
EW-08_20220222	"	1335	"	Water	"	"				X		
EW-09_20220222	"	1320	"	Water	"	"				X		
EW-10_20220222	"	1305	"	Water	"	"				X		
EW-11_20220222	"	1250	"	Water	"	"				X		
DUP-02_20220222	"	"	"	Water	"	"				X		
				Water								

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
B. YEEN	2.23.22 0900	TRC	TRC STOR	2.23.22 0900	TRC
	2/23/22 11:47	TRC		2.23.22 1144	EETA
	2.23.22 1300	EETA		2-23-22 8:00	EETNE

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

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

3/11/2022

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____
Canton Facility

Client TRC Environmental Corp. Site Name _____ Cooler unpacked by: Matthew Surma
Cooler Received on 2/24/22 Opened on 2/24/22
FedEx: 1st Grd Exp UPS FAS (Clipper) Client Drop Off TestAmerica Courier Other _____
Receipt After-hours: Drop-off Date/Time _____ Storage Location _____
TestAmerica Cooler # TA 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-14 (CF **-0.2** °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
IR GUN #IR-15 (CF **-0.7**°C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(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# **HC157842**
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) MW-17-07 (Nitric 500mL Plastic) will need further ~~were further~~ preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login # :

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form				
Cooler Description (Circle)	**IR Gun # (Circle)**	**Observed Temp °C**	**Corrected Temp °C**	**Coolant (Circle)**
TA Client Box Other (circled: TA)	IR-14 IR-15 (circled: IR-14)	0.4	0.2	Wet Ice Blue Ice Dry Ice Water None (circled: Wet Ice)
TA Client Box Other (circled: TA)	IR-14 IR-15 (circled: IR-14)	0.5	0.3	Wet Ice Blue Ice Dry Ice Water None (circled: Wet Ice)
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
				☐ See Temperature Excursion Form

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Coolers

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 America

Client Information (Sub Contract Lab)	Sampler	Lab PM. Brooks Kris M	Carrier Tracking No(s)	COC No. 240-149324 1
Client Contact. Shipping/Receiving	Phone	E-Mail Kris Brooks@Eurofinset.com	State of Origin Michigan	Page. Page 1 of 2
Company. Eurofins Environment Testing North Centr		Accreditations Required (See note):		Job #. 240-163016-1
Address 2417 Bond Street,	Due Date Requested. 3/9/2022			Preservation Codes
City. University Park	TAT Requested (days).			A HCL M Hexane B NaOH N None C Zn Acetate O AsNaO2 D Nitric Acid P Na2O4S E NaHSO4 Q Na2SO3 F MeOH R Na2S2O3 G Amchlor S H2SO4 H Ascorbic Acid T TSP Dodecahydrate I Ice U Acetone J DI Water V MCAA K EDTA W pH 4-5 L EDA Z other (specify)
State Zip IL 60484				
Phone. 708-534-5200(Tel) 708-534-5211(Fax)	PO #.			Other.
Email	WO #.			
Project Name. CCR DTE River Rouge Power Plant	Project #. 24016806			
Site TRC CCR DTE River Rouge Power Plant	SSOW#.			

240-163016 COC

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010D/3005A (MOD) Single Element	6020B/3005A (MOD) Ca,Sb,As,Ba,Be,Cd,Cr,Co,Li,Mo,Se,T	2540C_Calcd	9056A/ Chloride, Fluoride, Sulfate	6020B/3005A Metals - As Li	Total Number of containers	Special Instructions/Note.
			Preservation Code:										
MW-16-01_20220222 (240-163016-1)	2/22/22	11:00 Eastern		Water			X	X	X	X		2	
MW-16-02_20220222 (240-163016-2)	2/22/22	10 05 Eastern		Water			X	X	X	X		2	
MW-16-03_20220222 (240-163016-3)	2/22/22	09:05 Eastern		Water			X	X	X	X		2	
MW-17-06_20220222 (240-163016-4)	2/22/22	12 00 Eastern		Water			X	X	X	X		2	
MW-17-07_20220222 (240-163016-5)	2/22/22	15 25 Eastern		Water			X	X	X	X		2	
DUP-01_20220222 (240-163016-6)	2/22/22	Eastern		Water							X	2	
EW-1_20220222 (240-163016-7)	2/22/22	14 20 Eastern		Water							X	1	
EW-3_20220222 (240-163016-8)	2/22/22	14 10 Eastern		Water							X	1	
EW-4_20220222 (240-163016-9)	2/22/22	14 05 Eastern		Water							X	1	

Note Since laboratory accreditations are subject to change Eurofins Environment Testing North Central LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing North Central LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing North Central LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing North Central LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by.	Date	Time	Method of Shipment:

	Relinquished by.	Date/Time	Company	Received by.	Date/Time	Company
1	[signature]	2-25-22 948	ETA	Stephanie Hemond	2/26/22 1110	~~EETA~~
2	Relinquished by.	Date/Time.	Company	Received by.	Date/Time.	Company
3	Relinquished by.	Date/Time	Company	Received by.	Date/Time	Company

Custody Seals Intact. ∆ Yes ∆ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks	1.6 + 1.1, uncnilled

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 America

Client Information (Sub Contract Lab)	Sampler	Lab PM: Brooks Kris M	Carrier Tracking No(s):	COC No: 240-149324.2
Client Contact: Shipping/Receiving	Phone	E-Mail: Kris Brooks@Eurofinset.com	State of Origin: Michigan	Page: Page 2 of 2
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note):		Job #: 240-163016-1
Address: 2417 Bond Street	Due Date Requested: 3/9/2022			
City: University Park	TAT Requested (days):			
State Zip: IL, 60484				
Phone: 708-534-5200(Tel) 708-534-5211(Fax)	PO #:			
Email	WO #:			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
Site: TRC CCR DTE River Rouge Power Plant	SSOW#:			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010D/3005A (MOD) Single Element	6020B/3005A (MOD) Ca,Sb,As,Ba,Be,Cd,Cr,Co,Li,Mo,Se,T	2540C_Calcd	9056A/ Chloride, Fluoride, Sulfate	6020B/3005A Metals - As Li	Total Number of containers	Special Instructions/Note
			Preservation Code:										
EW-7_20220222 (240-163016-10)	2/22/22	13 45 Eastern		Water							X	1	
EW-8_20220222 (240-163016-11)	2/22/22	13 35 Eastern		Water							X	1	
EW-9_20220222 (240-163016-12)	2/22/22	13.20 Eastern		Water							X	1	
EW-10_20220222 (240-163016-13)	2/22/22	13 05 Eastern		Water							X	1	
EW-11_20220222 (240-163016-14)	2/22/22	12 50 Eastern		Water							X	1	
DUP-02_20220222 (240-163016-15)	2/22/22	Eastern		Water							X	1	

Note: Since laboratory accreditations are subject to change Eurofins Environment Testing North Central LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing North Central LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing North Central LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing North Central LLC

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II III IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	2-25-22 948	ETA	Stephanie Hemond	2/26/22 1110	EEIA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks.

Login Sample Receipt Checklist

Client: TRC Environmental Corporation.

Job Number: 240-163016-1

Login Number: 163016
List Number: 2
Creator: Hernandez, Stephanie

List Source: Eurofins Chicago
List Creation: 02/26/22 12:02 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.1, Unchilled
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	N/A	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Tel: (330)497-9396

Laboratory Job ID: 240-163016-3
Client Project/Site: CCR DTE River Rouge Power Plant

For:
TRC Environmental Corporation.
1540 Eisenhower Place
Ann Arbor, Michigan 48108-7080

Attn: Mr. Vincent Buening

Authorized for release by:
3/25/2022 8:01:03 PM

Kris Brooks, Project Manager II
(330)966-9790
Kris.Brooks@Eurofinset.com

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Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-163016-3
Project/Site: CCR DTE River Rouge Power Plant

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

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

Case Narrative

Client: TRC Environmental Corporation. Job ID: 240-163016-3
Project/Site: CCR DTE River Rouge Power Plant

Job ID: 240-163016-3

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-163016-3

Comments
No additional comments.

Receipt
The samples were received on 2/24/2022 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 2 coolers at receipt time were 0.2º C and 0.3º C.

RAD
Methods 903.0, 9315: Radium 226 batch 552927
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-16-01_20220222 (240-163016-1), MW-16-02_20220222 (240-163016-2), MW-16-03_20220222 (240-163016-3), MW-17-06_20220222 (240-163016-4), MW-17-07_20220222 (240-163016-5), DUP-01_20220222 (240-163016-6), (LCS 160-552927/1-A), (LCSD 160-552927/2-A) and (MB 160-552927/21-A)

Method 9320: Radium 228 batch 552930
The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: MW-17-07_20220222 (240-163016-5). Analytical results are reported with the detection limit achieved.

Methods 904.0, 9320: Radium 228 batch 552930
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-16-01_20220222 (240-163016-1), MW-16-02_20220222 (240-163016-2), MW-16-03_20220222 (240-163016-3), MW-17-06_20220222 (240-163016-4), MW-17-07_20220222 (240-163016-5), DUP-01_20220222 (240-163016-6), (LCS 160-552930/1-A), (LCSD 160-552930/2-A) and (MB 160-552930/21-A)

Method PrecSep_0: Radium-228 Prep Batch 160-552930
The following samples were prepared at a reduced aliquot due to Matrix: MW-16-01_20220222 (240-163016-1), MW-16-02_20220222 (240-163016-2), MW-16-03_20220222 (240-163016-3), MW-17-06_20220222 (240-163016-4), MW-17-07_20220222 (240-163016-5) and DUP-01_20220222 (240-163016-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-552927
The following samples were prepared at a reduced aliquot due to Matrix: MW-16-01_20220222 (240-163016-1), MW-16-02_20220222 (240-163016-2), MW-16-03_20220222 (240-163016-3), MW-17-06_20220222 (240-163016-4), MW-17-07_20220222 (240-163016-5) and DUP-01_20220222 (240-163016-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

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: 240-163016-3
Project/Site: CCR DTE River Rouge Power Plant

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-163016-3
Project/Site: CCR DTE River Rouge Power Plant

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-163016-1	MW-16-01_20220222	Water	02/22/22 11:00	02/24/22 08:00
240-163016-2	MW-16-02_20220222	Water	02/22/22 10:05	02/24/22 08:00
240-163016-3	MW-16-03_20220222	Water	02/22/22 09:05	02/24/22 08:00
240-163016-4	MW-17-06_20220222	Water	02/22/22 12:00	02/24/22 08:00
240-163016-5	MW-17-07_20220222	Water	02/22/22 15:25	02/24/22 08:00
240-163016-6	DUP-01_20220222	Water	02/22/22 00:00	02/24/22 08:00

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-163016-3
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-16-01_20220222 Lab Sample ID: 240-163016-1

No Detections.

Client Sample ID: MW-16-02_20220222 Lab Sample ID: 240-163016-2

No Detections.

Client Sample ID: MW-16-03_20220222 Lab Sample ID: 240-163016-3

No Detections.

Client Sample ID: MW-17-06_20220222 Lab Sample ID: 240-163016-4

No Detections.

Client Sample ID: MW-17-07_20220222 Lab Sample ID: 240-163016-5

No Detections.

Client Sample ID: DUP-01_20220222 Lab Sample ID: 240-163016-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-16-01_20220222 Lab Sample ID: 240-163016-1

Date Collected: 02/22/22 11:00 **Matrix: Water**
Date Received: 02/24/22 08:00

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.436		0.278	0.281	1.00	0.382	pCi/L	03/02/22 09:14	03/25/22 07:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.1*		*40 - 110*	*03/02/22 09:14*	*03/25/22 07:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.664		0.337	0.343	1.00	0.487	pCi/L	03/02/22 09:49	03/24/22 13:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.1*		*40 - 110*	*03/02/22 09:49*	*03/24/22 13:36*	*1*
Y Carrier	*82.6*		*40 - 110*	*03/02/22 09:49*	*03/24/22 13:36*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.10		0.437	0.443	5.00	0.487	pCi/L		03/25/22 16:00	1

Client Sample ID: MW-16-02_20220222
Lab Sample ID: 240-163016-2

Date Collected: 02/22/22 10:05
Matrix: Water

Date Received: 02/24/22 08:00

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.475		0.290	0.293	1.00	0.399	pCi/L	03/02/22 09:14	03/25/22 07:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*03/02/22 09:14*	*03/25/22 07:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.826		0.409	0.416	1.00	0.601	pCi/L	03/02/22 09:49	03/24/22 13:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*03/02/22 09:49*	*03/24/22 13:37*	*1*
Y Carrier	*76.3*		*40 - 110*	*03/02/22 09:49*	*03/24/22 13:37*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.30		0.501	0.509	5.00	0.601	pCi/L		03/25/22 16:00	1

Client Sample ID: MW-16-03_20220222 Lab Sample ID: 240-163016-3

Date Collected: 02/22/22 09:05 **Matrix: Water**
Date Received: 02/24/22 08:00

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.279	U	0.229	0.231	1.00	0.336	pCi/L	03/02/22 09:14	03/25/22 07:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.4*		*40 - 110*	*03/02/22 09:14*	*03/25/22 07:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.472	U	0.328	0.331	1.00	0.505	pCi/L	03/02/22 09:49	03/24/22 13:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.4*		*40 - 110*	*03/02/22 09:49*	*03/24/22 13:37*	*1*
Y Carrier	*84.1*		*40 - 110*	*03/02/22 09:49*	*03/24/22 13:37*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.751**		0.400	0.404	5.00	0.505	pCi/L		03/25/22 16:00	1

Client Sample ID: MW-17-06_20220222 Lab Sample ID: 240-163016-4

Date Collected: 02/22/22 12:00 **Matrix: Water**
Date Received: 02/24/22 08:00

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.11		0.424	0.436	1.00	0.483	pCi/L	03/02/22 09:14	03/25/22 07:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*71.7*		*40 - 110*	*03/02/22 09:14*	*03/25/22 07:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.86		0.572	0.597	1.00	0.746	pCi/L	03/02/22 09:49	03/24/22 13:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*71.7*		*40 - 110*	*03/02/22 09:49*	*03/24/22 13:37*	*1*
Y Carrier	*81.5*		*40 - 110*	*03/02/22 09:49*	*03/24/22 13:37*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.97		0.712	0.739	5.00	0.746	pCi/L		03/25/22 16:00	1

Client Sample ID: MW-17-07_20220222 Lab Sample ID: 240-163016-5

Date Collected: 02/22/22 15:25 **Matrix: Water**
Date Received: 02/24/22 08:00

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.44		0.649	0.662	1.00	0.750	pCi/L	03/02/22 09:14	03/25/22 07:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*59.1*		*40 - 110*	*03/02/22 09:14*	*03/25/22 07:58*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.69	G	1.03	1.06	1.00	1.45	pCi/L	03/02/22 09:49	03/24/22 13:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*59.1*		*40 - 110*	*03/02/22 09:49*	*03/24/22 13:38*	*1*
Y Carrier	*84.5*		*40 - 110*	*03/02/22 09:49*	*03/24/22 13:38*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	4.13		1.22	1.25	5.00	1.45	pCi/L		03/25/22 16:00	1

Client Sample ID: DUP-01_20220222 Lab Sample ID: 240-163016-6

Date Collected: 02/22/22 00:00 **Matrix: Water**
Date Received: 02/24/22 08:00

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.366	U	0.295	0.297	1.00	0.446	pCi/L	03/02/22 09:14	03/25/22 07:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.6*		*40 - 110*	*03/02/22 09:14*	*03/25/22 07:58*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.549	U	0.359	0.363	1.00	0.551	pCi/L	03/02/22 09:49	03/24/22 13:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.6*		*40 - 110*	*03/02/22 09:49*	*03/24/22 13:38*	*1*
Y Carrier	*81.5*		*40 - 110*	*03/02/22 09:49*	*03/24/22 13:38*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.915**		0.465	0.469	5.00	0.551	pCi/L		03/25/22 16:00	1

Tracer/Carrier Summary

Client: TRC Environmental Corporation. Job ID: 240-163016-3
Project/Site: CCR DTE River Rouge Power Plant

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
240-163016-1	MW-16-01_20220222	93.1
240-163016-2	MW-16-02_20220222	94.1
240-163016-3	MW-16-03_20220222	91.4
240-163016-4	MW-17-06_20220222	71.7
240-163016-5	MW-17-07_20220222	59.1
240-163016-6	DUP-01_20220222	91.6
LCS 160-552927/1-A	Lab Control Sample	76.1
LCSD 160-552927/2-A	Lab Control Sample Dup	95.1
MB 160-552927/21-A	Method Blank	94.8

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
240-163016-1	MW-16-01_20220222	93.1	82.6
240-163016-2	MW-16-02_20220222	94.1	76.3
240-163016-3	MW-16-03_20220222	91.4	84.1
240-163016-4	MW-17-06_20220222	71.7	81.5
240-163016-5	MW-17-07_20220222	59.1	84.5
240-163016-6	DUP-01_20220222	91.6	81.5
LCS 160-552930/1-A	Lab Control Sample	76.1	83.7
LCSD 160-552930/2-A	Lab Control Sample Dup	95.1	80.4
MB 160-552930/21-A	Method Blank	94.8	84.9

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-552927/21-A
Matrix: Water
Analysis Batch: 557097

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 552927

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.2916		0.192	0.194	1.00	0.264	pCi/L	03/02/22 09:14	03/25/22 07:53	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.8*		*40 - 110*	*03/02/22 09:14*	*03/25/22 07:53*	*1*

Lab Sample ID: LCS 160-552927/1-A
Matrix: Water
Analysis Batch: 557095

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 552927

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.3	10.87		1.38	1.00	0.328	pCi/L	96	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*76.1*		*40 - 110*

Lab Sample ID: LCSD 160-552927/2-A
Matrix: Water
Analysis Batch: 557095

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 552927

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.3	10.23		1.26	1.00	0.331	pCi/L	90	75 - 125	0.25	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*95.1*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-552930/21-A
Matrix: Water
Analysis Batch: 556886

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 552930

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1774	U	0.252	0.253	1.00	0.422	pCi/L	03/02/22 09:49	03/24/22 13:38	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.8*		*40 - 110*	*03/02/22 09:49*	*03/24/22 13:38*	*1*
Y Carrier	*84.9*		*40 - 110*	*03/02/22 09:49*	*03/24/22 13:38*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-552930/1-A
Matrix: Water
Analysis Batch: 556885

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 552930

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			8.76	9.328		1.16	1.00	0.485	pCi/L	106	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*76.1*		*40 - 110*
Y Carrier	*83.7*		*40 - 110*

Lab Sample ID: LCSD 160-552930/2-A
Matrix: Water
Analysis Batch: 556885

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 552930

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			8.76	8.941		1.07	1.00	0.425	pCi/L	102	75 - 125	0.17	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*95.1*		*40 - 110*
Y Carrier	*80.4*		*40 - 110*

QC Association Summary

Client: TRC Environmental Corporation. Job ID: 240-163016-3
Project/Site: CCR DTE River Rouge Power Plant

Rad

Prep Batch: 552927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163016-1	MW-16-01_20220222	Total/NA	Water	PrecSep-21	
240-163016-2	MW-16-02_20220222	Total/NA	Water	PrecSep-21	
240-163016-3	MW-16-03_20220222	Total/NA	Water	PrecSep-21	
240-163016-4	MW-17-06_20220222	Total/NA	Water	PrecSep-21	
240-163016-5	MW-17-07_20220222	Total/NA	Water	PrecSep-21	
240-163016-6	DUP-01_20220222	Total/NA	Water	PrecSep-21	
MB 160-552927/21-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-552927/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-552927/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 552930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163016-1	MW-16-01_20220222	Total/NA	Water	PrecSep_0	
240-163016-2	MW-16-02_20220222	Total/NA	Water	PrecSep_0	
240-163016-3	MW-16-03_20220222	Total/NA	Water	PrecSep_0	
240-163016-4	MW-17-06_20220222	Total/NA	Water	PrecSep_0	
240-163016-5	MW-17-07_20220222	Total/NA	Water	PrecSep_0	
240-163016-6	DUP-01_20220222	Total/NA	Water	PrecSep_0	
MB 160-552930/21-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-552930/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-552930/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-163016-3
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-16-01_20220222 — Lab Sample ID: 240-163016-1

Date Collected: 02/22/22 11:00 — **Matrix: Water**
Date Received: 02/24/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			552927	03/02/22 09:14	LPS	TAL SL
Total/NA	Analysis	9315		1	557108	03/25/22 07:57	FLC	TAL SL
Total/NA	Prep	PrecSep_0			552930	03/02/22 09:49	LPS	TAL SL
Total/NA	Analysis	9320		1	556886	03/24/22 13:36	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	557126	03/25/22 16:00	SCB	TAL SL

Client Sample ID: MW-16-02_20220222 — Lab Sample ID: 240-163016-2

Date Collected: 02/22/22 10:05 — **Matrix: Water**
Date Received: 02/24/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			552927	03/02/22 09:14	LPS	TAL SL
Total/NA	Analysis	9315		1	557108	03/25/22 07:57	FLC	TAL SL
Total/NA	Prep	PrecSep_0			552930	03/02/22 09:49	LPS	TAL SL
Total/NA	Analysis	9320		1	556886	03/24/22 13:37	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	557126	03/25/22 16:00	SCB	TAL SL

Client Sample ID: MW-16-03_20220222 — Lab Sample ID: 240-163016-3

Date Collected: 02/22/22 09:05 — **Matrix: Water**
Date Received: 02/24/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			552927	03/02/22 09:14	LPS	TAL SL
Total/NA	Analysis	9315		1	557108	03/25/22 07:57	FLC	TAL SL
Total/NA	Prep	PrecSep_0			552930	03/02/22 09:49	LPS	TAL SL
Total/NA	Analysis	9320		1	556886	03/24/22 13:37	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	557126	03/25/22 16:00	SCB	TAL SL

Client Sample ID: MW-17-06_20220222 — Lab Sample ID: 240-163016-4

Date Collected: 02/22/22 12:00 — **Matrix: Water**
Date Received: 02/24/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			552927	03/02/22 09:14	LPS	TAL SL
Total/NA	Analysis	9315		1	557108	03/25/22 07:57	FLC	TAL SL
Total/NA	Prep	PrecSep_0			552930	03/02/22 09:49	LPS	TAL SL
Total/NA	Analysis	9320		1	556886	03/24/22 13:37	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	557126	03/25/22 16:00	SCB	TAL SL

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-163016-3
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-17-07_20220222 Lab Sample ID: 240-163016-5

Date Collected: 02/22/22 15:25 **Matrix: Water**
Date Received: 02/24/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			552927	03/02/22 09:14	LPS	TAL SL
Total/NA	Analysis	9315		1	557108	03/25/22 07:58	FLC	TAL SL
Total/NA	Prep	PrecSep_0			552930	03/02/22 09:49	LPS	TAL SL
Total/NA	Analysis	9320		1	556886	03/24/22 13:38	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	557126	03/25/22 16:00	SCB	TAL SL

Client Sample ID: DUP-01_20220222 Lab Sample ID: 240-163016-6

Date Collected: 02/22/22 00:00 **Matrix: Water**
Date Received: 02/24/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			552927	03/02/22 09:14	LPS	TAL SL
Total/NA	Analysis	9315		1	557108	03/25/22 07:58	FLC	TAL SL
Total/NA	Prep	PrecSep_0			552930	03/02/22 09:49	LPS	TAL SL
Total/NA	Analysis	9320		1	556886	03/24/22 13:38	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	557126	03/25/22 16:00	SCB	TAL SL

Laboratory References:

TAL SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-163016-3
Project/Site: CCR DTE River Rouge Power Plant

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-07-23
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	07-01-22
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	200023	11-30-22
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana	NELAP	04080	06-30-22
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-22
MI - RadChem Recognition	State	9005	06-30-22
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-22
New Jersey	NELAP	MO002	06-30-22
New York	NELAP	11616	04-01-22
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-22
Texas	NELAP	T104704193	07-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	08-01-22
Virginia	NELAP	10310	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

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

05/10-3 0-4/0-2

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing America

Client Information	Sampler:	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-91330-31405.1
Client Contact: ~~Chris Scieszka~~ KELLY CRATSENBURG	Phone:	E-Mail: Kris.Brooks@Eurofinset.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 #: TBD			
Email: ~~CScieszka@trccompanies.com~~ Kcratsenburg@trcompanies.com	WO #: 413519.0005			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
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, 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)	6010B, 6020, 7470A Appl IV, Cu, Ni, As, V, Zn	9315_Ra226, 9320_Ra228	2540C_Calcd, 9056A_28D	6020 - (MOD) Metals - As, Li	Total Number of containers	Special Instructions/Note:
Preservation Code:							D	D	N	D		
MW-16-01_20220222	2.22.2022	1100	G	Water	N	N	X	X	X			
MW-16-02_20220222		1005		Water			X	X	X			
MW-16-03_20220222		0905		Water			X	X	X			
MW-17-06_20220222		1200		Water			X	X	X			
MW-17-07_20220222		1525		Water			X	X	X			
DUP-01_20220222		/		Water			X	X	X			
				Water								
EW-01_20220222	2.22.2022	1420	G	Water						X		
~~EW-02_20220222~~				Water								NOT COLLECTED
EW-03_20220222	2.22.2022	1410	G	Water						X		
EW-04_20220222	2.22.2022	1405	G	Water						X		

240-163016 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
B. VELEN	2.23.22 0900	TRC	TRC STAFF	2.23.22 0900	TRC
[signature]	2.23.22 11:47	TRC	[signature]	2.23.22 1149	FEDEX
[signature]	2.23.22 1300		M. A. A.	2/24/22 8:00	EETNC

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

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

3/25/2022

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

0-5/0-3 0-4/0-2

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing America

Client Information	Sampler:	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-91330-31405.2
Client Contact: ~~Chris Scieszka~~ KEN/ CRATSENBURG	Phone:	E-Mail: Kris.Brooks@Eurofinset.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 #: TBD			
Email: Kcratsenburg@trccompanies.com CScieszka@trccompanies.com	WO #: 413519.0005			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
Site: Michigan	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010B, 6020, 7470A	9315_Ra226, 9320_Ra228	2540C_Calcd, 9056A_28D	6020 - (MOD) Metals - As, Li	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	D	N	D	X	
~~EW-05~~				Water								NOT COLLECTED
~~EW-06~~				Water								NOT COLLECTED
EW-07_20220222	2.22.2022	1345	G	Water	N	N				X		
EW-08_20220222	"	1335	"	Water	"	"				X		
EW-09_20220222	"	1320	"	Water	"	"				X		
EW-10_20220222	"	1305	"	Water	"	"				X		
EW-11_20220222	"	1250	"	Water	"	"				X		
DUP-02_20220222	"	"	"	Water	"	"				X		
				Water								

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	B. YAEN	2.23.22 0900	TRC	TRC STOR	2.23.22 0900	TRC
2		2/23/22 11:47	TRC		2.23.22 1144	EETA
3		2.23.22 1300	EETA		2-23-22 8:00	EETNE

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

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Page 22 of 26

3/25/2022

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____
Canton Facility

Client TRC Environmental Corp. Site Name _____ Cooler unpacked by: Matthew Surma

Cooler Received on 2/24/22 Opened on 2/24/22

FedEx: 1st Grd Exp UPS FAS (Clipper) Client Drop Off TestAmerica Courier Other _____

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

TestAmerica Cooler # TA 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-14 (CF **-0.2** °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   IR GUN #IR-15 (CF **-0.7**°C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 (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# **HC157842**
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) MW-17-07 (Nitric 500mL Plastic) will need further ~~were further~~ preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login # : 1

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA Client Box Other	IR-14 IR-15	0.4	0.2	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	0.5	0.3	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None

☐ See Temperature Excursion Form

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Coolers

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

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-149323.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Kris.Brooks@Eurofinset.com	State of Origin: Michigan	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 240-163016-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/9/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
Site: TRC CCR DTE River Rouge Power Plant	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, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-16-01_20220222 (240-163016-1)	2/22/22	11:00 Eastern		Water			X	X	2	
MW-16-02_20220222 (240-163016-2)	2/22/22	10:05 Eastern		Water			X	X	2	
MW-16-03_20220222 (240-163016-3)	2/22/22	09:05 Eastern		Water			X	X	2	
MW-17-06_20220222 (240-163016-4)	2/22/22	12:00 Eastern		Water			X	X	2	
MW-17-07_20220222 (240-163016-5)	2/22/22	15:25 Eastern		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2-25-22 942	ETA	FED EX		
Relinquished by: FED EX	Date/Time:	Company	Received by: Sierra Worthington	Date/Time: FEB 26 2022 0840	Company GMSR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: TRC Environmental Corporation.

Job Number: 240-163016-3

Login Number: 163016
List Number: 3
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 02/28/22 10:16 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 1/5/2023 11:24:15 AM Revision 1

JOB DESCRIPTION

CCR DTE River Rouge Power Plant

JOB NUMBER

240-177345-1

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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Revision 1

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

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Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-177345-1
Project/Site: CCR DTE River Rouge Power Plant

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: 240-177345-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-177345-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 12/8/2022. The report (revision 1) is being revised due to: Cr reported to 2.0 ug/L..

Receipt
The samples were received on 12/3/2022 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 5 coolers at receipt time were 1.1º C, 1.3º C, 1.5º C, 2.(C and 2.3º C.

Metals
Method 6020: Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: MW-16-01 (240-177345-1), MW-16-02 (240-177345-2), MW-16-03 (240-177345-3), MW-17-06 (240-177345-4), MW-17-07 (240-177345-5) and DUP-01 (240-177345-6)The continuing calibration blanks and method blanks m not support the lower PQL.

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

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

Method Summary

Client: TRC Environmental Corporation. Job ID: 240-177345-1
Project/Site: CCR DTE River Rouge Power Plant

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	EET CAN
6020	Metals (ICP/MS)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
9056A	Anions, Ion Chromatography	SW846	EET CAN
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CAN
7470A	Preparation, Mercury	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: 240-177345-1
Project/Site: CCR DTE River Rouge Power Plant

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-177345-1	MW-16-01	Water	12/01/22 09:30	12/03/22 08:00
240-177345-2	MW-16-02	Water	12/01/22 13:50	12/03/22 08:00
240-177345-3	MW-16-03	Water	11/30/22 14:45	12/03/22 08:00
240-177345-4	MW-17-06	Water	12/01/22 11:00	12/03/22 08:00
240-177345-5	MW-17-07	Water	12/01/22 12:07	12/03/22 08:00
240-177345-6	DUP-01	Water	12/01/22 00:00	12/03/22 08:00

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE River Rouge Power Plant

Job ID: 240-177345-1

Client Sample ID: MW-16-01 — Lab Sample ID: 240-177345-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1300		100	100	ug/L	1		6010B	Total Recoverable
Arsenic	28		5.0	5.0	ug/L	1		6020	Total Recoverable
Barium	280		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	360000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	75		8.0	8.0	ug/L	1		6020	Total Recoverable
Molybdenum	14		5.0	5.0	ug/L	1		6020	Total Recoverable
Iron	550000		500	500	ug/L	5		6020	Total Recoverable
Nickel	2.6		2.0	2.0	ug/L	1		6020	Total Recoverable
Chloride	52		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.49		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1800		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2800		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02 — Lab Sample ID: 240-177345-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	200		100	100	ug/L	1		6010B	Total Recoverable
Barium	40		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	60000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	11		8.0	8.0	ug/L	1		6020	Total Recoverable
Iron	510		100	100	ug/L	1		6020	Total Recoverable
Chloride	42		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.40		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	30		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	300		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03 — Lab Sample ID: 240-177345-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	110		100	100	ug/L	1		6010B	Total Recoverable
Barium	24		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	60000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	260		100	100	ug/L	1		6020	Total Recoverable
Chloride	39		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.28		0.050	0.050	mg/L	1		9056A	Total/NA
Total Dissolved Solids	280		10	10	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 River Rouge Power Plant

Job ID: 240-177345-1

Client Sample ID: MW-17-06 — Lab Sample ID: 240-177345-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	390		100	100	ug/L	1		6010B	Total Recoverable
Arsenic	12		5.0	5.0	ug/L	1		6020	Total Recoverable
Barium	110		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	270000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	19		8.0	8.0	ug/L	1		6020	Total Recoverable
Molybdenum	8.2		5.0	5.0	ug/L	1		6020	Total Recoverable
Iron	14000		100	100	ug/L	1		6020	Total Recoverable
Chloride	490		10	10	mg/L	10		9056A	Total/NA
Fluoride	0.31		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	500		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2000		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-07 — Lab Sample ID: 240-177345-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	550		100	100	ug/L	1		6010B	Total Recoverable
Arsenic	17		5.0	5.0	ug/L	1		6020	Total Recoverable
Barium	29		5.0	5.0	ug/L	1		6020	Total Recoverable
Cobalt	6.6		1.0	1.0	ug/L	1		6020	Total Recoverable
Calcium	410000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	25		8.0	8.0	ug/L	1		6020	Total Recoverable
Molybdenum	13		5.0	5.0	ug/L	1		6020	Total Recoverable
Iron	20000		100	100	ug/L	1		6020	Total Recoverable
Nickel	2.6		2.0	2.0	ug/L	1		6020	Total Recoverable
Chloride	2400		50	50	mg/L	50		9056A	Total/NA
Fluoride	0.42		0.25	0.25	mg/L	5		9056A	Total/NA
Sulfate	1400		50	50	mg/L	50		9056A	Total/NA
Total Dissolved Solids	6200		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01 — Lab Sample ID: 240-177345-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	110		100	100	ug/L	1		6010B	Total Recoverable
Barium	24		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	59000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	250		100	100	ug/L	1		6020	Total Recoverable
Chloride	39		1.0	1.0	mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: DUP-01 (Continued) Lab Sample ID: 240-177345-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.28		0.050	0.050	mg/L	1		9056A	Total/NA
Total Dissolved Solids	290		10	10	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 River Rouge Power Plant

Job ID: 240-177345-1

Client Sample ID: MW-16-01

Date Collected: 12/01/22 09:30
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177345-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1300**		100	100	ug/L		12/05/22 12:00	12/06/22 22:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**28**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:17	1
Barium	**280**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:17	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:17	1
Chromium	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:17	1
Cobalt	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:17	1
Calcium	**360000**		1000	1000	ug/L		12/05/22 12:00	12/06/22 15:17	1
Lead	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:17	1
Lithium	**75**		8.0	8.0	ug/L		12/05/22 12:00	12/06/22 15:17	1
Molybdenum	**14**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:17	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:17	1
Iron	**550000**		500	500	ug/L		12/05/22 12:00	12/07/22 17:13	5
Nickel	**2.6**		2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:17	1
Vanadium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:17	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:17	1
Copper	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:17	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 12:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**52**		1.0	1.0	mg/L			12/06/22 20:40	1
Fluoride (SW846 9056A)	**0.49**		0.050	0.050	mg/L			12/06/22 20:40	1
Sulfate (SW846 9056A)	**1800**		10	10	mg/L			12/06/22 21:00	10
Total Dissolved Solids (SM 2540C)	**2800**		40	40	mg/L			12/07/22 08:21	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE River Rouge Power Plant

Job ID: 240-177345-1

Client Sample ID: MW-16-02

Date Collected: 12/01/22 13:50
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177345-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**200**		100	100	ug/L		12/05/22 12:00	12/06/22 22:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:24	1
Barium	**40**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:24	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:24	1
Chromium	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:24	1
Cobalt	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:24	1
Calcium	**60000**		1000	1000	ug/L		12/05/22 12:00	12/06/22 15:24	1
Lead	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:24	1
Lithium	**11**		8.0	8.0	ug/L		12/05/22 12:00	12/06/22 15:24	1
Molybdenum	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:24	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:24	1
Iron	**510**		100	100	ug/L		12/05/22 12:00	12/06/22 15:24	1
Nickel	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:24	1
Vanadium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:24	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:24	1
Copper	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:24	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 13:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**42**		1.0	1.0	mg/L			12/06/22 21:20	1
Fluoride (SW846 9056A)	**0.40**		0.050	0.050	mg/L			12/06/22 21:20	1
Sulfate (SW846 9056A)	**30**		1.0	1.0	mg/L			12/06/22 21:20	1
Total Dissolved Solids (SM 2540C)	**300**		10	10	mg/L			12/07/22 08:21	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE River Rouge Power Plant

Job ID: 240-177345-1

Client Sample ID: MW-16-03

Date Collected: 11/30/22 14:45
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177345-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**110**		100	100	ug/L		12/05/22 12:00	12/06/22 22:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:27	1
Barium	**24**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:27	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:27	1
Chromium	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:27	1
Cobalt	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:27	1
Calcium	**60000**		1000	1000	ug/L		12/05/22 12:00	12/06/22 15:27	1
Lead	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:27	1
Lithium	8.0	U	8.0	8.0	ug/L		12/05/22 12:00	12/06/22 15:27	1
Molybdenum	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:27	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:27	1
Iron	**260**		100	100	ug/L		12/05/22 12:00	12/06/22 15:27	1
Nickel	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:27	1
Vanadium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:27	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:27	1
Copper	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:27	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 12:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**39**		1.0	1.0	mg/L			12/06/22 22:20	1
Fluoride (SW846 9056A)	**0.28**		0.050	0.050	mg/L			12/06/22 22:20	1
Sulfate (SW846 9056A)	1.0	U	1.0	1.0	mg/L			12/06/22 22:20	1
Total Dissolved Solids (SM 2540C)	**280**		10	10	mg/L			12/07/22 08:21	1

Client: TRC Environmental Corporation.
Job ID: 240-177345-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-17-06
Lab Sample ID: 240-177345-4

Date Collected: 12/01/22 11:00
Matrix: Water
Date Received: 12/03/22 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**390**		100	100	ug/L		12/05/22 12:00	12/06/22 22:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**12**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:29	1
Barium	**110**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:29	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:29	1
Chromium	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:29	1
Cobalt	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:29	1
Calcium	**270000**		1000	1000	ug/L		12/05/22 12:00	12/06/22 15:29	1
Lead	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:29	1
Lithium	**19**		8.0	8.0	ug/L		12/05/22 12:00	12/06/22 15:29	1
Molybdenum	**8.2**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:29	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:29	1
Iron	**14000**		100	100	ug/L		12/05/22 12:00	12/06/22 15:29	1
Nickel	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:29	1
Vanadium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:29	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:29	1
Copper	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:29	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 12:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**490**		10	10	mg/L			12/06/22 23:01	10
Fluoride (SW846 9056A)	**0.31**		0.050	0.050	mg/L			12/06/22 22:41	1
Sulfate (SW846 9056A)	**500**		10	10	mg/L			12/06/22 23:01	10
Total Dissolved Solids (SM 2540C)	**2000**		40	40	mg/L			12/07/22 08:21	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-177345-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-17-07 Lab Sample ID: 240-177345-5

Date Collected: 12/01/22 12:07 **Matrix: Water**
Date Received: 12/03/22 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**550**		100	100	ug/L		12/05/22 12:00	12/06/22 22:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**17**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:32	1
Barium	**29**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:32	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:32	1
Chromium	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:32	1
Cobalt	**6.6**		1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:32	1
Calcium	**410000**		1000	1000	ug/L		12/05/22 12:00	12/06/22 15:32	1
Lead	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:32	1
Lithium	**25**		8.0	8.0	ug/L		12/05/22 12:00	12/06/22 15:32	1
Molybdenum	**13**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:32	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:32	1
Iron	**20000**		100	100	ug/L		12/05/22 12:00	12/06/22 15:32	1
Nickel	**2.6**		2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:32	1
Vanadium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:32	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:32	1
Copper	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:32	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 12:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**2400**		50	50	mg/L			12/07/22 00:21	50
Fluoride (SW846 9056A)	**0.42**		0.25	0.25	mg/L			12/07/22 00:01	5
Sulfate (SW846 9056A)	**1400**		50	50	mg/L			12/07/22 00:21	50
Total Dissolved Solids (SM 2540C)	**6200**		50	50	mg/L			12/07/22 08:21	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE River Rouge Power Plant

Job ID: 240-177345-1

Client Sample ID: DUP-01

Date Collected: 12/01/22 00:00
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177345-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**110**		100	100	ug/L		12/05/22 12:00	12/06/22 22:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:34	1
Barium	**24**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:34	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:34	1
Chromium	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:34	1
Cobalt	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:34	1
Calcium	**59000**		1000	1000	ug/L		12/05/22 12:00	12/06/22 15:34	1
Lead	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:34	1
Lithium	8.0	U	8.0	8.0	ug/L		12/05/22 12:00	12/06/22 15:34	1
Molybdenum	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:34	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:34	1
Iron	**250**		100	100	ug/L		12/05/22 12:00	12/06/22 15:34	1
Nickel	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:34	1
Vanadium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:34	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:34	1
Copper	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:34	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 12:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**39**		1.0	1.0	mg/L			12/07/22 00:41	1
Fluoride (SW846 9056A)	**0.28**		0.050	0.050	mg/L			12/07/22 00:41	1
Sulfate (SW846 9056A)	1.0	U	1.0	1.0	mg/L			12/07/22 00:41	1
Total Dissolved Solids (SM 2540C)	**290**		10	10	mg/L			12/07/22 08:21	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-554550/1-A
Matrix: Water
Analysis Batch: 554914

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 554550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	100	ug/L		12/05/22 12:00	12/06/22 21:04	1

Lab Sample ID: LCS 240-554550/2-A
Matrix: Water
Analysis Batch: 554914

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 554550

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 240-554550/1-A
Matrix: Water
Analysis Batch: 554839

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 554550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Barium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Chromium	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Cobalt	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Calcium	1000	U	1000	1000	ug/L		12/05/22 12:00	12/06/22 14:28	1
Lead	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Lithium	8.0	U	8.0	8.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Molybdenum	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Iron	100	U	100	100	ug/L		12/05/22 12:00	12/06/22 14:28	1
Nickel	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Vanadium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Copper	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 14:28	1

Lab Sample ID: LCS 240-554550/3-A
Matrix: Water
Analysis Batch: 554839

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 554550

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1000	926		ug/L		93	80 - 120
Barium	1000	932		ug/L		93	80 - 120
Cadmium	500	490		ug/L		98	80 - 120
Chromium	500	495		ug/L		99	80 - 120
Cobalt	500	468		ug/L		94	80 - 120
Calcium	25000	25900		ug/L		104	80 - 120
Lead	500	514		ug/L		103	80 - 120
Lithium	500	489		ug/L		98	80 - 120
Molybdenum	500	484		ug/L		97	80 - 120
Selenium	1000	913		ug/L		91	80 - 120
Iron	5000	4950		ug/L		99	80 - 120
Nickel	500	464		ug/L		93	80 - 120

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

Lab Sample ID: LCS 240-554550/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 554839 — **Prep Batch: 554550**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vanadium	500	495		ug/L		99	80 - 120
Silver	100	97.9		ug/L		98	80 - 120
Copper	500	463		ug/L		93	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-554551/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554782 — **Prep Batch: 554551**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 11:47	1

Lab Sample ID: LCS 240-554551/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554782 — **Prep Batch: 554551**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	5.00	4.83		ug/L		97	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-554788/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554788

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			12/06/22 20:00	1
Fluoride	0.050	U	0.050	0.050	mg/L			12/06/22 20:00	1
Sulfate	1.0	U	1.0	1.0	mg/L			12/06/22 20:00	1

Lab Sample ID: LCS 240-554788/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554788

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.6		mg/L		99	90 - 110
Fluoride	2.50	2.52		mg/L		101	90 - 110
Sulfate	50.0	50.9		mg/L		102	90 - 110

Lab Sample ID: 240-177345-2 MS — **Client Sample ID: MW-16-02**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554788

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	42		50.0	91.5		mg/L		98	80 - 120
Fluoride	0.40		2.50	3.05		mg/L		106	80 - 120
Sulfate	30		50.0	80.2		mg/L		101	80 - 120

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 240-177345-2 MSD **Client Sample ID: MW-16-02**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 554788

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	42		50.0	92.1		mg/L		99	80 - 120	1	15
Fluoride	0.40		2.50	3.07		mg/L		107	80 - 120	1	15
Sulfate	30		50.0	80.6		mg/L		102	80 - 120	1	15

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

Lab Sample ID: MB 240-554840/1 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 554840

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			12/07/22 08:21	1

Lab Sample ID: LCS 240-554840/2 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 554840

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			388	342		mg/L		88	80 - 120		

Metals

Prep Batch: 554550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177345-1	MW-16-01	Total Recoverable	Water	3005A	
240-177345-2	MW-16-02	Total Recoverable	Water	3005A	
240-177345-3	MW-16-03	Total Recoverable	Water	3005A	
240-177345-4	MW-17-06	Total Recoverable	Water	3005A	
240-177345-5	MW-17-07	Total Recoverable	Water	3005A	
240-177345-6	DUP-01	Total Recoverable	Water	3005A	
MB 240-554550/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-554550/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-554550/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 554551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177345-1	MW-16-01	Total/NA	Water	7470A	
240-177345-2	MW-16-02	Total/NA	Water	7470A	
240-177345-3	MW-16-03	Total/NA	Water	7470A	
240-177345-4	MW-17-06	Total/NA	Water	7470A	
240-177345-5	MW-17-07	Total/NA	Water	7470A	
240-177345-6	DUP-01	Total/NA	Water	7470A	
MB 240-554551/1-A	Method Blank	Total/NA	Water	7470A	
LCS 240-554551/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 554782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177345-1	MW-16-01	Total/NA	Water	7470A	554551
240-177345-2	MW-16-02	Total/NA	Water	7470A	554551
240-177345-3	MW-16-03	Total/NA	Water	7470A	554551
240-177345-4	MW-17-06	Total/NA	Water	7470A	554551
240-177345-5	MW-17-07	Total/NA	Water	7470A	554551
240-177345-6	DUP-01	Total/NA	Water	7470A	554551
MB 240-554551/1-A	Method Blank	Total/NA	Water	7470A	554551
LCS 240-554551/2-A	Lab Control Sample	Total/NA	Water	7470A	554551

Analysis Batch: 554839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177345-1	MW-16-01	Total Recoverable	Water	6020	554550
240-177345-2	MW-16-02	Total Recoverable	Water	6020	554550
240-177345-3	MW-16-03	Total Recoverable	Water	6020	554550
240-177345-4	MW-17-06	Total Recoverable	Water	6020	554550
240-177345-5	MW-17-07	Total Recoverable	Water	6020	554550
240-177345-6	DUP-01	Total Recoverable	Water	6020	554550
MB 240-554550/1-A	Method Blank	Total Recoverable	Water	6020	554550
LCS 240-554550/3-A	Lab Control Sample	Total Recoverable	Water	6020	554550

Analysis Batch: 554914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177345-1	MW-16-01	Total Recoverable	Water	6010B	554550
240-177345-2	MW-16-02	Total Recoverable	Water	6010B	554550
240-177345-3	MW-16-03	Total Recoverable	Water	6010B	554550
240-177345-4	MW-17-06	Total Recoverable	Water	6010B	554550
240-177345-5	MW-17-07	Total Recoverable	Water	6010B	554550
240-177345-6	DUP-01	Total Recoverable	Water	6010B	554550

Metals (Continued)

Analysis Batch: 554914 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-554550/1-A	Method Blank	Total Recoverable	Water	6010B	554550
LCS 240-554550/2-A	Lab Control Sample	Total Recoverable	Water	6010B	554550

Analysis Batch: 555044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177345-1	MW-16-01	Total Recoverable	Water	6020	554550

General Chemistry

Analysis Batch: 554788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177345-1	MW-16-01	Total/NA	Water	9056A	
240-177345-1	MW-16-01	Total/NA	Water	9056A	
240-177345-2	MW-16-02	Total/NA	Water	9056A	
240-177345-3	MW-16-03	Total/NA	Water	9056A	
240-177345-4	MW-17-06	Total/NA	Water	9056A	
240-177345-4	MW-17-06	Total/NA	Water	9056A	
240-177345-5	MW-17-07	Total/NA	Water	9056A	
240-177345-5	MW-17-07	Total/NA	Water	9056A	
240-177345-6	DUP-01	Total/NA	Water	9056A	
MB 240-554788/3	Method Blank	Total/NA	Water	9056A	
LCS 240-554788/4	Lab Control Sample	Total/NA	Water	9056A	
240-177345-2 MS	MW-16-02	Total/NA	Water	9056A	
240-177345-2 MSD	MW-16-02	Total/NA	Water	9056A	

Analysis Batch: 554840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177345-1	MW-16-01	Total/NA	Water	SM 2540C	
240-177345-2	MW-16-02	Total/NA	Water	SM 2540C	
240-177345-3	MW-16-03	Total/NA	Water	SM 2540C	
240-177345-4	MW-17-06	Total/NA	Water	SM 2540C	
240-177345-5	MW-17-07	Total/NA	Water	SM 2540C	
240-177345-6	DUP-01	Total/NA	Water	SM 2540C	
MB 240-554840/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-554840/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-177345-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-16-01 — Lab Sample ID: 240-177345-1

Date Collected: 12/01/22 09:30 — **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 22:19
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 15:17
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		5	555044	RKT	EET CAN	12/07/22 17:13
Total/NA	Prep	7470A			554551	SHB	EET CAN	12/05/22 12:00
Total/NA	Analysis	7470A		1	554782	AJC	EET CAN	12/06/22 12:27
Total/NA	Analysis	9056A		1	554788	JMB	EET CAN	12/06/22 20:40
Total/NA	Analysis	9056A		10	554788	JMB	EET CAN	12/06/22 21:00
Total/NA	Analysis	SM 2540C		1	554840	MS	EET CAN	12/07/22 08:21

Client Sample ID: MW-16-02 — Lab Sample ID: 240-177345-2

Date Collected: 12/01/22 13:50 — **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 22:32
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 15:24
Total/NA	Prep	7470A			554551	SHB	EET CAN	12/05/22 12:00
Total/NA	Analysis	7470A		1	554782	AJC	EET CAN	12/06/22 13:41
Total/NA	Analysis	9056A		1	554788	JMB	EET CAN	12/06/22 21:20
Total/NA	Analysis	SM 2540C		1	554840	MS	EET CAN	12/07/22 08:21

Client Sample ID: MW-16-03 — Lab Sample ID: 240-177345-3

Date Collected: 11/30/22 14:45 — **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 22:36
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 15:27
Total/NA	Prep	7470A			554551	SHB	EET CAN	12/05/22 12:00
Total/NA	Analysis	7470A		1	554782	AJC	EET CAN	12/06/22 12:31
Total/NA	Analysis	9056A		1	554788	JMB	EET CAN	12/06/22 22:20
Total/NA	Analysis	SM 2540C		1	554840	MS	EET CAN	12/07/22 08:21

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-177345-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-17-06 — Lab Sample ID: 240-177345-4

Date Collected: 12/01/22 11:00 — **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 22:40
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 15:29
Total/NA	Prep	7470A			554551	SHB	EET CAN	12/05/22 12:00
Total/NA	Analysis	7470A		1	554782	AJC	EET CAN	12/06/22 12:33
Total/NA	Analysis	9056A		1	554788	JMB	EET CAN	12/06/22 22:41
Total/NA	Analysis	9056A		10	554788	JMB	EET CAN	12/06/22 23:01
Total/NA	Analysis	SM 2540C		1	554840	MS	EET CAN	12/07/22 08:21

Client Sample ID: MW-17-07 — Lab Sample ID: 240-177345-5

Date Collected: 12/01/22 12:07 — **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 22:44
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 15:32
Total/NA	Prep	7470A			554551	SHB	EET CAN	12/05/22 12:00
Total/NA	Analysis	7470A		1	554782	AJC	EET CAN	12/06/22 12:35
Total/NA	Analysis	9056A		5	554788	JMB	EET CAN	12/07/22 00:01
Total/NA	Analysis	9056A		50	554788	JMB	EET CAN	12/07/22 00:21
Total/NA	Analysis	SM 2540C		1	554840	MS	EET CAN	12/07/22 08:21

Client Sample ID: DUP-01 — Lab Sample ID: 240-177345-6

Date Collected: 12/01/22 00:00 — **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 22:49
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 15:34
Total/NA	Prep	7470A			554551	SHB	EET CAN	12/05/22 12:00
Total/NA	Analysis	7470A		1	554782	AJC	EET CAN	12/06/22 12:37
Total/NA	Analysis	9056A		1	554788	JMB	EET CAN	12/07/22 00:41
Total/NA	Analysis	SM 2540C		1	554840	MS	EET CAN	12/07/22 08:21

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: 240-177345-1
Project/Site: CCR DTE River Rouge Power Plant

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	12-21-22
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

MICHIGAN 190

MICHIGAN 190

Chain of Custody Record

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

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Client Information	Sampler: B. YELEN	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-101350-23773.1
Client Contact: ~~Chris Scieszka~~ VINCE 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:	Analysis Requested	Preservation Codes:
City: Ann Arbor	TAT Requested (days): 3 DAY		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 - Tnzma; Z - other (specify); Other:
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No		
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: 179837 - 2022		
Email: ~~CScieszka@trccompanies.com~~ vbuening@trccompanies.com	WO #: 413519.0005		
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806		
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)	6010B Bo, 6020 Ca,As,Ba,Cd,Cr,Co,Pb,Li,Mo, Se, 7471 Hg	9315_Ra226, 9320_Ra228	2540C_Calcd - TDS	9056A_28D - Chloride, Fluoride and Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N		
MW-16-01	12.1.22	0930	G	Water	N	N	X	X	X	X		
MW-16-02	12.1.22	1350		Water			X	X	X	X		
MW-16-03	11.30.22	1445		Water			X	X	X	X		
~~MW-16-06~~ MW-17-06	12.1.22	1100		Water			X	X	X	X		
MW-17-07	12.1.22	1207		Water			X	X	X	X		
DUP-01	12.1.22			Water			X	X	X	X		
				Water								

240-177345 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ 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: B YELEN	Date/Time: 12.2.22 802	Company: TRC	Received by:	Date/Time: 12/2/22 0805	Company: FEDEX
Relinquished by:	Date/Time: 12/2/22 0900	Company: FEDEX	Received by:	Date/Time: 12-3-22 8:00	Company: FEDEX
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: 01/16/2019

Eurofins - Canton Sample Receipt Form/Narrative **Login # : 177345**
Barberton Facility

Client HRC Site Name _____ Cooler unpacked by: Charlek

Cooler Received on 12-3-22 Opened on 12-3-22

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

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

Eurofins Cooler # 1 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._____°C Corrected Cooler Temp._____°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# **HC286797**
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: _____

WI-NC-099

Login # : 177345

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-13 **IR-16** IR-17	1.2	1.1	**Wet Ice** Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 **IR-16** IR-17	1.4	1.3	**Wet Ice** Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 **IR-16** IR-17	1.6	1.5	**Wet Ice** Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 **IR-16** IR-17	2.1	2.0	**Wet Ice** Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 **IR-16** IR-17	2.4	2.3	**Wet Ice** Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			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-16-01	240-177345-C-1	Plastic 500ml - with Nitric Acid	<2			
MW-16-01	240-177345-D-1	Plastic 1 liter - Nitric Acid	<2			
MW-16-01	240-177345-E-1	Plastic 1 liter - Nitric Acid	<2			
MW-16-02	240-177345-C-2	Plastic 500ml - with Nitric Acid	<2			
MW-16-02	240-177345-D-2	Plastic 1 liter - Nitric Acid	<2			
MW-16-02	240-177345-E-2	Plastic 1 liter - Nitric Acid	<2			
MW-16-03	240-177345-C-3	Plastic 500ml - with Nitric Acid	<2			
MW-16-03	240-177345-D-3	Plastic 1 liter - Nitric Acid	<2			
MW-16-03	240-177345-E-3	Plastic 1 liter - Nitric Acid	<2			
MW-17-06	240-177345-C-4	Plastic 500ml - with Nitric Acid	<2			
MW-17-06	240-177345-D-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-06	240-177345-E-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-07	240-177345-C-5	Plastic 500ml - with Nitric Acid	<2			
MW-17-07	240-177345-D-5	Plastic 1 liter - Nitric Acid	<2			
MW-17-07	240-177345-E-5	Plastic 1 liter - Nitric Acid	<2			
DUP-01	240-177345-C-6	Plastic 500ml - with Nitric Acid	<2			
DUP-01	240-177345-D-6	Plastic 1 liter - Nitric Acid	<2			
DUP-01	240-177345-E-6	Plastic 1 liter - Nitric Acid	<2			

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ANALYTICAL REPORT

PREPARED FOR

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Ann Arbor, Michigan 48108-7080

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JOB DESCRIPTION

CCR DTE River Rouge Power Plant

JOB NUMBER

240-177345-2

Eurofins Canton
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

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Authorization

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Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-177345-2
Project/Site: CCR DTE River Rouge Power Plant

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

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

Job ID: 240-177345-2

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-177345-2

Receipt
The samples were received on 12/3/2022 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 5 coolers at receipt time were 1.1°C, 1.3°C, 1.5°C, 2.0°C and 2.3°C

Gas Flow Proportional Counter
Method 9315_Ra226: Radium-226 batch 592651Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.MW-16-01 (240-177345-1), MW-16-02 (240-177345-2), MW-16-03 (240-177345-3), MW-17-06 (240-177345-4), MW-17-07 (240-177345-5), DUP-01 (240-177345-6), (LCS 160-592651/2-A), (MB 160-592651/1-A) and (240-177345-E-3-B DU)

Method 9320_Ra228: Radium-228 batch 592655Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.MW-16-01 (240-177345-1), MW-16-02 (240-177345-2), MW-16-03 (240-177345-3), MW-17-06 (240-177345-4), MW-17-07 (240-177345-5), DUP-01 (240-177345-6), (LCS 160-592655/2-A), (MB 160-592655/1-A) and (240-177345-E-3-C DU)

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

Rad
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: 240-177345-2
Project/Site: CCR DTE River Rouge Power Plant

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-177345-2
Project/Site: CCR DTE River Rouge Power Plant

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-177345-1	MW-16-01	Water	12/01/22 09:30	12/03/22 08:00
240-177345-2	MW-16-02	Water	12/01/22 13:50	12/03/22 08:00
240-177345-3	MW-16-03	Water	11/30/22 14:45	12/03/22 08:00
240-177345-4	MW-17-06	Water	12/01/22 11:00	12/03/22 08:00
240-177345-5	MW-17-07	Water	12/01/22 12:07	12/03/22 08:00
240-177345-6	DUP-01	Water	12/01/22 00:00	12/03/22 08:00

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-177345-2
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-16-01 **Lab Sample ID: 240-177345-1**

No Detections.

Client Sample ID: MW-16-02 **Lab Sample ID: 240-177345-2**

No Detections.

Client Sample ID: MW-16-03 **Lab Sample ID: 240-177345-3**

No Detections.

Client Sample ID: MW-17-06 **Lab Sample ID: 240-177345-4**

No Detections.

Client Sample ID: MW-17-07 **Lab Sample ID: 240-177345-5**

No Detections.

Client Sample ID: DUP-01 **Lab Sample ID: 240-177345-6**

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-16-01 **Lab Sample ID: 240-177345-1**
Date Collected: 12/01/22 09:30 **Matrix: Water**
Date Received: 12/03/22 08:00

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.482		0.159	0.165	1.00	0.155	pCi/L	12/07/22 11:36	12/29/22 08:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*12/07/22 11:36*	*12/29/22 08:41*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.279	U	0.456	0.457	1.00	0.777	pCi/L	12/07/22 11:58	12/21/22 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:47*	*1*
Y Carrier	*82.6*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:47*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.761	U	0.483	0.486	5.00	0.777	pCi/L		12/29/22 14:21	1

Client Sample ID: MW-16-02 **Lab Sample ID: 240-177345-2**
Date Collected: 12/01/22 13:50 **Matrix: Water**
Date Received: 12/03/22 08:00

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0987	U	0.0831	0.0836	1.00	0.126	pCi/L	12/07/22 11:36	12/29/22 10:33	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.8*		*40 - 110*	*12/07/22 11:36*	*12/29/22 10:33*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.555**		0.351	0.355	1.00	0.511	pCi/L	12/07/22 11:58	12/21/22 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.8*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:47*	*1*
Y Carrier	*83.0*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:47*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.654**		0.361	0.365	5.00	0.511	pCi/L		12/29/22 14:21	1

Client Sample ID: MW-16-03 **Lab Sample ID: 240-177345-3**
Date Collected: 11/30/22 14:45 **Matrix: Water**
Date Received: 12/03/22 08:00

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.118		0.0824	0.0830	1.00	0.117	pCi/L	12/07/22 11:36	12/29/22 10:33	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.6*		*40 - 110*	*12/07/22 11:36*	*12/29/22 10:33*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.668		0.391	0.396	1.00	0.571	pCi/L	12/07/22 11:58	12/21/22 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.6*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:47*	*1*
Y Carrier	*79.3*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:47*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.785		0.400	0.405	5.00	0.571	pCi/L		12/29/22 14:21	1

Client Sample ID: MW-17-06 **Lab Sample ID: 240-177345-4**
Date Collected: 12/01/22 11:00 **Matrix: Water**
Date Received: 12/03/22 08:00

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.688		0.153	0.165	1.00	0.105	pCi/L	12/07/22 11:36	12/29/22 10:33	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.2*		*40 - 110*	*12/07/22 11:36*	*12/29/22 10:33*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.07		0.409	0.420	1.00	0.517	pCi/L	12/07/22 11:58	12/21/22 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.2*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:47*	*1*
Y Carrier	*84.9*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:47*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.75		0.437	0.451	5.00	0.517	pCi/L		12/29/22 14:21	1

Client Sample ID: MW-17-07
Lab Sample ID: 240-177345-5
Date Collected: 12/01/22 12:07
Matrix: Water
Date Received: 12/03/22 08:00

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.529		0.165	0.171	1.00	0.152	pCi/L	12/07/22 11:36	12/29/22 10:34	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.3*		*40 - 110*	*12/07/22 11:36*	*12/29/22 10:34*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.10		0.492	0.503	1.00	0.642	pCi/L	12/07/22 11:58	12/21/22 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.3*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:47*	*1*
Y Carrier	*84.5*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:47*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.63		0.519	0.531	5.00	0.642	pCi/L		12/29/22 14:21	1

Client Sample ID: DUP-01
Lab Sample ID: 240-177345-6
Date Collected: 12/01/22 00:00
Matrix: Water
Date Received: 12/03/22 08:00

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.124		0.0862	0.0869	1.00	0.124	pCi/L	12/07/22 11:36	12/29/22 10:34	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.5*		*40 - 110*	*12/07/22 11:36*	*12/29/22 10:34*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.153	U	0.281	0.281	1.00	0.484	pCi/L	12/07/22 11:58	12/21/22 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.5*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:48*	*1*
Y Carrier	*87.9*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:48*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.278	U	0.294	0.294	5.00	0.484	pCi/L		12/29/22 14:21	1

Tracer/Carrier Summary

Client: TRC Environmental Corporation.
Job ID: 240-177345-2
Project/Site: CCR DTE River Rouge Power Plant

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)						
		Ba						
Lab Sample ID	Client Sample ID	(40-110)						
240-177345-1	MW-16-01	94.7						
240-177345-2	MW-16-02	88.8						
240-177345-3	MW-16-03	96.6						
240-177345-3 DU	MW-16-03	94.9						
240-177345-4	MW-17-06	93.2						
240-177345-5	MW-17-07	90.3						
240-177345-6	DUP-01	99.5						
LCS 160-592651/2-A	Lab Control Sample	96.4						
MB 160-592651/1-A	Method Blank	94.2						

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)						
		Ba	Y					
Lab Sample ID	Client Sample ID	(40-110)	(40-110)					
240-177345-1	MW-16-01	94.7	82.6					
240-177345-2	MW-16-02	88.8	83.0					
240-177345-3	MW-16-03	96.6	79.3					
240-177345-3 DU	MW-16-03	94.9	85.6					
240-177345-4	MW-17-06	93.2	84.9					
240-177345-5	MW-17-07	90.3	84.5					
240-177345-6	DUP-01	99.5	87.9					
LCS 160-592655/2-A	Lab Control Sample	96.4	84.1					
MB 160-592655/1-A	Method Blank	94.2	83.0					

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-592651/1-A
Matrix: Water
Analysis Batch: 595082

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 592651

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03575	U	0.0677	0.0677	1.00	0.120	pCi/L	12/07/22 11:36	12/29/22 08:39	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.2*		*40 - 110*	*12/07/22 11:36*	*12/29/22 08:39*	*1*

Lab Sample ID: LCS 160-592651/2-A
Matrix: Water
Analysis Batch: 595082

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 592651

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.37		1.08	1.00	0.117	pCi/L	91	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.4*		*40 - 110*

Lab Sample ID: 240-177345-3 DU
Matrix: Water
Analysis Batch: 595082

Client Sample ID: MW-16-03
Prep Type: Total/NA
Prep Batch: 592651

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.118			0.1934		0.0985	1.00	0.122	pCi/L			0.42	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*94.9*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-592655/1-A
Matrix: Water
Analysis Batch: 594467

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 592655

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.5465		0.344	0.348	1.00	0.505	pCi/L	12/07/22 11:58	12/21/22 11:45	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.2*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:45*	*1*
Y Carrier	*83.0*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:45*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-592655/2-A
Matrix: Water
Analysis Batch: 594467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 592655

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.34	9.578		1.27	1.00	0.413	pCi/L	115	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.4*		*40 - 110*
Y Carrier	*84.1*		*40 - 110*

Lab Sample ID: 240-177345-3 DU
Matrix: Water
Analysis Batch: 594467

Client Sample ID: MW-16-03
Prep Type: Total/NA
Prep Batch: 592655

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.668			0.05870	U	0.281	1.00	0.510	pCi/L			0.90	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*94.9*		*40 - 110*
Y Carrier	*85.6*		*40 - 110*

Rad

Prep Batch: 592651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177345-1	MW-16-01	Total/NA	Water	PrecSep-21	
240-177345-2	MW-16-02	Total/NA	Water	PrecSep-21	
240-177345-3	MW-16-03	Total/NA	Water	PrecSep-21	
240-177345-4	MW-17-06	Total/NA	Water	PrecSep-21	
240-177345-5	MW-17-07	Total/NA	Water	PrecSep-21	
240-177345-6	DUP-01	Total/NA	Water	PrecSep-21	
MB 160-592651/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-592651/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
240-177345-3 DU	MW-16-03	Total/NA	Water	PrecSep-21	

Prep Batch: 592655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177345-1	MW-16-01	Total/NA	Water	PrecSep_0	
240-177345-2	MW-16-02	Total/NA	Water	PrecSep_0	
240-177345-3	MW-16-03	Total/NA	Water	PrecSep_0	
240-177345-4	MW-17-06	Total/NA	Water	PrecSep_0	
240-177345-5	MW-17-07	Total/NA	Water	PrecSep_0	
240-177345-6	DUP-01	Total/NA	Water	PrecSep_0	
MB 160-592655/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-592655/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
240-177345-3 DU	MW-16-03	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-177345-2
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-16-01 — Lab Sample ID: 240-177345-1

Date Collected: 12/01/22 09:30 — **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			592651	DJP	EET SL	12/07/22 11:36
Total/NA	Analysis	9315		1	595082	FLC	EET SL	12/29/22 08:41
Total/NA	Prep	PrecSep_0			592655	DJP	EET SL	12/07/22 11:58
Total/NA	Analysis	9320		1	594467	FLC	EET SL	12/21/22 11:47
Total/NA	Analysis	Ra226_Ra228		1	595089	CLP	EET SL	12/29/22 14:21

Client Sample ID: MW-16-02 — Lab Sample ID: 240-177345-2

Date Collected: 12/01/22 13:50 — **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			592651	DJP	EET SL	12/07/22 11:36
Total/NA	Analysis	9315		1	595082	FLC	EET SL	12/29/22 10:33
Total/NA	Prep	PrecSep_0			592655	DJP	EET SL	12/07/22 11:58
Total/NA	Analysis	9320		1	594467	FLC	EET SL	12/21/22 11:47
Total/NA	Analysis	Ra226_Ra228		1	595089	CLP	EET SL	12/29/22 14:21

Client Sample ID: MW-16-03 — Lab Sample ID: 240-177345-3

Date Collected: 11/30/22 14:45 — **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			592651	DJP	EET SL	12/07/22 11:36
Total/NA	Analysis	9315		1	595082	FLC	EET SL	12/29/22 10:33
Total/NA	Prep	PrecSep_0			592655	DJP	EET SL	12/07/22 11:58
Total/NA	Analysis	9320		1	594467	FLC	EET SL	12/21/22 11:47
Total/NA	Analysis	Ra226_Ra228		1	595089	CLP	EET SL	12/29/22 14:21

Client Sample ID: MW-17-06 — Lab Sample ID: 240-177345-4

Date Collected: 12/01/22 11:00 — **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			592651	DJP	EET SL	12/07/22 11:36
Total/NA	Analysis	9315		1	595082	FLC	EET SL	12/29/22 10:33
Total/NA	Prep	PrecSep_0			592655	DJP	EET SL	12/07/22 11:58
Total/NA	Analysis	9320		1	594467	FLC	EET SL	12/21/22 11:47
Total/NA	Analysis	Ra226_Ra228		1	595089	CLP	EET SL	12/29/22 14:21

Lab Chronicle

Client: TRC Environmental Corporation.
Job ID: 240-177345-2
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-17-07
Lab Sample ID: 240-177345-5

Date Collected: 12/01/22 12:07
Matrix: Water
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			592651	DJP	EET SL	12/07/22 11:36
Total/NA	Analysis	9315		1	595082	FLC	EET SL	12/29/22 10:34
Total/NA	Prep	PrecSep_0			592655	DJP	EET SL	12/07/22 11:58
Total/NA	Analysis	9320		1	594467	FLC	EET SL	12/21/22 11:47
Total/NA	Analysis	Ra226_Ra228		1	595089	CLP	EET SL	12/29/22 14:21

Client Sample ID: DUP-01
Lab Sample ID: 240-177345-6

Date Collected: 12/01/22 00:00
Matrix: Water
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			592651	DJP	EET SL	12/07/22 11:36
Total/NA	Analysis	9315		1	595082	FLC	EET SL	12/29/22 10:34
Total/NA	Prep	PrecSep_0			592655	DJP	EET SL	12/07/22 11:58
Total/NA	Analysis	9320		1	594467	FLC	EET SL	12/21/22 11:48
Total/NA	Analysis	Ra226_Ra228		1	595089	CLP	EET SL	12/29/22 14:21

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-177345-2
Project/Site: CCR DTE River Rouge Power Plant

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

MICHIGAN 190

MICHIGAN 190

Chain of Custody Record

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

eurofins | Environment Testing

Client Information	Sampler: B. YELEN	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-101350-23773.1
Client Contact: ~~Chris Scieszka~~ VINCE 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:	Analysis Requested	Preservation Codes:
City: Ann Arbor	TAT Requested (days): 3 DAY		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 - Tnzma; Z - other (specify); Other:
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No		
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: 179837 - 2022		
Email: ~~CScieszka@trccompanies.com~~ vbuening@trccompanies.com	WO #: 413519.0005		
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806		
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)	6010B Bo, 6020 Ca,As,Ba,Cd,Cr,Co,Pb,Li,Mo, Se, 7471 Hg	9315_Ra226, 9320_Ra228	2540C_Calcd - TDS	9056A_28D - Chloride, Fluoride and Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N		
MW-16-01	12.1.22	0930	G	Water	N	N	X	X	X	X		
MW-16-02	12.1.22	1350		Water			X	X	X	X		
MW-16-03	11.30.22	1445		Water			X	X	X	X		
~~MW-16-06~~ MW-17-06	12.1.22	1100		Water			X	X	X	X		
MW-17-07	12.1.22	1207		Water			X	X	X	X		
DUP-01	12.1.22			Water			X	X	X	X		
				Water								

240-177345 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ 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
B YELEN	12.2.22 802	TRC		12/2/22 0805	FEDEX
Relinquished by:	Date/Time: 12/2/22 0900	Company: FEDEX	Received by:	Date/Time: 12-3-22 8:00	Company: FEDEX
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: 01/16/2019

Eurofins - Canton Sample Receipt Form/Narrative **Login # : 177345**
Barberton Facility

Client HRC Site Name _____ Cooler unpacked by: Charlek

Cooler Received on 12-3-22 Opened on 12-3-22

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

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

Eurofins Cooler # 14 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._____°C Corrected Cooler Temp._____°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# **HC286797**
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: _____

WI-NC-099

Login # : 177345

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-13 IR-16 IR-17	1.2	1.1	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17	1.4	1.3	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17	1.6	1.5	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17	2.1	2.0	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17	2.4	2.3	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			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 14 15

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-01	240-177345-C-1	Plastic 500ml - with Nitric Acid	<2			
MW-16-01	240-177345-D-1	Plastic 1 liter - Nitric Acid	<2			
MW-16-01	240-177345-E-1	Plastic 1 liter - Nitric Acid	<2			
MW-16-02	240-177345-C-2	Plastic 500ml - with Nitric Acid	<2			
MW-16-02	240-177345-D-2	Plastic 1 liter - Nitric Acid	<2			
MW-16-02	240-177345-E-2	Plastic 1 liter - Nitric Acid	<2			
MW-16-03	240-177345-C-3	Plastic 500ml - with Nitric Acid	<2			
MW-16-03	240-177345-D-3	Plastic 1 liter - Nitric Acid	<2			
MW-16-03	240-177345-E-3	Plastic 1 liter - Nitric Acid	<2			
MW-17-06	240-177345-C-4	Plastic 500ml - with Nitric Acid	<2			
MW-17-06	240-177345-D-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-06	240-177345-E-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-07	240-177345-C-5	Plastic 500ml - with Nitric Acid	<2			
MW-17-07	240-177345-D-5	Plastic 1 liter - Nitric Acid	<2			
MW-17-07	240-177345-E-5	Plastic 1 liter - Nitric Acid	<2			
DUP-01	240-177345-C-6	Plastic 500ml - with Nitric Acid	<2			
DUP-01	240-177345-D-6	Plastic 1 liter - Nitric Acid	<2			
DUP-01	240-177345-E-6	Plastic 1 liter - Nitric Acid	<2			

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

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-161529.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin: Michigan	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 240-177345-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/19/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
Site: TRC CCR DTE River Rouge Power Plant	SSOW#:			

Analysis Requested

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

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-16-01 (240-177345-1)	12/1/22	09:30 Eastern		Water			X	X	X	2	
MW-16-02 (240-177345-2)	12/1/22	13:50 Eastern		Water			X	X	X	2	
MW-16-03 (240-177345-3)	11/30/22	14:45 Eastern		Water			X	X	X	2	
MW-17-06 (240-177345-4)	12/1/22	11:00 Eastern		Water			X	X	X	2	
MW-17-07 (240-177345-5)	12/1/22	12:07 Eastern		Water			X	X	X	2	
DUP-01 (240-177345-6)	12/1/22	Eastern		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time: 1522 8440	Company EETINC	Received by: FED EX	Date/Time:	Company
Relinquished by: FED EX	Date/Time:	Company	Received by:	Date/Time: DEC 06 2022 0900	Company ETASTL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

12/29/2022

Login Sample Receipt Checklist

Client: TRC Environmental Corporation.

Job Number: 240-177345-2

Login Number: 177345
List Number: 2
Creator: Bohlmann, Jessica M

List Source: Eurofins St. Louis
List Creation: 12/06/22 12:37 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 1/5/2023 11:22:33 AM Revision 1

JOB DESCRIPTION

CCR DTE RRPP Nature and Extent

JOB NUMBER

240-177344-1

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.

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Authorization

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Revision 1

Authorized for release by
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Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-177344-1
Project/Site: CCR DTE RRPP Nature and Extent

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.
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

Case Narrative

Client: TRC Environmental Corporation. Job ID: 240-177344-1
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-177344-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-177344-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 12/8/2022. The report (revision 1) is being revised due to: Cr reported to 2.0 ug/L..

Receipt
The samples were received on 12/3/2022 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 5 coolers at receipt time were 1.1º C, 1.3º C, 1.5º C, 2.
C and 2.3º C.

Metals
Method 6020: Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: MW-16-04S (240-177344-1), MW-17-05 (240-177344-2), MW-17-14 (240-177344-6), MW-17-15 (240-177344-7), MW-17-18 (240-177344-8), MW-17-20 (240-177344-10) and DUP-02 (240-177344-11)The continuing calibratio
blanks and method blanks may not support the lower PQL.

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

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

Method Summary

Client: TRC Environmental Corporation.
Job ID: 240-177344-1
Project/Site: CCR DTE RRPP Nature and Extent

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	EET CAN
6020	Metals (ICP/MS)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
9056A	Anions, Ion Chromatography	SW846	EET CAN
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CAN
7470A	Preparation, Mercury	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: 240-177344-1
Project/Site: CCR DTE RRPP Nature and Extent

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-177344-1	MW-16-04S	Water	12/01/22 13:11	12/03/22 08:00
240-177344-2	MW-17-05	Water	11/30/22 09:18	12/03/22 08:00
240-177344-6	MW-17-14	Water	12/01/22 09:08	12/03/22 08:00
240-177344-7	MW-17-15	Water	12/01/22 14:51	12/03/22 08:00
240-177344-8	MW-17-18	Water	11/30/22 10:32	12/03/22 08:00
240-177344-10	MW-17-20	Water	11/30/22 12:05	12/03/22 08:00
240-177344-11	DUP-02	Water	11/30/22 00:00	12/03/22 08:00

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-177344-1

Client Sample ID: MW-16-04S — Lab Sample ID: 240-177344-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100	100	ug/L	1		6010B	Total Recoverable
Barium	110		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	110000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	39		8.0	8.0	ug/L	1		6020	Total Recoverable
Molybdenum	23		5.0	5.0	ug/L	1		6020	Total Recoverable
Iron	500		100	100	ug/L	1		6020	Total Recoverable
Chloride	130		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.3		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	410		5.0	5.0	mg/L	5		9056A	Total/NA
Total Dissolved Solids	1000		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-05 — Lab Sample ID: 240-177344-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	280		100	100	ug/L	1		6010B	Total Recoverable
Barium	290		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	130000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	17		8.0	8.0	ug/L	1		6020	Total Recoverable
Iron	210		100	100	ug/L	1		6020	Total Recoverable
Chloride	120		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.48		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	91		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-17-14 — Lab Sample ID: 240-177344-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	330		100	100	ug/L	1		6010B	Total Recoverable
Barium	420		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	150000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	15		8.0	8.0	ug/L	1		6020	Total Recoverable
Molybdenum	5.1		5.0	5.0	ug/L	1		6020	Total Recoverable
Iron	4600		100	100	ug/L	1		6020	Total Recoverable
Nickel	8.1		2.0	2.0	ug/L	1		6020	Total Recoverable
Chloride	820		10	10	mg/L	10		9056A	Total/NA
Fluoride	0.91		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	29		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1600		40	40	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 RRPP Nature and Extent

Job ID: 240-177344-1

Client Sample ID: MW-17-15 — Lab Sample ID: 240-177344-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	140		100	100	ug/L	1		6010B	Total Recoverable
Arsenic	7.2		5.0	5.0	ug/L	1		6020	Total Recoverable
Barium	190		5.0	5.0	ug/L	1		6020	Total Recoverable
Chromium	2.8		2.0	2.0	ug/L	1		6020	Total Recoverable
Cobalt	1.0		1.0	1.0	ug/L	1		6020	Total Recoverable
Calcium	84000		1000	1000	ug/L	1		6020	Total Recoverable
Lead	5.2		1.0	1.0	ug/L	1		6020	Total Recoverable
Lithium	28		8.0	8.0	ug/L	1		6020	Total Recoverable
Molybdenum	8.6		5.0	5.0	ug/L	1		6020	Total Recoverable
Iron	1200		100	100	ug/L	1		6020	Total Recoverable
Nickel	7.9		2.0	2.0	ug/L	1		6020	Total Recoverable
Vanadium	5.4		5.0	5.0	ug/L	1		6020	Total Recoverable
Copper	4.6		2.0	2.0	ug/L	1		6020	Total Recoverable
Chloride	220		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	0.28		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	41		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	620		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-18 — Lab Sample ID: 240-177344-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	390		100	100	ug/L	1		6010B	Total Recoverable
Barium	120		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	200000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	19		8.0	8.0	ug/L	1		6020	Total Recoverable
Iron	930		100	100	ug/L	1		6020	Total Recoverable
Nickel	3.0		2.0	2.0	ug/L	1		6020	Total Recoverable
Chloride	500		10	10	mg/L	10		9056A	Total/NA
Fluoride	0.45		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	130		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1400		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-20 — Lab Sample ID: 240-177344-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	470		100	100	ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-17-20 (Continued) Lab Sample ID: 240-177344-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	120		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	350000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	28		8.0	8.0	ug/L	1		6020	Total Recoverable
Iron	2600		100	100	ug/L	1		6020	Total Recoverable
Nickel	7.2		2.0	2.0	ug/L	1		6020	Total Recoverable
Copper	2.5		2.0	2.0	ug/L	1		6020	Total Recoverable
Chloride	980		20	20	mg/L	20		9056A	Total/NA
Fluoride	0.34		0.10	0.10	mg/L	2		9056A	Total/NA
Sulfate	340		2.0	2.0	mg/L	2		9056A	Total/NA
Total Dissolved Solids	2600		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-02 Lab Sample ID: 240-177344-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	400		100	100	ug/L	1		6010B	Total Recoverable
Barium	120		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	210000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	20		8.0	8.0	ug/L	1		6020	Total Recoverable
Iron	1000		100	100	ug/L	1		6020	Total Recoverable
Nickel	3.1		2.0	2.0	ug/L	1		6020	Total Recoverable
Chloride	500		10	10	mg/L	10		9056A	Total/NA
Fluoride	0.46		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	120		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1500		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 RRPP Nature and Extent

Job ID: 240-177344-1

Client Sample ID: MW-16-04S

Date Collected: 12/01/22 13:11
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177344-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1000**		100	100	ug/L		12/05/22 12:00	12/06/22 21:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:35	1
Barium	**110**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:35	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:35	1
Chromium	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 14:35	1
Cobalt	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:35	1
Calcium	**110000**		1000	1000	ug/L		12/05/22 12:00	12/06/22 14:35	1
Lead	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:35	1
Lithium	**39**		8.0	8.0	ug/L		12/05/22 12:00	12/06/22 14:35	1
Molybdenum	**23**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:35	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:35	1
Iron	**500**		100	100	ug/L		12/05/22 12:00	12/06/22 14:35	1
Nickel	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 14:35	1
Vanadium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:35	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:35	1
Copper	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 14:35	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 11:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**130**		1.0	1.0	mg/L			12/06/22 05:34	1
Fluoride (SW846 9056A)	**1.3**		0.050	0.050	mg/L			12/06/22 05:34	1
Sulfate (SW846 9056A)	**410**		5.0	5.0	mg/L			12/06/22 06:35	5
Total Dissolved Solids (SM 2540C)	**1000**		10	10	mg/L			12/07/22 08:21	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-177344-1

Client Sample ID: MW-17-05

Date Collected: 11/30/22 09:18
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177344-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**280**		100	100	ug/L		12/05/22 12:00	12/06/22 21:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:47	1
Barium	**290**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:47	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:47	1
Chromium	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 14:47	1
Cobalt	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:47	1
Calcium	**130000**		1000	1000	ug/L		12/05/22 12:00	12/06/22 14:47	1
Lead	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:47	1
Lithium	**17**		8.0	8.0	ug/L		12/05/22 12:00	12/06/22 14:47	1
Molybdenum	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:47	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:47	1
Iron	**210**		100	100	ug/L		12/05/22 12:00	12/06/22 14:47	1
Nickel	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 14:47	1
Vanadium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:47	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:47	1
Copper	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 14:47	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 12:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**120**		1.0	1.0	mg/L			12/06/22 06:55	1
Fluoride (SW846 9056A)	**0.48**		0.050	0.050	mg/L			12/06/22 06:55	1
Sulfate (SW846 9056A)	**91**		1.0	1.0	mg/L			12/06/22 06:55	1
Total Dissolved Solids (SM 2540C)	**740**		10	10	mg/L			12/05/22 09:57	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-177344-1

Client Sample ID: MW-17-14

Date Collected: 12/01/22 09:08
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177344-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**330**		100	100	ug/L		12/05/22 12:00	12/06/22 21:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:02	1
Barium	**420**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:02	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:02	1
Chromium	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:02	1
Cobalt	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:02	1
Calcium	**150000**		1000	1000	ug/L		12/05/22 12:00	12/06/22 15:02	1
Lead	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:02	1
Lithium	**15**		8.0	8.0	ug/L		12/05/22 12:00	12/06/22 15:02	1
Molybdenum	**5.1**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:02	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:02	1
Iron	**4600**		100	100	ug/L		12/05/22 12:00	12/06/22 15:02	1
Nickel	**8.1**		2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:02	1
Vanadium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:02	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:02	1
Copper	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:02	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 12:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**820**		10	10	mg/L			12/06/22 10:36	10
Fluoride (SW846 9056A)	**0.91**		0.050	0.050	mg/L			12/06/22 10:16	1
Sulfate (SW846 9056A)	**29**		1.0	1.0	mg/L			12/06/22 10:16	1
Total Dissolved Solids (SM 2540C)	**1600**		40	40	mg/L			12/07/22 15:52	1

Client: TRC Environmental Corporation.
Job ID: 240-177344-1
Project/Site: CCR DTE RRPP Nature and Extent

Client Sample ID: MW-17-15
Lab Sample ID: 240-177344-7

Date Collected: 12/01/22 14:51
Matrix: Water
Date Received: 12/03/22 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	140		100	100	ug/L		12/05/22 12:00	12/06/22 21:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.2		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:04	1
Barium	190		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:04	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:04	1
Chromium	2.8		2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:04	1
Cobalt	1.0		1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:04	1
Calcium	84000		1000	1000	ug/L		12/05/22 12:00	12/06/22 15:04	1
Lead	5.2		1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:04	1
Lithium	28		8.0	8.0	ug/L		12/05/22 12:00	12/06/22 15:04	1
Molybdenum	8.6		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:04	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:04	1
Iron	1200		100	100	ug/L		12/05/22 12:00	12/06/22 15:04	1
Nickel	7.9		2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:04	1
Vanadium	5.4		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:04	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:04	1
Copper	4.6		2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:04	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 12:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	220		5.0	5.0	mg/L			12/06/22 11:16	5
Fluoride (SW846 9056A)	0.28		0.050	0.050	mg/L			12/06/22 10:56	1
Sulfate (SW846 9056A)	41		1.0	1.0	mg/L			12/06/22 10:56	1
Total Dissolved Solids (SM 2540C)	620		10	10	mg/L			12/07/22 08:21	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-177344-1

Client Sample ID: MW-17-18

Date Collected: 11/30/22 10:32
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177344-8

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**390**		100	100	ug/L		12/05/22 12:00	12/06/22 22:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:07	1
Barium	**120**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:07	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:07	1
Chromium	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:07	1
Cobalt	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:07	1
Calcium	**200000**		1000	1000	ug/L		12/05/22 12:00	12/06/22 15:07	1
Lead	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:07	1
Lithium	**19**		8.0	8.0	ug/L		12/05/22 12:00	12/06/22 15:07	1
Molybdenum	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:07	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:07	1
Iron	**930**		100	100	ug/L		12/05/22 12:00	12/06/22 15:07	1
Nickel	**3.0**		2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:07	1
Vanadium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:07	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:07	1
Copper	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:07	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 12:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**500**		10	10	mg/L			12/06/22 11:57	10
Fluoride (SW846 9056A)	**0.45**		0.050	0.050	mg/L			12/06/22 11:37	1
Sulfate (SW846 9056A)	**130**		1.0	1.0	mg/L			12/06/22 11:37	1
Total Dissolved Solids (SM 2540C)	**1400**		20	20	mg/L			12/05/22 09:57	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-177344-1

Client Sample ID: MW-17-20

Date Collected: 11/30/22 12:05
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177344-10

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**470**		100	100	ug/L		12/05/22 12:00	12/06/22 22:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:12	1
Barium	**120**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:12	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:12	1
Chromium	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:12	1
Cobalt	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:12	1
Calcium	**350000**		1000	1000	ug/L		12/05/22 12:00	12/06/22 15:12	1
Lead	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:12	1
Lithium	**28**		8.0	8.0	ug/L		12/05/22 12:00	12/06/22 15:12	1
Molybdenum	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:12	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:12	1
Iron	**2600**		100	100	ug/L		12/05/22 12:00	12/06/22 15:12	1
Nickel	**7.2**		2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:12	1
Vanadium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:12	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:12	1
Copper	**2.5**		2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:12	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 12:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**980**		20	20	mg/L			12/06/22 13:57	20
Fluoride (SW846 9056A)	**0.34**		0.10	0.10	mg/L			12/06/22 13:37	2
Sulfate (SW846 9056A)	**340**		2.0	2.0	mg/L			12/06/22 13:37	2
Total Dissolved Solids (SM 2540C)	**2600**		40	40	mg/L			12/05/22 09:57	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-177344-1

Client Sample ID: DUP-02

Date Collected: 11/30/22 00:00
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177344-11

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**400**		100	100	ug/L		12/05/22 12:00	12/06/22 22:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:14	1
Barium	**120**		5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:14	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:14	1
Chromium	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:14	1
Cobalt	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:14	1
Calcium	**210000**		1000	1000	ug/L		12/05/22 12:00	12/06/22 15:14	1
Lead	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:14	1
Lithium	**20**		8.0	8.0	ug/L		12/05/22 12:00	12/06/22 15:14	1
Molybdenum	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:14	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:14	1
Iron	**1000**		100	100	ug/L		12/05/22 12:00	12/06/22 15:14	1
Nickel	**3.1**		2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:14	1
Vanadium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 15:14	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 15:14	1
Copper	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 15:14	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 12:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**500**		10	10	mg/L			12/06/22 14:38	10
Fluoride (SW846 9056A)	**0.46**		0.050	0.050	mg/L			12/06/22 14:17	1
Sulfate (SW846 9056A)	**120**		1.0	1.0	mg/L			12/06/22 14:17	1
Total Dissolved Solids (SM 2540C)	**1500**		20	20	mg/L			12/05/22 09:57	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-554550/1-A
Matrix: Water
Analysis Batch: 554914

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 554550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	100	ug/L		12/05/22 12:00	12/06/22 21:04	1

Lab Sample ID: LCS 240-554550/2-A
Matrix: Water
Analysis Batch: 554914

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 554550

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

Lab Sample ID: 240-177344-1 MS
Matrix: Water
Analysis Batch: 554914

Client Sample ID: MW-16-04S
Prep Type: Total Recoverable
Prep Batch: 554550

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1000		1000	2120		ug/L		108	75 - 125

Lab Sample ID: 240-177344-1 MSD
Matrix: Water
Analysis Batch: 554914

Client Sample ID: MW-16-04S
Prep Type: Total Recoverable
Prep Batch: 554550

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	1000		1000	2110		ug/L		106	75 - 125	1	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-554550/1-A
Matrix: Water
Analysis Batch: 554839

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 554550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Barium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Cadmium	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Chromium	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Cobalt	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Calcium	1000	U	1000	1000	ug/L		12/05/22 12:00	12/06/22 14:28	1
Lead	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Lithium	8.0	U	8.0	8.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Molybdenum	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Selenium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Iron	100	U	100	100	ug/L		12/05/22 12:00	12/06/22 14:28	1
Nickel	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Vanadium	5.0	U	5.0	5.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Silver	1.0	U	1.0	1.0	ug/L		12/05/22 12:00	12/06/22 14:28	1
Copper	2.0	U	2.0	2.0	ug/L		12/05/22 12:00	12/06/22 14:28	1

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

Lab Sample ID: LCS 240-554550/3-A
Matrix: Water
Analysis Batch: 554839

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 554550

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1000	926		ug/L		93	80 - 120
Barium	1000	932		ug/L		93	80 - 120
Cadmium	500	490		ug/L		98	80 - 120
Chromium	500	495		ug/L		99	80 - 120
Cobalt	500	468		ug/L		94	80 - 120
Calcium	25000	25900		ug/L		104	80 - 120
Lead	500	514		ug/L		103	80 - 120
Lithium	500	489		ug/L		98	80 - 120
Molybdenum	500	484		ug/L		97	80 - 120
Selenium	1000	913		ug/L		91	80 - 120
Iron	5000	4950		ug/L		99	80 - 120
Nickel	500	464		ug/L		93	80 - 120
Vanadium	500	495		ug/L		99	80 - 120
Silver	100	97.9		ug/L		98	80 - 120
Copper	500	463		ug/L		93	80 - 120

Lab Sample ID: 240-177344-1 MS
Matrix: Water
Analysis Batch: 554839

Client Sample ID: MW-16-04S
Prep Type: Total Recoverable
Prep Batch: 554550

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	5.0	U	1000	943		ug/L		94	75 - 125
Barium	110		1000	1040		ug/L		93	75 - 125
Cadmium	1.0	U	500	479		ug/L		96	75 - 125
Chromium	2.0	U	500	481		ug/L		96	75 - 125
Cobalt	1.0	U	500	471		ug/L		94	75 - 125
Calcium	110000		25000	132000	4	ug/L		103	75 - 125
Lead	1.0	U	500	501		ug/L		100	75 - 125
Lithium	39		500	531		ug/L		98	75 - 125
Molybdenum	23		500	530		ug/L		101	75 - 125
Selenium	5.0	U	1000	918		ug/L		92	75 - 125
Iron	500		5000	5510		ug/L		100	75 - 125
Nickel	2.0	U	500	466		ug/L		93	75 - 125
Vanadium	5.0	U	500	496		ug/L		99	75 - 125
Silver	1.0	U	100	97.4		ug/L		97	75 - 125
Copper	2.0	U	500	462		ug/L		92	75 - 125

Lab Sample ID: 240-177344-1 MSD
Matrix: Water
Analysis Batch: 554839

Client Sample ID: MW-16-04S
Prep Type: Total Recoverable
Prep Batch: 554550

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	5.0	U	1000	945		ug/L		95	75 - 125	0	20
Barium	110		1000	1040		ug/L		93	75 - 125	0	20
Cadmium	1.0	U	500	482		ug/L		96	75 - 125	0	20
Chromium	2.0	U	500	486		ug/L		97	75 - 125	1	20
Cobalt	1.0	U	500	474		ug/L		95	75 - 125	1	20
Calcium	110000		25000	131000	4	ug/L		98	75 - 125	1	20
Lead	1.0	U	500	504		ug/L		101	75 - 125	1	20

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

Lab Sample ID: 240-177344-1 MSD — **Client Sample ID: MW-16-04S**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 554839 — **Prep Batch: 554550**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lithium	39		500	532		ug/L		99	75 - 125	0	20
Molybdenum	23		500	528		ug/L		101	75 - 125	0	20
Selenium	5.0	U	1000	930		ug/L		93	75 - 125	1	20
Iron	500		5000	5580		ug/L		102	75 - 125	1	20
Nickel	2.0	U	500	472		ug/L		94	75 - 125	1	20
Vanadium	5.0	U	500	496		ug/L		99	75 - 125	0	20
Silver	1.0	U	100	98.1		ug/L		98	75 - 125	1	20
Copper	2.0	U	500	469		ug/L		94	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-554551/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554782 — **Prep Batch: 554551**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		12/05/22 12:00	12/06/22 11:47	1

Lab Sample ID: LCS 240-554551/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554782 — **Prep Batch: 554551**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	5.00	4.83		ug/L		97	80 - 120

Lab Sample ID: 240-177344-1 MS — **Client Sample ID: MW-16-04S**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554782 — **Prep Batch: 554551**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.20	U	1.00	1.06		ug/L		106	80 - 120

Lab Sample ID: 240-177344-1 MSD — **Client Sample ID: MW-16-04S**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554782 — **Prep Batch: 554551**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.20	U	1.00	0.956		ug/L		96	80 - 120	10	20

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-554614/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554614

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			12/06/22 04:54	1
Fluoride	0.050	U	0.050	0.050	mg/L			12/06/22 04:54	1
Sulfate	1.0	U	1.0	1.0	mg/L			12/06/22 04:54	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 240-554614/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554614

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	49.6		mg/L		99	90 - 110		
Fluoride			2.50	2.54		mg/L		102	90 - 110		
Sulfate			50.0	51.0		mg/L		102	90 - 110		

Lab Sample ID: 240-177344-1 MS — **Client Sample ID: MW-16-04S**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554614

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	130		50.0	176		mg/L		96	80 - 120		
Fluoride	1.3		2.50	4.01		mg/L		108	80 - 120		

Lab Sample ID: 240-177344-1 MSD — **Client Sample ID: MW-16-04S**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554614

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	130		50.0	177		mg/L		97	80 - 120	0	15
Fluoride	1.3		2.50	4.05		mg/L		110	80 - 120	1	15

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

Lab Sample ID: MB 240-554533/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554533

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			12/05/22 09:57	1

Lab Sample ID: LCS 240-554533/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554533

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			388	367		mg/L		95	80 - 120		

Lab Sample ID: MB 240-554840/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554840

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			12/07/22 08:21	1

Lab Sample ID: LCS 240-554840/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 554840

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			388	342		mg/L		88	80 - 120		

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-177344-1

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

Lab Sample ID: 240-177344-7 DU
Matrix: Water
Analysis Batch: 554840

Client Sample ID: MW-17-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	620			611		mg/L				1	20

Lab Sample ID: MB 240-554908/1
Matrix: Water
Analysis Batch: 554908

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			12/07/22 10:40	1

Lab Sample ID: LCS 240-554908/2
Matrix: Water
Analysis Batch: 554908

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			388	318		mg/L		82	80 - 120		

Metals

Prep Batch: 554550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177344-1	MW-16-04S	Total Recoverable	Water	3005A	
240-177344-2	MW-17-05	Total Recoverable	Water	3005A	
240-177344-6	MW-17-14	Total Recoverable	Water	3005A	
240-177344-7	MW-17-15	Total Recoverable	Water	3005A	
240-177344-8	MW-17-18	Total Recoverable	Water	3005A	
240-177344-10	MW-17-20	Total Recoverable	Water	3005A	
240-177344-11	DUP-02	Total Recoverable	Water	3005A	
MB 240-554550/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-554550/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-554550/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-177344-1 MS	MW-16-04S	Total Recoverable	Water	3005A	
240-177344-1 MS	MW-16-04S	Total Recoverable	Water	3005A	
240-177344-1 MSD	MW-16-04S	Total Recoverable	Water	3005A	
240-177344-1 MSD	MW-16-04S	Total Recoverable	Water	3005A	

Prep Batch: 554551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177344-1	MW-16-04S	Total/NA	Water	7470A	
240-177344-2	MW-17-05	Total/NA	Water	7470A	
240-177344-6	MW-17-14	Total/NA	Water	7470A	
240-177344-7	MW-17-15	Total/NA	Water	7470A	
240-177344-8	MW-17-18	Total/NA	Water	7470A	
240-177344-10	MW-17-20	Total/NA	Water	7470A	
240-177344-11	DUP-02	Total/NA	Water	7470A	
MB 240-554551/1-A	Method Blank	Total/NA	Water	7470A	
LCS 240-554551/2-A	Lab Control Sample	Total/NA	Water	7470A	
240-177344-1 MS	MW-16-04S	Total/NA	Water	7470A	
240-177344-1 MSD	MW-16-04S	Total/NA	Water	7470A	

Analysis Batch: 554782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177344-1	MW-16-04S	Total/NA	Water	7470A	554551
240-177344-2	MW-17-05	Total/NA	Water	7470A	554551
240-177344-6	MW-17-14	Total/NA	Water	7470A	554551
240-177344-7	MW-17-15	Total/NA	Water	7470A	554551
240-177344-8	MW-17-18	Total/NA	Water	7470A	554551
240-177344-10	MW-17-20	Total/NA	Water	7470A	554551
240-177344-11	DUP-02	Total/NA	Water	7470A	554551
MB 240-554551/1-A	Method Blank	Total/NA	Water	7470A	554551
LCS 240-554551/2-A	Lab Control Sample	Total/NA	Water	7470A	554551
240-177344-1 MS	MW-16-04S	Total/NA	Water	7470A	554551
240-177344-1 MSD	MW-16-04S	Total/NA	Water	7470A	554551

Analysis Batch: 554839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177344-1	MW-16-04S	Total Recoverable	Water	6020	554550
240-177344-2	MW-17-05	Total Recoverable	Water	6020	554550
240-177344-6	MW-17-14	Total Recoverable	Water	6020	554550
240-177344-7	MW-17-15	Total Recoverable	Water	6020	554550
240-177344-8	MW-17-18	Total Recoverable	Water	6020	554550
240-177344-10	MW-17-20	Total Recoverable	Water	6020	554550

Metals (Continued)

Analysis Batch: 554839 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177344-11	DUP-02	Total Recoverable	Water	6020	554550
MB 240-554550/1-A	Method Blank	Total Recoverable	Water	6020	554550
LCS 240-554550/3-A	Lab Control Sample	Total Recoverable	Water	6020	554550
240-177344-1 MS	MW-16-04S	Total Recoverable	Water	6020	554550
240-177344-1 MSD	MW-16-04S	Total Recoverable	Water	6020	554550

Analysis Batch: 554914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177344-1	MW-16-04S	Total Recoverable	Water	6010B	554550
240-177344-2	MW-17-05	Total Recoverable	Water	6010B	554550
240-177344-6	MW-17-14	Total Recoverable	Water	6010B	554550
240-177344-7	MW-17-15	Total Recoverable	Water	6010B	554550
240-177344-8	MW-17-18	Total Recoverable	Water	6010B	554550
240-177344-10	MW-17-20	Total Recoverable	Water	6010B	554550
240-177344-11	DUP-02	Total Recoverable	Water	6010B	554550
MB 240-554550/1-A	Method Blank	Total Recoverable	Water	6010B	554550
LCS 240-554550/2-A	Lab Control Sample	Total Recoverable	Water	6010B	554550
240-177344-1 MS	MW-16-04S	Total Recoverable	Water	6010B	554550
240-177344-1 MSD	MW-16-04S	Total Recoverable	Water	6010B	554550

General Chemistry

Analysis Batch: 554533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177344-2	MW-17-05	Total/NA	Water	SM 2540C	
240-177344-8	MW-17-18	Total/NA	Water	SM 2540C	
240-177344-10	MW-17-20	Total/NA	Water	SM 2540C	
240-177344-11	DUP-02	Total/NA	Water	SM 2540C	
MB 240-554533/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-554533/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 554614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177344-1	MW-16-04S	Total/NA	Water	9056A	
240-177344-1	MW-16-04S	Total/NA	Water	9056A	
240-177344-2	MW-17-05	Total/NA	Water	9056A	
240-177344-6	MW-17-14	Total/NA	Water	9056A	
240-177344-6	MW-17-14	Total/NA	Water	9056A	
240-177344-7	MW-17-15	Total/NA	Water	9056A	
240-177344-7	MW-17-15	Total/NA	Water	9056A	
240-177344-8	MW-17-18	Total/NA	Water	9056A	
240-177344-8	MW-17-18	Total/NA	Water	9056A	
240-177344-10	MW-17-20	Total/NA	Water	9056A	
240-177344-10	MW-17-20	Total/NA	Water	9056A	
240-177344-11	DUP-02	Total/NA	Water	9056A	
240-177344-11	DUP-02	Total/NA	Water	9056A	
MB 240-554614/3	Method Blank	Total/NA	Water	9056A	
LCS 240-554614/4	Lab Control Sample	Total/NA	Water	9056A	
240-177344-1 MS	MW-16-04S	Total/NA	Water	9056A	
240-177344-1 MSD	MW-16-04S	Total/NA	Water	9056A	

General Chemistry

Analysis Batch: 554840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177344-1	MW-16-04S	Total/NA	Water	SM 2540C	
240-177344-7	MW-17-15	Total/NA	Water	SM 2540C	
MB 240-554840/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-554840/2	Lab Control Sample	Total/NA	Water	SM 2540C	
240-177344-7 DU	MW-17-15	Total/NA	Water	SM 2540C	

Analysis Batch: 554908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177344-6	MW-17-14	Total/NA	Water	SM 2540C	
MB 240-554908/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-554908/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-177344-1
Project/Site: CCR DTE RRPP Nature and Extent

Client Sample ID: MW-16-04S — Lab Sample ID: 240-177344-1

Date Collected: 12/01/22 13:11 **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 21:12
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 14:35
Total/NA	Prep	7470A			554551	SHB	EET CAN	12/05/22 12:00
Total/NA	Analysis	7470A		1	554782	AJC	EET CAN	12/06/22 11:56
Total/NA	Analysis	9056A		1	554614	JMB	EET CAN	12/06/22 05:34
Total/NA	Analysis	9056A		5	554614	JMB	EET CAN	12/06/22 06:35
Total/NA	Analysis	SM 2540C		1	554840	MS	EET CAN	12/07/22 08:21

Client Sample ID: MW-17-05 — Lab Sample ID: 240-177344-2

Date Collected: 11/30/22 09:18 **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 21:29
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 14:47
Total/NA	Prep	7470A			554551	SHB	EET CAN	12/05/22 12:00
Total/NA	Analysis	7470A		1	554782	AJC	EET CAN	12/06/22 12:02
Total/NA	Analysis	9056A		1	554614	JMB	EET CAN	12/06/22 06:55
Total/NA	Analysis	SM 2540C		1	554533	MS	EET CAN	12/05/22 09:57

Client Sample ID: MW-17-14 — Lab Sample ID: 240-177344-6

Date Collected: 12/01/22 09:08 **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 21:54
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 15:02
Total/NA	Prep	7470A			554551	SHB	EET CAN	12/05/22 12:00
Total/NA	Analysis	7470A		1	554782	AJC	EET CAN	12/06/22 12:11
Total/NA	Analysis	9056A		1	554614	JMB	EET CAN	12/06/22 10:16
Total/NA	Analysis	9056A		10	554614	JMB	EET CAN	12/06/22 10:36
Total/NA	Analysis	SM 2540C		1	554908	MS	EET CAN	12/07/22 15:52

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-177344-1

Client Sample ID: MW-17-15

Date Collected: 12/01/22 14:51
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177344-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 21:58
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 15:04
Total/NA	Prep	7470A			554551	SHB	EET CAN	12/05/22 12:00
Total/NA	Analysis	7470A		1	554782	AJC	EET CAN	12/06/22 12:13
Total/NA	Analysis	9056A		1	554614	JMB	EET CAN	12/06/22 10:56
Total/NA	Analysis	9056A		5	554614	JMB	EET CAN	12/06/22 11:16
Total/NA	Analysis	SM 2540C		1	554840	MS	EET CAN	12/07/22 08:21

Client Sample ID: MW-17-18

Date Collected: 11/30/22 10:32
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177344-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 22:02
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 15:07
Total/NA	Prep	7470A			554551	SHB	EET CAN	12/05/22 12:00
Total/NA	Analysis	7470A		1	554782	AJC	EET CAN	12/06/22 12:19
Total/NA	Analysis	9056A		1	554614	JMB	EET CAN	12/06/22 11:37
Total/NA	Analysis	9056A		10	554614	JMB	EET CAN	12/06/22 11:57
Total/NA	Analysis	SM 2540C		1	554533	MS	EET CAN	12/05/22 09:57

Client Sample ID: MW-17-20

Date Collected: 11/30/22 12:05
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177344-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 22:10
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 15:12
Total/NA	Prep	7470A			554551	SHB	EET CAN	12/05/22 12:00
Total/NA	Analysis	7470A		1	554782	AJC	EET CAN	12/06/22 12:23
Total/NA	Analysis	9056A		2	554614	JMB	EET CAN	12/06/22 13:37
Total/NA	Analysis	9056A		20	554614	JMB	EET CAN	12/06/22 13:57
Total/NA	Analysis	SM 2540C		1	554533	MS	EET CAN	12/05/22 09:57

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-177344-1

Client Sample ID: DUP-02

Date Collected: 11/30/22 00:00
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177344-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 22:15
Total Recoverable	Prep	3005A			554550	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 15:14
Total/NA	Prep	7470A			554551	SHB	EET CAN	12/05/22 12:00
Total/NA	Analysis	7470A		1	554782	AJC	EET CAN	12/06/22 12:25
Total/NA	Analysis	9056A		1	554614	JMB	EET CAN	12/06/22 14:17
Total/NA	Analysis	9056A		10	554614	JMB	EET CAN	12/06/22 14:38
Total/NA	Analysis	SM 2540C		1	554533	MS	EET CAN	12/05/22 09:57

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: 240-177344-1
Project/Site: CCR DTE RRPP Nature and Extent

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	12-21-22
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 Phone (330) 497-0772

MICHIGAN 190

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing

Client Information	Sampler: J. Krenz	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-101352-30605.1
Client Contact: Mr. Vincent Buening	Phone: 734-395-9804	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): 3 DAY			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: 179837 - 2022			
Email: vbuening@trccompanies.com	WO #: 413519.0005			
Project Name: CCR DTE RRPP Nature and Extent	Project #: 24016806			
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 Bo, 6020 Ca,As,Ba,Cd,Cr,Co,Pb,Li,Mo,Se, 7470A Hg	9315_Ra226 - Radium 226	9320_Ra228, Ra226Ra228_GFPC	9056A_28D - Chloride, Fluoride and Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	D	D	N		
MW-16-04S	12-1-22	1311	G	Water	N	N	X	X	X	X	X		
MW-17-05	11-30-22	0918		Water			X	X	X	X	X		
MW-17-08	11-30-22	1155		Water			X	X	X	X	X		HOLD - PENDING ANALYSIS
MW-17-12	11-30-22	1258		Water			X	X	X	X	X		HOLD - PENDING ANALYSIS
MW-17-13	12-1-22	1007		Water			X	X	X	X	X		HOLD - PENDING ANALYSIS
MW-17-14	12-1-22	0908		Water			X	X	X	X	X		
MW-17-15	12-1-22	1451		Water			X	X	X	X	X		
MW-17-18	11-30-22	1032		Water			X	X	X	X	X		
MW-17-19	11-30-22	1121		Water			X	X	X	X	X		HOLD - PENDING ANALYSIS
MW-17-20	11-30-22	1205		Water			X	X	X	X	X		
DUP-02	11-30-22	—		Water			X	X	X	X	X		

240-177344 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	B. YELEN	12.2.22 802			12/2/22 0805	EET
2		12/2/22 0900			12-3-22 8:00	EET
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins - Canton Sample Receipt Form/Narrative **Login # :** 127344
Barberton Facility

Client FRC Site Name _____ Cooler unpacked by: Charlek

Cooler Received on 12-3-22 Opened on 12-3-22

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

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

Eurofins Cooler # 15 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._____°C Corrected Cooler Temp._____°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# **HC286797**
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: _____

WI-NC-099

Login # : 177344

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-13 IR-16 IR-17	1.2	1.1	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17	1.4	1.3	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17	1.6	1.5	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17	2.1	2.0	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17	2.4	2.3	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			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-16-04S	240-177344-C-1	Plastic 500ml - with Nitric Acid	<2			
MW-16-04S	240-177344-D-1	Plastic 1 liter - Nitric Acid	<2			
MW-16-04S	240-177344-E-1	Plastic 1 liter - Nitric Acid	<2			
MW-17-05	240-177344-C-2	Plastic 500ml - with Nitric Acid	<2			
MW-17-05	240-177344-D-2	Plastic 1 liter - Nitric Acid	<2			
MW-17-05	240-177344-E-2	Plastic 1 liter - Nitric Acid	<2			
MW-17-08	240-177344-C-3	Plastic 500ml - with Nitric Acid	<2			
MW-17-08	240-177344-D-3	Plastic 1 liter - Nitric Acid	<2			
MW-17-08	240-177344-E-3	Plastic 1 liter - Nitric Acid	<2			
MW-17-12	240-177344-C-4	Plastic 500ml - with Nitric Acid	<2			
MW-17-12	240-177344-D-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-12	240-177344-E-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-13	240-177344-C-5	Plastic 500ml - with Nitric Acid	<2			
MW-17-13	240-177344-D-5	Plastic 1 liter - Nitric Acid	<2			
MW-17-13	240-177344-E-5	Plastic 1 liter - Nitric Acid	<2			
MW-17-14	240-177344-C-6	Plastic 500ml - with Nitric Acid	<2			
MW-17-14	240-177344-D-6	Plastic 1 liter - Nitric Acid	<2			
MW-17-14	240-177344-E-6	Plastic 1 liter - Nitric Acid	<2			
MW-17-15	240-177344-C-7	Plastic 500ml - with Nitric Acid	<2			
MW-17-15	240-177344-D-7	Plastic 1 liter - Nitric Acid	<2			
MW-17-15	240-177344-E-7	Plastic 1 liter - Nitric Acid	<2			
MW-17-18	240-177344-C-8	Plastic 500ml - with Nitric Acid	<2			
MW-17-18	240-177344-D-8	Plastic 1 liter - Nitric Acid	<2			
MW-17-18	240-177344-E-8	Plastic 1 liter - Nitric Acid	<2			
MW-17-19	240-177344-C-9	Plastic 500ml - with Nitric Acid	<2			
MW-17-19	240-177344-D-9	Plastic 1 liter - Nitric Acid	<2			
MW-17-19	240-177344-E-9	Plastic 1 liter - Nitric Acid	<2			
MW-17-20	240-177344-C-10	Plastic 500ml - with Nitric Acid	<2			
MW-17-20	240-177344-D-10	Plastic 1 liter - Nitric Acid	<2			
MW-17-20	240-177344-E-10	Plastic 1 liter - Nitric Acid	<2			
DUP-02	240-177344-C-11	Plastic 500ml - with Nitric Acid	<2			
DUP-02	240-177344-D-11	Plastic 1 liter - Nitric Acid	<2			
DUP-02	240-177344-E-11	Plastic 1 liter - Nitric Acid	<2			

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 RRPP Nature and Extent

JOB NUMBER

240-177344-2

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.

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Authorization

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Authorized for release by
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Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-177344-2
Project/Site: CCR DTE RRPP Nature and Extent

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

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

Job ID: 240-177344-2

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-177344-2

Receipt
The samples were received on 12/3/2022 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 5 coolers at receipt time were 1.1°C, 1.3°C, 1.5°C, 2.0°C and 2.3°C

Gas Flow Proportional Counter
Method 9315_Ra226: Radium-226 batch 592651Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.MW-16-04S (240-177344-1), MW-17-05 (240-177344-2), MW-17-14 (240-177344-6), MW-17-15 (240-177344-7), MW-17-18 (240-177344-8), MW-17-20 (240-177344-10), DUP-02 (240-177344-11), (LCS 160-592651/2-A), (MB 160-592651/1-A), (240-177345-D-3-A) and (240-177345-E-3-B DU)

Method 9320_Ra228: Radium-228 batch 592655The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: MW-17-15 (240-177344-7). Analytical results are reported with the detection limit achieved.

Method 9320_Ra228: Radium-228 batch 592655Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.MW-16-04S (240-177344-1), MW-17-05 (240-177344-2), MW-17-14 (240-177344-6), MW-17-15 (240-177344-7), MW-17-18 (240-177344-8), MW-17-20 (240-177344-10), DUP-02 (240-177344-11), (LCS 160-592655/2-A), (MB 160-592655/1-A), (240-177345-D-3-B) and (240-177345-E-3-C DU)

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

Rad
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: 240-177344-2
Project/Site: CCR DTE RRPP Nature and Extent

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-177344-2
Project/Site: CCR DTE RRPP Nature and Extent

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-177344-1	MW-16-04S	Water	12/01/22 13:11	12/03/22 08:00
240-177344-2	MW-17-05	Water	11/30/22 09:18	12/03/22 08:00
240-177344-6	MW-17-14	Water	12/01/22 09:08	12/03/22 08:00
240-177344-7	MW-17-15	Water	12/01/22 14:51	12/03/22 08:00
240-177344-8	MW-17-18	Water	11/30/22 10:32	12/03/22 08:00
240-177344-10	MW-17-20	Water	11/30/22 12:05	12/03/22 08:00
240-177344-11	DUP-02	Water	11/30/22 00:00	12/03/22 08:00

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-177344-2
Project/Site: CCR DTE RRPP Nature and Extent

Client Sample ID: MW-16-04S **Lab Sample ID: 240-177344-1**

No Detections.

Client Sample ID: MW-17-05 **Lab Sample ID: 240-177344-2**

No Detections.

Client Sample ID: MW-17-14 **Lab Sample ID: 240-177344-6**

No Detections.

Client Sample ID: MW-17-15 **Lab Sample ID: 240-177344-7**

No Detections.

Client Sample ID: MW-17-18 **Lab Sample ID: 240-177344-8**

No Detections.

Client Sample ID: MW-17-20 **Lab Sample ID: 240-177344-10**

No Detections.

Client Sample ID: DUP-02 **Lab Sample ID: 240-177344-11**

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-16-04S
Lab Sample ID: 240-177344-1

Date Collected: 12/01/22 13:11
Matrix: Water

Date Received: 12/03/22 08:00

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.414		0.165	0.169	1.00	0.171	pCi/L	12/07/22 11:36	12/29/22 08:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.3*		*40 - 110*	*12/07/22 11:36*	*12/29/22 08:40*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.24		0.651	0.661	1.00	0.915	pCi/L	12/07/22 11:58	12/21/22 11:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.3*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:45*	*1*
Y Carrier	*83.4*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:45*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.65		0.672	0.682	5.00	0.915	pCi/L		12/29/22 14:21	1

Client Sample ID: MW-17-05
Lab Sample ID: 240-177344-2

Date Collected: 11/30/22 09:18
Matrix: Water

Date Received: 12/03/22 08:00

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.09		0.203	0.226	1.00	0.127	pCi/L	12/07/22 11:36	12/29/22 08:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.9*		*40 - 110*	*12/07/22 11:36*	*12/29/22 08:40*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.673		0.415	0.419	1.00	0.608	pCi/L	12/07/22 11:58	12/21/22 11:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.9*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:46*	*1*
Y Carrier	*85.6*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:46*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.77		0.462	0.476	5.00	0.608	pCi/L		12/29/22 14:21	1

Client Sample ID: MW-17-14
Lab Sample ID: 240-177344-6

Date Collected: 12/01/22 09:08
Matrix: Water

Date Received: 12/03/22 08:00

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.16		0.227	0.249	1.00	0.165	pCi/L	12/07/22 11:36	12/29/22 08:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*12/07/22 11:36*	*12/29/22 08:40*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.43		0.489	0.506	1.00	0.546	pCi/L	12/07/22 11:58	12/21/22 11:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:46*	*1*
Y Carrier	*82.6*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:46*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.59		0.539	0.564	5.00	0.546	pCi/L		12/29/22 14:21	1

Client Sample ID: MW-17-15 **Lab Sample ID: 240-177344-7**
Date Collected: 12/01/22 14:51 **Matrix: Water**
Date Received: 12/03/22 08:00

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.262		0.178	0.179	1.00	0.254	pCi/L	12/07/22 11:36	12/29/22 08:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.3*		*40 - 110*	*12/07/22 11:36*	*12/29/22 08:40*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.552	U G	0.629	0.631	1.00	1.03	pCi/L	12/07/22 11:58	12/21/22 11:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.3*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:46*	*1*
Y Carrier	*82.6*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:46*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.814	U	0.654	0.656	5.00	1.03	pCi/L		12/29/22 14:21	1

Client Sample ID: MW-17-18
Lab Sample ID: 240-177344-8

Date Collected: 11/30/22 10:32
Matrix: Water

Date Received: 12/03/22 08:00

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.427		0.152	0.157	1.00	0.154	pCi/L	12/07/22 11:36	12/29/22 08:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.3*		*40 - 110*	*12/07/22 11:36*	*12/29/22 08:41*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.52		0.563	0.580	1.00	0.687	pCi/L	12/07/22 11:58	12/21/22 11:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.3*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:46*	*1*
Y Carrier	*80.7*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:46*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.94		0.583	0.601	5.00	0.687	pCi/L		12/29/22 14:21	1

Client Sample ID: MW-17-20
Lab Sample ID: 240-177344-10

Date Collected: 11/30/22 12:05
Matrix: Water

Date Received: 12/03/22 08:00

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.12		0.228	0.249	1.00	0.174	pCi/L	12/07/22 11:36	12/29/22 08:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*67.7*		*40 - 110*	*12/07/22 11:36*	*12/29/22 08:41*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.78		0.602	0.624	1.00	0.727	pCi/L	12/07/22 11:58	12/21/22 11:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*67.7*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:46*	*1*
Y Carrier	*83.0*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:46*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.89		0.644	0.672	5.00	0.727	pCi/L		12/29/22 14:21	1

Client Sample ID: DUP-02
Lab Sample ID: 240-177344-11

Date Collected: 11/30/22 00:00
Matrix: Water

Date Received: 12/03/22 08:00

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.539**		0.178	0.184	1.00	0.178	pCi/L	12/07/22 11:36	12/29/22 08:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.5*		*40 - 110*	*12/07/22 11:36*	*12/29/22 08:41*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.893	U	0.597	0.603	1.00	0.905	pCi/L	12/07/22 11:58	12/21/22 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.5*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:47*	*1*
Y Carrier	*83.0*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:47*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.43**		0.623	0.630	5.00	0.905	pCi/L		12/29/22 14:21	1

Tracer/Carrier Summary

Client: TRC Environmental Corporation.
Job ID: 240-177344-2
Project/Site: CCR DTE RRPP Nature and Extent

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
240-177344-1	MW-16-04S	72.3
240-177344-2	MW-17-05	79.9
240-177344-6	MW-17-14	98.5
240-177344-7	MW-17-15	91.3
240-177344-8	MW-17-18	90.3
240-177344-10	MW-17-20	67.7
240-177344-11	DUP-02	84.5
LCS 160-592651/2-A	Lab Control Sample	96.4
MB 160-592651/1-A	Method Blank	94.2

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
240-177344-1	MW-16-04S	72.3	83.4
240-177344-2	MW-17-05	79.9	85.6
240-177344-6	MW-17-14	98.5	82.6
240-177344-7	MW-17-15	91.3	82.6
240-177344-8	MW-17-18	90.3	80.7
240-177344-10	MW-17-20	67.7	83.0
240-177344-11	DUP-02	84.5	83.0
LCS 160-592655/2-A	Lab Control Sample	96.4	84.1
MB 160-592655/1-A	Method Blank	94.2	83.0

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-592651/1-A
Matrix: Water
Analysis Batch: 595082

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 592651

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03575	U	0.0677	0.0677	1.00	0.120	pCi/L	12/07/22 11:36	12/29/22 08:39	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.2*		*40 - 110*	*12/07/22 11:36*	*12/29/22 08:39*	*1*

Lab Sample ID: LCS 160-592651/2-A
Matrix: Water
Analysis Batch: 595082

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 592651

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.37		1.08	1.00	0.117	pCi/L	91	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.4*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-592655/1-A
Matrix: Water
Analysis Batch: 594467

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 592655

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.5465		0.344	0.348	1.00	0.505	pCi/L	12/07/22 11:58	12/21/22 11:45	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.2*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:45*	*1*
Y Carrier	*83.0*		*40 - 110*	*12/07/22 11:58*	*12/21/22 11:45*	*1*

Lab Sample ID: LCS 160-592655/2-A
Matrix: Water
Analysis Batch: 594467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 592655

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.34	9.578		1.27	1.00	0.413	pCi/L	115	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.4*		*40 - 110*
Y Carrier	*84.1*		*40 - 110*

QC Association Summary

Client: TRC Environmental Corporation.
Job ID: 240-177344-2
Project/Site: CCR DTE RRPP Nature and Extent

Rad

Prep Batch: 592651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177344-1	MW-16-04S	Total/NA	Water	PrecSep-21	
240-177344-2	MW-17-05	Total/NA	Water	PrecSep-21	
240-177344-6	MW-17-14	Total/NA	Water	PrecSep-21	
240-177344-7	MW-17-15	Total/NA	Water	PrecSep-21	
240-177344-8	MW-17-18	Total/NA	Water	PrecSep-21	
240-177344-10	MW-17-20	Total/NA	Water	PrecSep-21	
240-177344-11	DUP-02	Total/NA	Water	PrecSep-21	
MB 160-592651/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-592651/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 592655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177344-1	MW-16-04S	Total/NA	Water	PrecSep_0	
240-177344-2	MW-17-05	Total/NA	Water	PrecSep_0	
240-177344-6	MW-17-14	Total/NA	Water	PrecSep_0	
240-177344-7	MW-17-15	Total/NA	Water	PrecSep_0	
240-177344-8	MW-17-18	Total/NA	Water	PrecSep_0	
240-177344-10	MW-17-20	Total/NA	Water	PrecSep_0	
240-177344-11	DUP-02	Total/NA	Water	PrecSep_0	
MB 160-592655/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-592655/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: TRC Environmental Corporation.
Job ID: 240-177344-2
Project/Site: CCR DTE RRPP Nature and Extent

Client Sample ID: MW-16-04S
Lab Sample ID: 240-177344-1
Date Collected: 12/01/22 13:11
Matrix: Water
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			592651	DJP	EET SL	12/07/22 11:36
Total/NA	Analysis	9315		1	595082	FLC	EET SL	12/29/22 08:40
Total/NA	Prep	PrecSep_0			592655	DJP	EET SL	12/07/22 11:58
Total/NA	Analysis	9320		1	594467	FLC	EET SL	12/21/22 11:45
Total/NA	Analysis	Ra226_Ra228		1	595089	CLP	EET SL	12/29/22 14:21

Client Sample ID: MW-17-05
Lab Sample ID: 240-177344-2
Date Collected: 11/30/22 09:18
Matrix: Water
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			592651	DJP	EET SL	12/07/22 11:36
Total/NA	Analysis	9315		1	595082	FLC	EET SL	12/29/22 08:40
Total/NA	Prep	PrecSep_0			592655	DJP	EET SL	12/07/22 11:58
Total/NA	Analysis	9320		1	594467	FLC	EET SL	12/21/22 11:46
Total/NA	Analysis	Ra226_Ra228		1	595089	CLP	EET SL	12/29/22 14:21

Client Sample ID: MW-17-14
Lab Sample ID: 240-177344-6
Date Collected: 12/01/22 09:08
Matrix: Water
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			592651	DJP	EET SL	12/07/22 11:36
Total/NA	Analysis	9315		1	595082	FLC	EET SL	12/29/22 08:40
Total/NA	Prep	PrecSep_0			592655	DJP	EET SL	12/07/22 11:58
Total/NA	Analysis	9320		1	594467	FLC	EET SL	12/21/22 11:46
Total/NA	Analysis	Ra226_Ra228		1	595089	CLP	EET SL	12/29/22 14:21

Client Sample ID: MW-17-15
Lab Sample ID: 240-177344-7
Date Collected: 12/01/22 14:51
Matrix: Water
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			592651	DJP	EET SL	12/07/22 11:36
Total/NA	Analysis	9315		1	595082	FLC	EET SL	12/29/22 08:40
Total/NA	Prep	PrecSep_0			592655	DJP	EET SL	12/07/22 11:58
Total/NA	Analysis	9320		1	594467	FLC	EET SL	12/21/22 11:46
Total/NA	Analysis	Ra226_Ra228		1	595089	CLP	EET SL	12/29/22 14:21

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-177344-2
Project/Site: CCR DTE RRPP Nature and Extent

Client Sample ID: MW-17-18 — Lab Sample ID: 240-177344-8

Date Collected: 11/30/22 10:32 — **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			592651	DJP	EET SL	12/07/22 11:36
Total/NA	Analysis	9315		1	595082	FLC	EET SL	12/29/22 08:41
Total/NA	Prep	PrecSep_0			592655	DJP	EET SL	12/07/22 11:58
Total/NA	Analysis	9320		1	594467	FLC	EET SL	12/21/22 11:46
Total/NA	Analysis	Ra226_Ra228		1	595089	CLP	EET SL	12/29/22 14:21

Client Sample ID: MW-17-20 — Lab Sample ID: 240-177344-10

Date Collected: 11/30/22 12:05 — **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			592651	DJP	EET SL	12/07/22 11:36
Total/NA	Analysis	9315		1	595082	FLC	EET SL	12/29/22 08:41
Total/NA	Prep	PrecSep_0			592655	DJP	EET SL	12/07/22 11:58
Total/NA	Analysis	9320		1	594467	FLC	EET SL	12/21/22 11:46
Total/NA	Analysis	Ra226_Ra228		1	595089	CLP	EET SL	12/29/22 14:21

Client Sample ID: DUP-02 — Lab Sample ID: 240-177344-11

Date Collected: 11/30/22 00:00 — **Matrix: Water**
Date Received: 12/03/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			592651	DJP	EET SL	12/07/22 11:36
Total/NA	Analysis	9315		1	595082	FLC	EET SL	12/29/22 08:41
Total/NA	Prep	PrecSep_0			592655	DJP	EET SL	12/07/22 11:58
Total/NA	Analysis	9320		1	594467	FLC	EET SL	12/21/22 11:47
Total/NA	Analysis	Ra226_Ra228		1	595089	CLP	EET SL	12/29/22 14:21

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-177344-2
Project/Site: CCR DTE RRPP Nature and Extent

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

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

MICHIGAN 190

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing

Client Information	Sampler: J. Krenz	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-101352-30605.1
Client Contact: Mr. Vincent Buening	Phone: 734-395-9804	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): 3 DAY			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: 179837 - 2022			
Email: vbuening@trccompanies.com	WO #: 413519.0005			
Project Name: CCR DTE RRPP Nature and Extent	Project #: 24016806			
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 Bo, 6020 Ca,As,Ba,Cd,Cr,Co,Pb,Li,Mo,Se, 7470A Hg	9315_Ra226 - Radium 226	9320_Ra228, Ra226Ra228_GFPC	9056A_28D - Chloride, Fluoride and Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	D	D	N		
MW-16-04S	12-1-22	1311	G	Water	N	N	X	X	X	X	X		
MW-17-05	11-30-22	0918		Water			X	X	X	X	X		
MW-17-08	11-30-22	1155		Water			X	X	X	X	X		HOLD - PENDING ANALYSIS
MW-17-12	11-30-22	1258		Water			X	X	X	X	X		HOLD - PENDING ANALYSIS
MW-17-13	12-1-22	1007		Water			X	X	X	X	X		HOLD - PENDING ANALYSIS
MW-17-14	12-1-22	0908		Water			X	X	X	X	X		
MW-17-15	12-1-22	1451		Water			X	X	X	X	X		
MW-17-18	11-30-22	1032		Water			X	X	X	X	X		
MW-17-19	11-30-22	1121		Water			X	X	X	X	X		HOLD - PENDING ANALYSIS
MW-17-20	11-30-22	1205		Water			X	X	X	X	X		
DUP-02	11-30-22	—		Water			X	X	X	X	X		

240-177344 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	B. YELEN	12.2.22 802			12/2/22 0805	
2		12/2/22 0900			12-3-22 8:00	
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 - Canton Sample Receipt Form/Narrative **Login # :** 127344
Barberton Facility

Client FRC Site Name _____ Cooler unpacked by: Charlek

Cooler Received on 12-3-22 Opened on 12-3-22

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

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

Eurofins Cooler # 17 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._____°C Corrected Cooler Temp._____°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# **HC286797**
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: _____

WI-NC-099

Login # : 177344

Eurofins - Canton Sample Receipt Multiple Cooler Form				
Cooler Description (Circle)	**IR Gun # (Circle)**	**Observed Temp °C**	**Corrected Temp °C**	**Coolant (Circle)**
EC (circled)	IR-16 (circled)	1.2	1.1	Wet Ice (circled)
EC (circled)	IR-16 (circled)	1.4	1.3	Wet Ice (circled)
EC (circled)	IR-16 (circled)	1.6	1.5	Wet Ice (circled)
EC (circled)	IR-16 (circled)	2.1	2.0	Wet Ice (circled)
EC (circled)	IR-16 (circled)	2.4	2.3	Wet Ice (circled)
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			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-16-04S	240-177344-C-1	Plastic 500ml - with Nitric Acid	<2			
MW-16-04S	240-177344-D-1	Plastic 1 liter - Nitric Acid	<2			
MW-16-04S	240-177344-E-1	Plastic 1 liter - Nitric Acid	<2			
MW-17-05	240-177344-C-2	Plastic 500ml - with Nitric Acid	<2			
MW-17-05	240-177344-D-2	Plastic 1 liter - Nitric Acid	<2			
MW-17-05	240-177344-E-2	Plastic 1 liter - Nitric Acid	<2			
MW-17-08	240-177344-C-3	Plastic 500ml - with Nitric Acid	<2			
MW-17-08	240-177344-D-3	Plastic 1 liter - Nitric Acid	<2			
MW-17-08	240-177344-E-3	Plastic 1 liter - Nitric Acid	<2			
MW-17-12	240-177344-C-4	Plastic 500ml - with Nitric Acid	<2			
MW-17-12	240-177344-D-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-12	240-177344-E-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-13	240-177344-C-5	Plastic 500ml - with Nitric Acid	<2			
MW-17-13	240-177344-D-5	Plastic 1 liter - Nitric Acid	<2			
MW-17-13	240-177344-E-5	Plastic 1 liter - Nitric Acid	<2			
MW-17-14	240-177344-C-6	Plastic 500ml - with Nitric Acid	<2			
MW-17-14	240-177344-D-6	Plastic 1 liter - Nitric Acid	<2			
MW-17-14	240-177344-E-6	Plastic 1 liter - Nitric Acid	<2			
MW-17-15	240-177344-C-7	Plastic 500ml - with Nitric Acid	<2			
MW-17-15	240-177344-D-7	Plastic 1 liter - Nitric Acid	<2			
MW-17-15	240-177344-E-7	Plastic 1 liter - Nitric Acid	<2			
MW-17-18	240-177344-C-8	Plastic 500ml - with Nitric Acid	<2			
MW-17-18	240-177344-D-8	Plastic 1 liter - Nitric Acid	<2			
MW-17-18	240-177344-E-8	Plastic 1 liter - Nitric Acid	<2			
MW-17-19	240-177344-C-9	Plastic 500ml - with Nitric Acid	<2			
MW-17-19	240-177344-D-9	Plastic 1 liter - Nitric Acid	<2			
MW-17-19	240-177344-E-9	Plastic 1 liter - Nitric Acid	<2			
MW-17-20	240-177344-C-10	Plastic 500ml - with Nitric Acid	<2			
MW-17-20	240-177344-D-10	Plastic 1 liter - Nitric Acid	<2			
MW-17-20	240-177344-E-10	Plastic 1 liter - Nitric Acid	<2			
DUP-02	240-177344-C-11	Plastic 500ml - with Nitric Acid	<2			
DUP-02	240-177344-D-11	Plastic 1 liter - Nitric Acid	<2			
DUP-02	240-177344-E-11	Plastic 1 liter - Nitric Acid	<2			

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 (Sub Contract Lab)	Sampler:	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-161529.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin: Michigan	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 240-177344-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/8/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
Site: TRC CCR DTE River Rouge Power Plant	SSOW#:			

Analysis Requested

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

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-16-04S (240-177344-1)	12/1/22	13:11 Eastern		Water			X	X	X	2	
MW-17-05 (240-177344-2)	11/30/22	09:18 Eastern		Water			X	X	X	2	
MW-17-08 (240-177344-3)	11/30/22	11:55 Eastern		Water			X	X	X	2	
MW-17-12 (240-177344-4)	11/30/22	12:58 Eastern		Water			X	X	X	2	
MW-17-13 (240-177344-5)	12/1/22	10:07 Eastern		Water			X	X	X	2	
MW-17-14 (240-177344-6)	12/1/22	09:08 Eastern		Water			X	X	X	2	
MW-17-15 (240-177344-7)	12/1/22	14:51 Eastern		Water			X	X	X	2	
MW-17-18 (240-177344-8)	11/30/22	10:32 Eastern		Water			X	X	X	2	
MW-17-19 (240-177344-9)	11/30/22	11:21 Eastern		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time: 12/5/22 840	Company ETINC	Received by:	Date/Time:	Company
Relinquished by: FED EX	Date/Time:	Company	Received by: FED EX	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: DEC 06 2022 0900	Company ETINC

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

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 (Sub Contract Lab)	Sampler:	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-161529.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin: Michigan	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 240-177344-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/8/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
Site: TRC CCR DTE River Rouge Power Plant	SSOW#:			

Analysis Requested

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

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-17-20 (240-177344-10)	11/30/22	12:05 Eastern		Water			X	X	X	2	
DUP-02 (240-177344-11)	11/30/22	Eastern		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 12/5/22 8:40	Company: EET NC	Received by: FED EX
Relinquished by: FED EX	Date/Time:	Company	Received by: Date/Time: DEC 6 2022 0900 Company: EET SC
Relinquished by:	Date/Time:	Company	Received by:

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

Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: TRC Environmental Corporation.

Job Number: 240-177344-2

Login Number: 177344
List Number: 2
Creator: Bohlmann, Jessica M

List Source: Eurofins St. Louis
List Creation: 12/06/22 01:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix B
Data Quality Reviews

Laboratory Data Quality Review
Groundwater Monitoring Event February 2022
DTE Electric Company River Rouge Power Plant (DTE RRPP)

Groundwater samples were collected by TRC for the February 2022 sampling event for the Bottom Ash Impoundment at the DTE RRPP. Samples were analyzed for anions, total dissolved solids, and total recoverable metals by Eurofins Environment Testing America. (Eurofins) located in Chicago, Illinois and samples were analyzed for radium by Eurofins located in St. Louis, Missouri. The laboratory analytical results are reported in laboratory reports 240-163016-1 Revision 1 and 240-163016-3.

During the February 2022 sampling event, a groundwater sample was collected from each of the following compliance wells:

- MW-16-01
- MW-16-02
- MW-16-03
- MW-17-06
- MW-17-07

Each sample was analyzed for one or more of the following constituents:

Analyte Group	Method
Anions (Fluoride, Chloride, Sulfate)	SW846 9056A
Total Dissolved Solids (TDS)	SM 2540C
Total Recoverable Metals	SW846 6010D, SW846 6020B
Radium (Radium-226, Radium-228, Combined Radium)	EPA 9315 and EPA 9320

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2020) and the Department of Energy Evaluation of Radiochemical Data Usability (USDOE, 1997). The following items were included in the evaluation of the data:

- 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. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures;
- Data for laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs). The LCS/LCSDs are used to assess the accuracy and precision of the analytical method using a clean matrix;

- Percent recoveries for matrix spike (MS) and matrix spike duplicates (MSD). 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;
- Percent recoveries for carriers for radiochemistry only. Carriers are used to assess the chemical yield for the preparation and/or instrument efficiency;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes;
- Overall usability of the data.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

Review Summary

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable for their intended purpose. A summary of the data quality review, including non-conformances and issues identified in this evaluation are noted below.

- The reviewed Appendix III and IV constituents will be utilized for the purposes of an assessment monitoring program.
- Data are usable for the purposes of the assessment monitoring program.
- When the data are evaluated through an assessment monitoring statistical program, findings below may be used to support the removal of outliers.

QA/QC Sample Summary

- Target analytes were not detected in the method blanks with the following exceptions:
  - Total recoverable chromium (5.68 ug/L) and iron (102 ug/L) were detected in MB 500-645034/1-A. There was no impact to the usability of data since chromium and iron were not detected in the associated samples.
  - Radium 226 (0.2916 pCi/L) was detected in MB 160-552927/21-A. Detections of radium 226 in select groundwater samples are potentially false positive results as summarized in the attached table, Appendix B.
- LCS and/or LCS duplicate recoveries for all target analytes were within laboratory control limits.
- MS/MSD analyses were performed on sample MW16-01 for total recoverable metals. The percent recoveries (%Rs) and relative percent differences (RPDs) for the MS/MSD analyses met the method acceptance criteria.
- Laboratory duplicate analyses were performed on samples MW-16-01 for total recoverable metals and TDS; the RPD was within the QC limits.

- The field duplicate pair samples were DUP-01/ MW-16-03. The RPDs between the parent and duplicate samples were within acceptance limits.
- Sample MW-17-07 was non-detect for fluoride at 0.20 mg/L which is above the QAPP-requested RL of 0.050 mg/L.
- Carrier recoveries, where applicable, were within 40-110%.

Summary of Analytical Data Non-Conformances - February 2022
River Rouge Power Plant Bottom Ash Basin
River Rouge, Michigan

Samples	Collection Date	Analyte	Non-Conformance/Issue
MW-16-01	2/22/2022	Radium 226	Potential false positive result due to method blank contamination
MW-16-02	2/22/2022		
MW-17-06	2/22/2022		
MW-17-07	2/22/2022		

Laboratory Data Quality Review
Groundwater Monitoring Event November and December 2022
DTE Electric Company River Rouge Power Plant (DTE RRPP)

Groundwater samples were collected by TRC for the November and December 2022 sampling event for the Bottom Ash Impoundment at the DTE RRPP. Samples were analyzed for anions, total dissolved solids, and total recoverable metals by Eurofins Environment Testing (Eurofins), located in Canton, Ohio. Samples were analyzed for radium by Eurofins located in St. Louis, Missouri (Eurofins – St. Louis). The laboratory analytical results are reported in laboratory reports 240-177344-1 Rev (1), 240-177344-2, 240-177345-1 Rev (1), and 240-177345-2.

During the November and December 2022 sampling event, a groundwater sample was collected from each of the following compliance wells:

- MW-16-01
- MW-16-02
- MW-16-03
- MW-17-06
- MW-17-07

During the November and December 2022 sampling event, a groundwater sample was also collected from each of the following nature and extent wells:

- MW-17-05
- MW-17-14
- MW-17-15
- MW-17-18
- MW-17-20

In addition, a groundwater sample was collected from non-compliance monitoring well MW-16-04S which was submitted for analysis along with the above samples and is included for quality review purposes.

Each sample was analyzed for one or more of the following constituents:

Analyte Group	Method
Anions (Fluoride, Chloride, Sulfate)	SW846 9056A
Total Dissolved Solids (TDS)	SM 2540C
Total Recoverable Metals	SW846 6010B/6020/7470A
Radium (Ra-226, Ra-228, Combined Ra-226 & Ra-228)	SW846 9315/9320

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2020) and the Department of Energy Evaluation of Radiochemical Data Usability (USDOE, 1997). The following items were included in the evaluation of the data:

- 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. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures;
- Data for laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs), when performed. The LCS/LCSDs are used to assess the accuracy and precision of the analytical method using a clean matrix;
- Percent recoveries for matrix spike (MS) and matrix spike duplicates (MSD), when performed on project samples. Percent recoveries are calculated for each analyte spiked and used to assess bias due to sample matrix effects;
- Percent recoveries for carriers, where applicable, for radiochemistry only. Carriers are used to assess the chemical yield for the preparation and/or instrument efficiency;
- Data for laboratory duplicates, when performed on project samples. The laboratory duplicates are replicate analyses of one sample and are used to assess the precision of the analytical method;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes;
- Overall usability of the data.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

Review Summary

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable for their intended purpose. A summary of the data quality review, including non-conformances and issues identified in this evaluation are noted below.

- The reviewed Appendix III and IV constituents and iron, nickel, vanadium, silver, and copper will be utilized for the purposes of an assessment monitoring program.
- Data are usable for the purposes of the assessment monitoring program.
- When the data are evaluated through an assessment monitoring statistical program, findings below may be used to support the removal of outliers.

QA/QC Sample Summary

- Target analytes were not detected in the method blanks with the exception of radium 228 which was detected in MB-160-592655/1-A at 0.5465 +/- 0.348 pCi/L. All positive detections of radium 228 in groundwater samples are potentially false positive results as summarized in the attached table, Attachment A.
- LCS recoveries for all target analytes were within laboratory control limits.
- MS/MSD analyses were performed on sample MW16-04S for total recoverable metals, chloride and fluoride and on sample MW-16-02 for anions. The percent recoveries (%Rs)

and relative percent differences (RPDs) for the MS/MSD analyses met the method acceptance criteria.

- Laboratory duplicate analysis was performed on sample MW-17-15 for TDS and sample MW-16-03 for radium 226/228; all criteria were within the QC limits.
- The field duplicate pair samples were DUP-01/ MW-16-03 and DUP-02/MW-17-18. The results between the parent and duplicate samples were within acceptance limits.
- Molybdenum and boron were reported at RLs lower than required in the QAPP. Molybdenum was detected in samples MW-17-14 (5.1 ug/L), MW-17-15 (8.6 ug/L), and MW-17-06 (8.2 ug/L) below the QAPP RL of 10 ug/L. Boron was detected in samples MW-17-15 (140 ug/L), MW-16-03 (110 ug/L), and DUP-01 (110 ug/L) below the QAPP RL of 200 ug/L.
- Carrier recoveries were within 40-110%.

Summary of Analytical Data Non-Conformances - November and December 2022
River Rouge Power Plant Bottom Ash Basin
River Rouge, Michigan

Samples	Collection Date	Analyte	Non-Conformance/Issue
MW-16-04S	12/1/2022	Radium 228	Potential false positive result due to method blank contamination.
MW-17-05	11/30/2022		
MW-17-14	12/1/2022		
MW-17-18	11/30/2022		
MW-17-20	11/30/2022		
MW-16-02	12/1/2022		
MW-16-03	11/30/2022		
MW-17-06	12/1/2022		
MW-17-07	12/1/2022		

Appendix C
Appendix IV Assessment Monitoring Statistical Evaluation – February 2022

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Technical Memorandum

Date:	January 13, 2023
To:	DTE Electric Company
From:	Sarah Holmstrom, TRC Kristin Lowery, TRC
Project No.:	461816.0005.0000
Subject:	Appendix IV Assessment Monitoring Statistical Evaluation for February 2022 Groundwater Monitoring Event – DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit

Introduction

In accordance with §257.96(b) of the federal Coal Combustion Residual (CCR) rule[1], DTE Electric Company (DTE Electric) is continuing assessment monitoring for the River Rouge Power Plant (RRPP) Bottom Ash Basin (BAB) CCR unit. The first semiannual assessment monitoring event of 2022 for the Appendix III and Appendix IV constituents was conducted on February 22, 2022. In accordance with §257.95, the assessment monitoring data must be evaluated to determine whether or not Appendix IV constituents are detected at statistically significant levels above the GWPSs. This memorandum presents the confidence limits derived for the Appendix IV parameters for the RRPP BAB CCR unit that will be used to compare to the established GWPSs.

Assessment Monitoring Statistical Evaluation

The three compliance wells[2] utilized for the RRPP BAB CCR unit are MW-16-01, MW-16-02 and MW-16-03. Following the first semiannual assessment monitoring sampling event for 2022, compliance well data for the RRPP BAB were evaluated in accordance with the Groundwater Statistical Evaluation Plan (Stats Plan) (TRC, October 2017; Revised December 2017). For each detected constituent, the concentrations for each well were first compared directly to the GWPS within the dataset collected subsequent to the groundwater extraction system operation. Parameter-well combinations that included a direct exceedance of the GWPS were retained for further analysis. As a result, arsenic and lithium at MW-16-01were retained for further evaluation.

Groundwater data were then evaluated utilizing ChemStat™ statistical software. ChemStat™ is a software tool that is commercially available for performing statistical evaluation consistent with

[1] USEPA final rule for the regulation and management of Coal Combustion Residuals (CCR) under the Resource Conservation and Recovery Act (RCRA) published April 17, 2015, as amended.

[2] Additional nature and extent wells are sampled and evaluated annually during the second semiannual event.

procedures outlined in U.S. EPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities (Unified Guidance; UG). Within the ChemStat™ statistical program (and the UG), confidence limits were selected to perform the statistical comparison of compliance data to a fixed standard. Parametric and non-parametric confidence intervals were calculated for each of the Appendix IV parameters using a 99 percent confidence level, i.e., a significance level (α) of 0.01. The following narrative describes the methods employed, the results obtained and the ChemStat™ output files are included as an attachment.

The ChemStat™ software was used to test compliance at the downgradient monitoring wells using the confidence interval method for the most recent eight sampling events. Eight independent sampling events provide the appropriate density of data as recommended per the UG yet are collected recently enough to provide an indication of current conditions under the hydraulic influence of the groundwater extraction system.

The statistical data evaluation included the following steps:

- Review of data quality checklists for the assessment monitoring data sets for Appendix IV constituents;
- Evaluation of percentage of non-detects for each downgradient well-constituent pair;
- Graphical representation of the assessment monitoring data as time versus concentration (T v. C) by well/constituent pair;
- Outlier testing of individual data points that appear from the graphical representations as potential outliers;
- Evaluation of visual trends apparent in the graphical representations for statistical significance;
- Distribution of the data; and
- Calculation of the confidence intervals for each cumulative dataset.

The results of these evaluations are presented and discussed below.

Data Quality

Data from the first semiannual monitoring event for 2022 were evaluated for completeness, overall quality and usability, method-specified sample holding times, precision and accuracy, and potential sample contamination. The review was completed using the following quality control (QC) information which at a minimum included chain-of-custody forms, investigative sample results including blind field duplicates, and, as provided by the laboratory, method blanks, laboratory control spikes, laboratory duplicates. The data were found to be complete and usable for the purposes of the CCR monitoring program.

Percentage of Non-detects

The percentage of non-detect observations for constituents with one or more detection above a GWPS is included in Table 1. Non-detect data was handled in accordance with the Stats Plan for the purposes of calculating confidence intervals.

Time versus Concentration Graphs

The T v. C graphs did not show any potential outliers. The T v. C graphs showed potential trending for some Appendix IV well/constituent pairs. These were tested by the ChemStat™ software to assess whether the trends are statistically significant.

Outlier Testing

No potential outliers were observed on the T v. C graphs; therefore, no outlier testing was performed.

Trend Analysis

Visual trends apparent in the T v. C graphs were evaluated in ChemStat™ using the Mann-Kendall Trend Analysis to determine if a subset of data should be used in calculating the confidence interval. Trends were evaluated using a 95-percent (one-tailed) confidence level, i.e., a significance level (α) of 0.05. A statistically significant decreasing trend was noted for lithium at MW-16-01.

Distribution of the Data Sets

ChemStat™ was utilized to evaluate each data set for normality. If the skewness coefficient was calculated to be between negative one and one, then the data were assumed to be approximately normally distributed. If the skewness coefficient was calculated as greater than one (or less than negative one) then the calculation was performed on the natural log (Ln) of the data. If the Ln of the data still determined that the data appeared to be skewed, then the Shapiro-Wilk test of normality (Shapiro-Wilk) was performed. The Shapiro-Wilk statistic was calculated on both non-transformed data, and the Ln-transformed data. If the Shapiro-Wilk statistic indicated that normal distributional assumptions were not valid, then the parameter was considered a candidate for non-parametric statistical evaluation. The data distributions are summarized in Table 1.

Confidence Intervals

Variability is recognized in the data set due to changing groundwater quality in response to the operation of the groundwater extraction system. Calculating a confidence interval around a trending data set incorporates not only variability present naturally in the underlying dataset but can exaggerate variability.

Table 1 presents the calculated confidence intervals for each well-constituent pair. For normal and lognormal distributions, confidence intervals are calculated for 99 percent confidence using parametric methods. For non-normal datasets, a nonparametric confidence interval is utilized, resulting in the highest and lowest values from the contributing dataset as the confidence limits.

The confidence intervals calculated through the above-described process will be compared to the GWPS to determine if an exceedance has occurred. An exceedance of the standard occurs when the 99 percent lower confidence level of the downgradient data exceeds the GWPS.

Attachments

Table 1 Summary of Descriptive Statistics and Confidence Interval Calculations

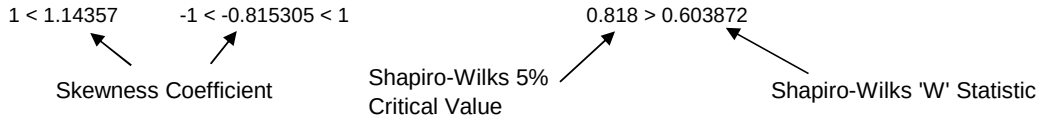
Attachment A ChemStat™ Outputs

Table 1
Summary of Descriptive Statistics and Confidence Interval Calculations

Table 1
Summary of Descriptive Statistics and Confidence Interval Calculations
Assessment Monitoring Statistical Evaluation - February 2022
DTE Electric Company – River Rouge Power Plant

Parameter[1]	Percent Non-Detect	Outliers?	Trend?	Skewness		Shapiro-Wilks Test (5% Critical Value)		Parametric / Non-Parametric	Confidence Interval[2]
				Un-Transformed	Natural Log	Un-Transformed	Natural Log		
MW-16-01									
Arsenic	0%	No	No	-1 < 0.17957 < 1	--	--	--	Parametric	[120, 180]
Lithium	0%	No	Yes	-1 < 0.0306631 < 1	--	--	--	Parametric	[37, 59]

Notes:



(1) Well-parameter combinations that have one or more direct exceedances of the Groundwater Protection Standard within the most recent eight sampling events.
(2) The most recent eight data points are used to calculate the confidence interval to be representative of current conditions.

Attachment A
ChemStat™ Confidence Interval Outputs

Concentrations (ug/L)

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 54
Total Non-Detect: 16
Percent Non-Detects: 29.6296%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

There are 3 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-16-01	18	0 (0%)	8/5/2016	37	37
			9/30/2016	37	37
			11/18/2016	39	39
			1/20/2017	40	40
			3/10/2017	38	38
			4/28/2017	37	37
			6/16/2017	35	35
			7/21/2017	36	36
			4/6/2018	160	160
			5/30/2018	170	170
			10/16/2018	160	160
			3/29/2019	170	170
			9/26/2019	140	140
			3/20/2020	170	170
			11/11/2020	130	130
			2/25/2021	110	110
			10/20/2021	200	200
			2/22/2022	140	140
MW-16-02	18	6 (33.3333%)	8/5/2016	24	24
			9/30/2016	27	27
			11/18/2016	30	30
			1/20/2017	31	31
			3/10/2017	29	29
			4/28/2017	30	30
			6/16/2017	30	30
			7/21/2017	27	27
			4/6/2018	15	15
			5/30/2018	ND<5 U	ND<5 U
			10/16/2018	7.9	7.9
			3/29/2019	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			3/20/2020	ND<5 U	ND<5 U
			11/11/2020	ND<5 U	ND<5 U
			2/25/2021	2.6	2.6
			10/20/2021	ND<5 U	ND<5 U
			2/22/2022	2.4	2.4
MW-16-03	18	10 (55.5556%)	8/5/2016	91	91
			9/30/2016	40	40
			11/18/2016	21	21
			1/20/2017	13	13
			3/10/2017	12	12
			4/28/2017	12	12
			6/16/2017	12	12
			7/21/2017	12	12
			4/6/2018	ND<5 U	ND<5 U
			5/30/2018	ND<5 U	ND<5 U
			10/16/2018	ND<5 U	ND<5 U
			3/29/2019	ND<5 U	ND<5 U

9/26/2019	ND<5 U	ND<5 U
3/20/2020	ND<5 U	ND<5 U
11/11/2020	ND<5 U	ND<5 U
2/25/2021	ND<5	ND<5
10/20/2021	ND<5 U	ND<5 U
2/22/2022	ND<0.36 J	ND<0.36 J

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Concentrations (ug/L)

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 54
Total Non-Detect: 6
Percent Non-Detects: 11.1111%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

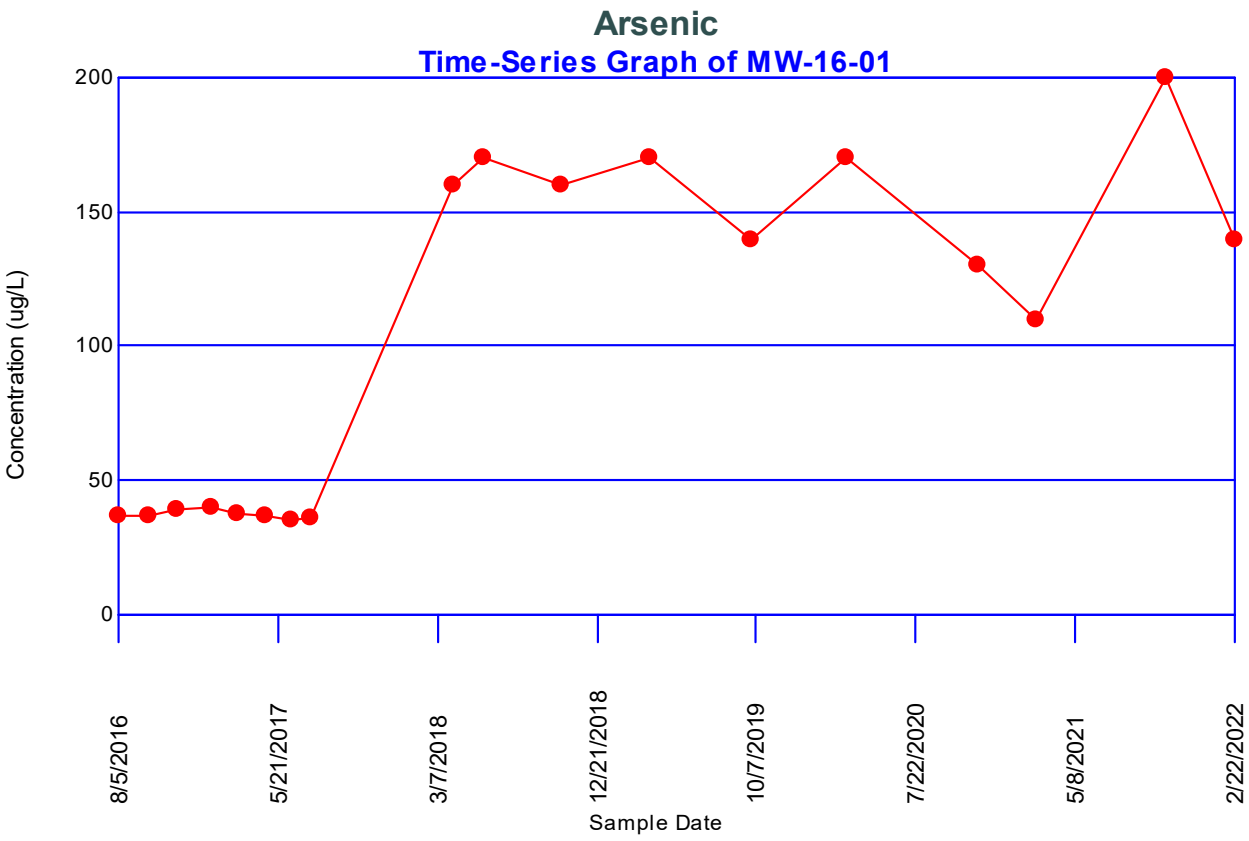
There are 3 compliance locations

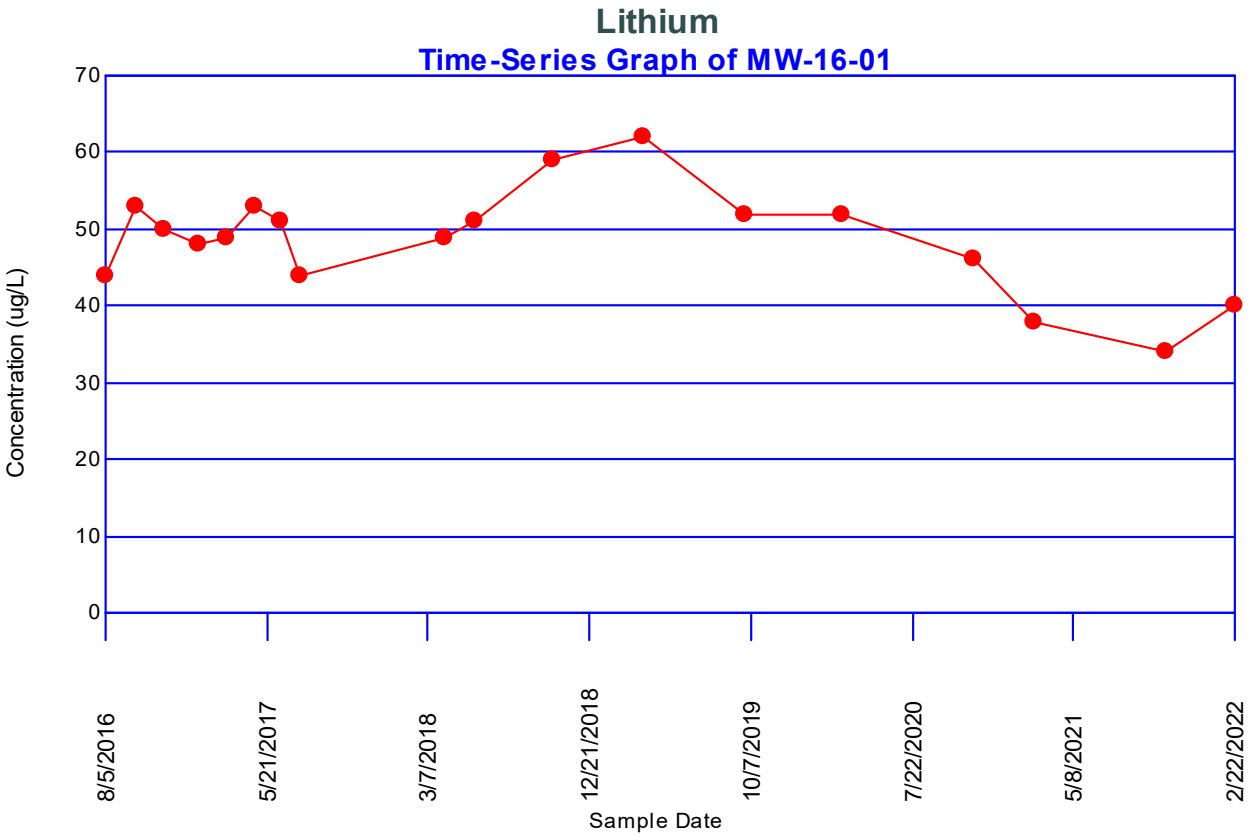
Loc.	Meas.	ND	Date	Conc.	Original
MW-16-01	18	0 (0%)	8/5/2016	44	44
			9/30/2016	53	53
			11/18/2016	50	50
			1/20/2017	48	48
			3/10/2017	49	49
			4/28/2017	53	53
			6/16/2017	51	51
			7/21/2017	44	44
			4/6/2018	49	49
			5/30/2018	51	51
			10/16/2018	59	59
			3/29/2019	62	62
			9/26/2019	52	52
			3/20/2020	52	52
			11/11/2020	46	46
			2/25/2021	38	38
			10/20/2021	34	34
			2/22/2022	40	40
MW-16-02	18	0 (0%)	8/5/2016	57	57
			9/30/2016	64	64
			11/18/2016	62	62
			1/20/2017	64	64
			3/10/2017	58	58
			4/28/2017	71	71
			6/16/2017	64	64
			7/21/2017	52	52
			4/6/2018	45	45
			5/30/2018	28	28
			10/16/2018	27	27
			3/29/2019	21	21
			9/26/2019	18	18
			3/20/2020	14	14
			11/11/2020	13	13
			2/25/2021	14	14
			10/20/2021	14	14
			2/22/2022	16	16
MW-16-03	18	6 (33.3333%)	8/5/2016	29	29
			9/30/2016	44	44
			11/18/2016	44	44
			1/20/2017	49	49
			3/10/2017	45	45
			4/28/2017	51	51
			6/16/2017	49	49
			7/21/2017	41	41
			4/6/2018	15	15
			5/30/2018	11	11
			10/16/2018	ND<8 U	ND<8 U
			3/29/2019	ND<8 U	ND<8 U

9/26/2019	ND<8 U	ND<8 U
3/20/2020	ND<8 U	ND<8 U
11/11/2020	ND<8 U	ND<8 U
2/25/2021	4.8	4.8
10/20/2021	ND<8 U	ND<8 U
2/22/2022	7.9	7.9

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original


Arsenic
Time-Series Graph of MW-16-01
Concentration (ug/L)
200
150
100
50
0
8/5/2016
5/21/2017
3/7/2018
12/21/2018
10/7/2019
7/22/2020
5/8/2021
2/22/2022
Sample Date


Lithium
Time-Series Graph of MW-16-01
Concentration (ug/L)
70
60
50
40
30
20
10
0
8/5/2016
5/21/2017
3/7/2018
12/21/2018
10/7/2019
7/22/2020
5/8/2021
2/22/2022
Sample Date

Concentrations (ug/L)

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 24
Total Non-Detect: 13
Percent Non-Detects: 54.1667%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

There are 3 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-16-01	8	0 (0%)	10/16/2018	160	160
			3/29/2019	170	170
			9/26/2019	140	140
			3/20/2020	170	170
			11/11/2020	130	130
			2/25/2021	110	110
			10/20/2021	200	200
			2/22/2022	140	140
			8/5/2016	**37**	**37**
			9/30/2016	**37**	**37**
			11/18/2016	**39**	**39**
			1/20/2017	**40**	**40**
			3/10/2017	**38**	**38**
			4/28/2017	**37**	**37**
			6/16/2017	**35**	**35**
			7/21/2017	**36**	**36**
			4/6/2018	**160**	**160**
			5/30/2018	**170**	**170**
MW-16-02	8	5 (62.5%)	10/16/2018	7.9	7.9
			3/29/2019	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			3/20/2020	ND<5 U	ND<5 U
			11/11/2020	ND<5 U	ND<5 U
			2/25/2021	2.6	2.6
			10/20/2021	ND<5 U	ND<5 U
			2/22/2022	2.4	2.4
			8/5/2016	**24**	**24**
			9/30/2016	**27**	**27**
			11/18/2016	**30**	**30**
			1/20/2017	**31**	**31**
			3/10/2017	**29**	**29**
			4/28/2017	**30**	**30**
			6/16/2017	**30**	**30**
			7/21/2017	**27**	**27**
			4/6/2018	**15**	**15**
			5/30/2018	**ND<5 U**	**ND<5 U**
MW-16-03	8	8 (100%)	10/16/2018	ND<5 U	ND<5 U
			3/29/2019	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			3/20/2020	ND<5 U	ND<5 U
			11/11/2020	ND<5 U	ND<5 U
			2/25/2021	ND<5	ND<5
			10/20/2021	ND<5 U	ND<5 U
			2/22/2022	ND<0.36 J	ND<0.36 J
			8/5/2016	**91**	**91**
			9/30/2016	**40**	**40**
			11/18/2016	**21**	**21**
			1/20/2017	**13**	**13**

3/10/2017	12	12
4/28/2017	12	12
6/16/2017	12	12
7/21/2017	12	12
4/6/2018	ND<5 U	ND<5 U
5/30/2018	ND<5 U	ND<5 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Concentrations (ug/L)

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 24
Total Non-Detect: 6
Percent Non-Detects: 25%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

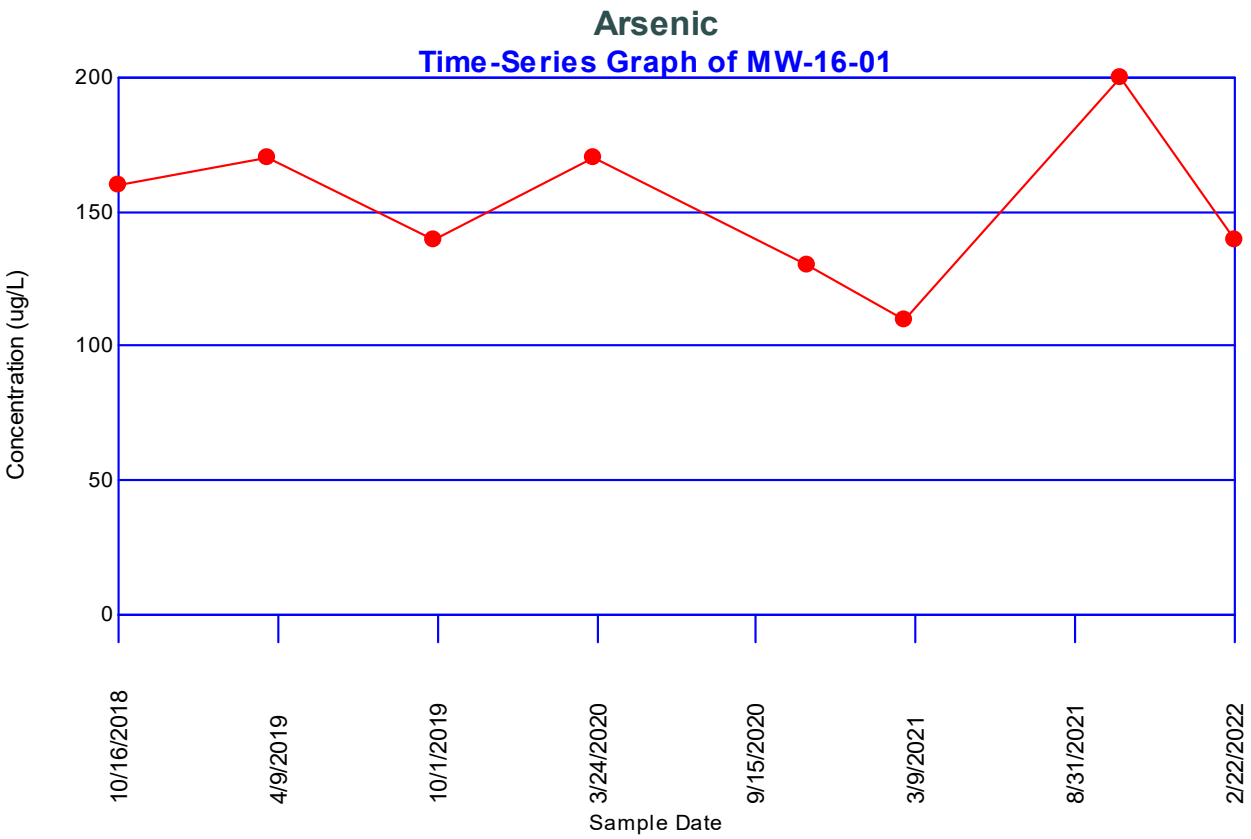
There are 3 compliance locations

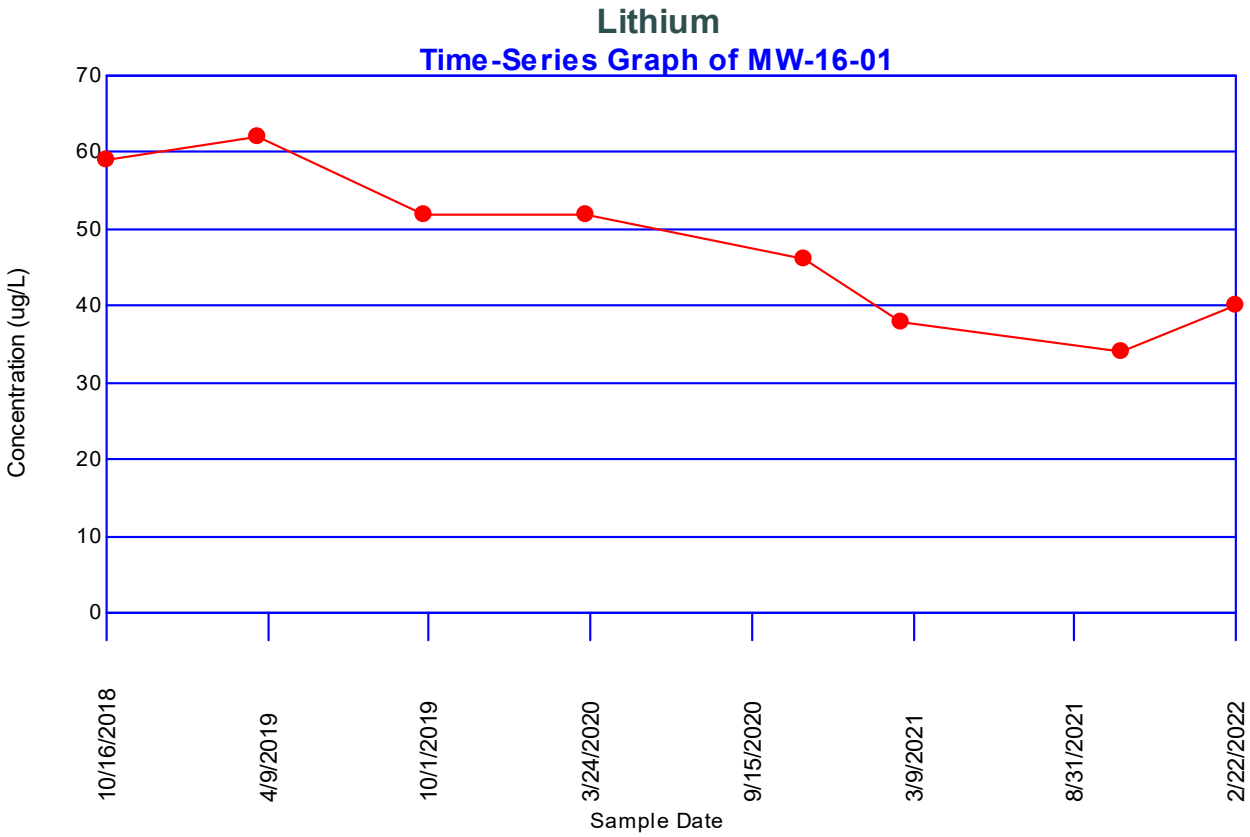
Loc.	Meas.	ND	Date	Conc.	Original
MW-16-01	8	0 (0%)	10/16/2018	59	59
			3/29/2019	62	62
			9/26/2019	52	52
			3/20/2020	52	52
			11/11/2020	46	46
			2/25/2021	38	38
			10/20/2021	34	34
			2/22/2022	40	40
			8/5/2016	**44**	**44**
			9/30/2016	**53**	**53**
			11/18/2016	**50**	**50**
			1/20/2017	**48**	**48**
			3/10/2017	**49**	**49**
			4/28/2017	**53**	**53**
			6/16/2017	**51**	**51**
			7/21/2017	**44**	**44**
			4/6/2018	**49**	**49**
			5/30/2018	**51**	**51**
MW-16-02	8	0 (0%)	10/16/2018	27	27
			3/29/2019	21	21
			9/26/2019	18	18
			3/20/2020	14	14
			11/11/2020	13	13
			2/25/2021	14	14
			10/20/2021	14	14
			2/22/2022	16	16
			8/5/2016	**57**	**57**
			9/30/2016	**64**	**64**
			11/18/2016	**62**	**62**
			1/20/2017	**64**	**64**
			3/10/2017	**58**	**58**
			4/28/2017	**71**	**71**
			6/16/2017	**64**	**64**
			7/21/2017	**52**	**52**
			4/6/2018	**45**	**45**
			5/30/2018	**28**	**28**
MW-16-03	8	6 (75%)	10/16/2018	ND<8 U	ND<8 U
			3/29/2019	ND<8 U	ND<8 U
			9/26/2019	ND<8 U	ND<8 U
			3/20/2020	ND<8 U	ND<8 U
			11/11/2020	ND<8 U	ND<8 U
			2/25/2021	4.8	4.8
			10/20/2021	ND<8 U	ND<8 U
			2/22/2022	7.9	7.9
			8/5/2016	**29**	**29**
			9/30/2016	**44**	**44**
			11/18/2016	**44**	**44**
			1/20/2017	**49**	**49**

			3/10/2017	45	45
			4/28/2017	51	51
			6/16/2017	49	49
			7/21/2017	41	41
			4/6/2018	15	15
			5/30/2018	11	11

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original


Arsenic
Time-Series Graph of MW-16-01
Concentration (ug/L)
200
150
100
50
0
10/16/2018
4/9/2019
10/1/2019
3/24/2020
9/15/2020
3/9/2021
8/31/2021
2/22/2022
Sample Date


Lithium
Time-Series Graph of MW-16-01
Concentration (ug/L)
70
60
50
40
30
20
10
0
10/16/2018
4/9/2019
10/1/2019
3/24/2020
9/15/2020
3/9/2021
8/31/2021
2/22/2022
Sample Date

Mann-Kendall Trend Analysis

Parameter: Arsenic

Location: MW-16-01

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
170	160	10	1	0
140	160	-20	1	1
170	160	10	2	1
130	160	-30	2	2
110	160	-50	2	3
200	160	40	3	3
140	160	-20	3	4
140	170	-30	3	5
170	170	0	3	5
130	170	-40	3	6
110	170	-60	3	7
200	170	30	4	7
140	170	-30	4	8
170	140	30	5	8
130	140	-10	5	9
110	140	-30	5	10
200	140	60	6	10
140	140	0	6	10
130	170	-40	6	11
110	170	-60	6	12
200	170	30	7	12
140	170	-30	7	13
110	130	-20	7	14
200	130	70	8	14
140	130	10	9	14
200	110	90	10	14
140	110	30	11	14
140	200	-60	11	15

S Statistic = 11 - 15 = -4

Comparing at 95% confidence level (upward trend)

Probability of obtaining S >= -4 is 0.36

S < 0 or 0.36 >= 0.05 indicating no evidence of an upward trend

Mann-Kendall Trend Analysis

Parameter: Arsenic

Location: MW-16-01

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
170	160	10	1	0
140	160	-20	1	1
170	160	10	2	1
130	160	-30	2	2
110	160	-50	2	3
200	160	40	3	3
140	160	-20	3	4
140	170	-30	3	5
170	170	0	3	5
130	170	-40	3	6
110	170	-60	3	7
200	170	30	4	7
140	170	-30	4	8
170	140	30	5	8
130	140	-10	5	9
110	140	-30	5	10
200	140	60	6	10
140	140	0	6	10
130	170	-40	6	11
110	170	-60	6	12
200	170	30	7	12
140	170	-30	7	13
110	130	-20	7	14
200	130	70	8	14
140	130	10	9	14
200	110	90	10	14
140	110	30	11	14
140	200	-60	11	15

S Statistic = 11 - 15 = -4

Comparing at 95% confidence level (downward trend)

Probability of obtaining S >= 4 is 0.36

S > 0 or 0.36 > 0.05 indicating no evidence of a downward trend

Mann-Kendall Trend Analysis

Parameter: Lithium
Location: MW-16-01
Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
62	59	3	1	0
52	59	-7	1	1
52	59	-7	1	2
46	59	-13	1	3
38	59	-21	1	4
34	59	-25	1	5
40	59	-19	1	6
52	62	-10	1	7
52	62	-10	1	8
46	62	-16	1	9
38	62	-24	1	10
34	62	-28	1	11
40	62	-22	1	12
52	52	0	1	12
46	52	-6	1	13
38	52	-14	1	14
34	52	-18	1	15
40	52	-12	1	16
46	52	-6	1	17
38	52	-14	1	18
34	52	-18	1	19
40	52	-12	1	20
38	46	-8	1	21
34	46	-12	1	22
40	46	-6	1	23
34	38	-4	1	24
40	38	2	2	24
40	34	6	3	24

S Statistic = 3 - 24 = -21
Comparing at 95% confidence level (upward trend)
Failed to calculate probability for S = -21
Table out of range

The negative value of S indicates a downward trend.
From the tabulated values for n=8 and S=-21, the observed trend has a significance level of 0.00495
0.00495 < 0.05 or S < 0
Indicating no evidence of an upward trend

Mann-Kendall Trend Analysis

Parameter: Lithium
Location: MW-16-01
Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
62	59	3	1	0
52	59	-7	1	1
52	59	-7	1	2
46	59	-13	1	3
38	59	-21	1	4
34	59	-25	1	5
40	59	-19	1	6
52	62	-10	1	7
52	62	-10	1	8
46	62	-16	1	9
38	62	-24	1	10
34	62	-28	1	11
40	62	-22	1	12
52	52	0	1	12
46	52	-6	1	13
38	52	-14	1	14
34	52	-18	1	15
40	52	-12	1	16
46	52	-6	1	17
38	52	-14	1	18
34	52	-18	1	19
40	52	-12	1	20
38	46	-8	1	21
34	46	-12	1	22
40	46	-6	1	23
34	38	-4	1	24
40	38	2	2	24
40	34	6	3	24

S Statistic = 3 - 24 = -21
Comparing at 95% confidence level (downward trend)
Failed to calculate probability for S = -21
Table out of range

The negative value of S indicates a downward trend.
From the tabulated values for n=8 and S=-21, the observed trend has a significance level of 0.00495
0.00495 < 0.05
Indicating a downward trend

Skewness Coefficient

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	8	152.5	28.1577	0.17957
MW-16-02	8	3.175	1.90994	**2.26424**
MW-16-03	8	2.21	0.820244	**-2.26779**

All Locations

Obs.	Mean	Std. Dev.	Skewness
24	52.6283	73.8024	0.846434

Skewness Coefficient

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	8	47.875	10.0915	0.0306631
MW-16-02	8	17.125	4.79397	**1.19023**
MW-16-03	8	4.5875	1.36741	**2.09893**

All Locations

Obs.	Mean	Std. Dev.	Skewness
24	23.1958	19.5874	0.692231

Confidence Interval

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Compliance Locations

Location	**MW-16-01**
Mean	152.5
Std Dev	28.1577
Degrees of Freedom	7
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[122.655, 182.345]	152.5	TRUE
95%	1.89458	[133.639, 171.361]	152.5	TRUE

Location	**MW-16-02**
Mean	3.175
Std Dev	1.90994
Degrees of Freedom	7
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[1.15059, 5.19941]	3.175	FALSE
95%	1.89458	[1.89566, 4.45434]	3.175	FALSE

Location	**MW-16-03**
Mean	2.21
Std Dev	0.820244
Degrees of Freedom	7
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[1.34059, 3.07941]	2.21	FALSE
95%	1.89458	[1.66057, 2.75943]	2.21	FALSE

Confidence Interval

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Compliance Locations

Location	**MW-16-01**
Mean	47.875
Std Dev	10.0915
Degrees of Freedom	7
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[37.1786, 58.5714]	47.875	FALSE
95%	1.89458	[41.1153, 54.6347]	47.875	**TRUE**

Location	**MW-16-02**
Mean	17.125
Std Dev	4.79397
Degrees of Freedom	7
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[12.0437, 22.2063]	17.125	FALSE
95%	1.89458	[13.9138, 20.3362]	17.125	FALSE

Location	**MW-16-03**
Mean	4.5875
Std Dev	1.36741
Degrees of Freedom	7
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[3.13813, 6.03687]	4.5875	FALSE
95%	1.89458	[3.67156, 5.50344]	4.5875	FALSE

Appendix D
Appendix IV Assessment Monitoring Statistical Evaluation – November and December 2022

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Technical Memorandum

Date:	January 13, 2023
To:	DTE Electric Company
From:	Sarah Holmstrom, TRC Kristin Lowery, TRC Henry Schnaidt, TRC
Project No.:	461816.0005.0000
Subject:	Appendix IV Assessment Monitoring Statistical Evaluation for November and December 2022 Groundwater Monitoring Event – DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit

Introduction

In accordance with §257.96(b) of the federal Coal Combustion Residual (CCR) rule[1], DTE Electric Company (DTE Electric) is continuing assessment monitoring for the River Rouge Power Plant (RRPP) Bottom Ash Basin (BAB) CCR unit. The second semiannual assessment monitoring event of 2022 for the Appendix III and Appendix IV constituents was conducted on November 30 and December 1, 2022. In accordance with §257.95, the assessment monitoring data must be evaluated to determine whether or not Appendix IV constituents are detected at statistically significant levels above the GWPSs. This memorandum presents the confidence limits derived for the Appendix IV parameters for the RRPP BAB CCR unit that will be used to compare to the established GWPSs.

Assessment Monitoring Statistical Evaluation

The three compliance wells utilized for the RRPP BAB CCR unit are MW-16-01, MW-16-02 and MW-16-03. Additionally, monitoring wells MW-16-04S, MW-17-05, MW-17-14, MW-17-15, MW-17-18, and MW-17-20 are used to evaluate the nature and extent of releases of CCR as well as any site conditions that may affect the remedy selected. Following the second semiannual assessment monitoring sampling event for 2022, compliance and nature and extent well data for the RRPP BAB were evaluated in accordance with the Groundwater Statistical Evaluation Plan (Stats Plan) (TRC, October 2017; Revised December 2017). For each detected constituent, the concentrations for each well were first compared directly to the GWPS within the dataset collected subsequent to the groundwater extraction system operation. Parameter-well combinations that included a direct exceedance of the GWPS were retained for further analysis. As a result, arsenic and lithium at MW-16-01, lithium at MW-17-14 (nature and extent), and arsenic and lithium at MW-17-15 (nature and extent)

[1] USEPA final rule for the regulation and management of Coal Combustion Residuals (CCR) under the Resource Conservation and Recovery Act (RCRA) published April 17, 2015, as amended.

were retained for further evaluation.

Groundwater data were then evaluated utilizing ChemStat™ statistical software. ChemStat™ is a software tool that is commercially available for performing statistical evaluation consistent with procedures outlined in U.S. EPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities (Unified Guidance; UG). Within the ChemStat™ statistical program (and the UG), confidence limits were selected to perform the statistical comparison of compliance data to a fixed standard. Parametric and non-parametric confidence intervals were calculated for each of the Appendix IV parameters using a 99 percent confidence level, i.e., a significance level (α) of 0.01. The following narrative describes the methods employed, the results obtained and the ChemStat™ output files are included as an attachment.

The ChemStat™ software was used to test compliance at the downgradient monitoring wells using the confidence interval method for the most recent eight sampling events. Eight independent sampling events provide the appropriate density of data as recommended per the UG yet are collected recently enough to provide an indication of current conditions under the hydraulic influence of the groundwater extraction system. For nature and extent wells, sampling has been completed annually following the identification of parameters present at statistically significant levels above their GWPS. Nature and extent sampling was initiated in 2018; therefore, five sampling events of data are available for evaluation.

The statistical data evaluation included the following steps:

- Review of data quality checklists for the assessment monitoring data sets for Appendix IV constituents;
- Evaluation of percentage of non-detects for each downgradient well-constituent pair;
- Graphical representation of the assessment monitoring data as time versus concentration (T v. C) by well/constituent pair;
- Outlier testing of individual data points that appear from the graphical representations as potential outliers;
- Evaluation of visual trends apparent in the graphical representations for statistical significance;
- Distribution of the data; and
- Calculation of the confidence intervals for each cumulative dataset.

The results of these evaluations are presented and discussed below.

Data Quality

Data from the second semiannual monitoring event for 2022 were evaluated for completeness, overall quality and usability, method-specified sample holding times, precision and accuracy, and potential sample contamination. The review was completed using the following quality control (QC) information which at a minimum included chain-of-custody forms, investigative sample results including blind field duplicates, and, as provided by the laboratory, method blanks, laboratory control spikes, laboratory duplicates. The data were found to be complete and usable for the purposes of the CCR monitoring program.

Percentage of Non-detects

The percentage of non-detect observations for constituents with one or more detection above a GWPS is included in Table 1. Non-detect data was handled in accordance with the Stats Plan for the purposes of calculating confidence intervals.

Time versus Concentration Graphs

The T v. C graphs did not show any potential outliers. The T v. C graphs showed potential trending for some Appendix IV well/constituent pairs. These were tested by the ChemStat™ software to assess whether the trends are statistically significant.

Outlier Testing

No potential outliers were observed on the T v. C graphs; therefore, no outlier testing was performed.

Trend Analysis

Visual trends apparent in the T v. C graphs were evaluated in ChemStat™ using the Mann-Kendall Trend Analysis to determine if a subset of data should be used in calculating the confidence interval. Trends were evaluated using a 95-percent (one-tailed) confidence level, i.e., a significance level (α) of 0.05. A statistically significant decreasing trend was noted for lithium at MW-17-15.

Distribution of the Data Sets

ChemStat™ was utilized to evaluate each data set for normality. If the skewness coefficient was calculated to be between negative one and one, then the data were assumed to be approximately normally distributed. If the skewness coefficient was calculated as greater than one (or less than negative one) then the calculation was performed on the natural log (Ln) of the data. If the Ln of the data still determined that the data appeared to be skewed, then the Shapiro-Wilk test of normality (Shapiro-Wilk) was performed. The Shapiro-Wilk statistic was calculated on both non-transformed data, and the Ln-transformed data. If the Shapiro-Wilk statistic indicated that normal distributional assumptions were not valid, then the parameter was considered a candidate for non-parametric statistical evaluation. The data distributions are summarized in Table 1.

Confidence Intervals

Variability is recognized in the data set due to changing groundwater quality in response to the operation of the groundwater extraction system. Calculating a confidence interval around a trending data set incorporates not only variability present naturally in the underlying dataset but can exaggerate variability.

Table 1 presents the calculated confidence intervals for each well-constituent pair. For normal and lognormal distributions, confidence intervals are calculated for 99 percent confidence using parametric methods. For non-normal datasets, a nonparametric confidence interval is utilized, resulting in the highest and lowest values from the contributing dataset as the confidence limits.

The confidence intervals calculated through the above-described process will be compared to the GWPS to determine if an exceedance has occurred. An exceedance of the standard occurs when the 99 percent lower confidence level of the downgradient data exceeds the GWPS.

Attachments

Table 1 Summary of Descriptive Statistics and Confidence Interval Calculations

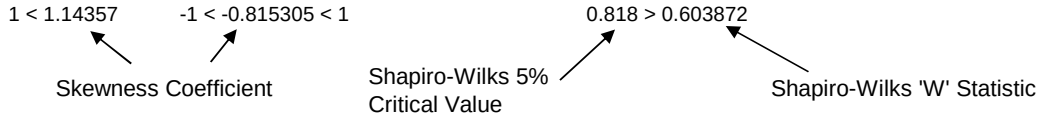
Attachment A ChemStat™ Outputs

Table 1
Summary of Descriptive Statistics and Confidence Interval Calculations

Table 1
Summary of Descriptive Statistics and Confidence Interval Calculations
Assessment Monitoring Statistical Evaluation - November and December 2022
DTE Electric Company – River Rouge Power Plant

Parameter[1]	Percent Non-Detect	Outliers?	Trend?	Skewness		Shapiro-Wilks Test (5% Critical Value)		Parametric / Non-Parametric	Confidence Interval[2]
				Un-Transformed	Natural Log	Un-Transformed	Natural Log		
MW-16-01									
Arsenic	0%	No	No	-1.02641 < -1	-1.87389 < -1	0.818 < 0.89868	--	Parametric	[81, 190]
Lithium	0%	No	No	-1 < 0.667194 < 1	--	--	--	Parametric	[35, 64]
MW-17-14[3]									
Lithium	20%	No	No	1 < 1.23953	-1 < 0.334967 < 1	--	--	Parametric	[0.98, 110]
MW-17-15[3]									
Arsenic	0%	No	No	-1 < 0.0544274 < 1	--	--	--	Parametric	[4.3, 37]
Lithium	0%	No	Yes	-1 < 0.994461 < 1	--	--	--	Parametric	[9.4, 78]

Notes:



(1) Well-parameter combinations that have one or more direct exceedances of the Groundwater Protection Standard within the most recent eight sampling events.
(2) The most recent eight data points are used to calculate the confidence interval to be representative of current conditions.
(3) The most recent five data points are used to screen for direct exceedances of the Groundwater Protection Standards and for calculation of the confidence intervals.

Attachment A
ChemStat™ Confidence Interval Outputs

Concentrations (ug/L)

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Measurements: 24
Total Non-Detect: 13
Percent Non-Detects: 54.1667%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

There are 3 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-16-01	8	0 (0%)	3/29/2019	170	170
			9/26/2019	140	140
			3/20/2020	170	170
			11/11/2020	130	130
			2/25/2021	110	110
			10/20/2021	200	200
			2/22/2022	140	140
			12/1/2022	28	28
			8/5/2016	**37**	**37**
			9/30/2016	**37**	**37**
			11/18/2016	**39**	**39**
			1/20/2017	**40**	**40**
			3/10/2017	**38**	**38**
			4/28/2017	**37**	**37**
			6/16/2017	**35**	**35**
			7/21/2017	**36**	**36**
			4/6/2018	**160**	**160**
			5/30/2018	**170**	**170**
			10/16/2018	**160**	**160**
MW-16-02	8	6 (75%)	3/29/2019	ND<2.5 U	ND<5 U
			9/26/2019	ND<2.5 U	ND<5 U
			3/20/2020	ND<2.5 U	ND<5 U
			11/11/2020	ND<2.5 U	ND<5 U
			2/25/2021	2.6	2.6
			10/20/2021	ND<2.5 U	ND<5 U
			2/22/2022	2.4	2.4
			12/1/2022	ND<2.5	ND<5
			8/5/2016	**24**	**24**
			9/30/2016	**27**	**27**
			11/18/2016	**30**	**30**
			1/20/2017	**31**	**31**
			3/10/2017	**29**	**29**
			4/28/2017	**30**	**30**
			6/16/2017	**30**	**30**
			7/21/2017	**27**	**27**
			4/6/2018	**15**	**15**
			5/30/2018	**ND<2.5 U**	**ND<5 U**
			10/16/2018	**7.9**	**7.9**
MW-16-03	8	7 (87.5%)	3/29/2019	ND<2.5 U	ND<5 U
			9/26/2019	ND<2.5 U	ND<5 U
			3/20/2020	ND<2.5 U	ND<5 U
			11/11/2020	ND<2.5 U	ND<5 U
			2/25/2021	ND<2.5	ND<5
			10/20/2021	ND<2.5 U	ND<5 U
			2/22/2022	0.36 J	0.36 J
			11/30/2022	ND<2.5	ND<5
			8/5/2016	**91**	**91**
			9/30/2016	**40**	**40**

11/18/2016	21	21
1/20/2017	13	13
3/10/2017	12	12
4/28/2017	12	12
6/16/2017	12	12
7/21/2017	12	12
4/6/2018	ND<2.5 U	ND<5 U
5/30/2018	ND<2.5 U	ND<5 U
10/16/2018	ND<2.5 U	ND<5 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Concentrations (ug/L)

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Measurements: 24
Total Non-Detect: 6
Percent Non-Detects: 25%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

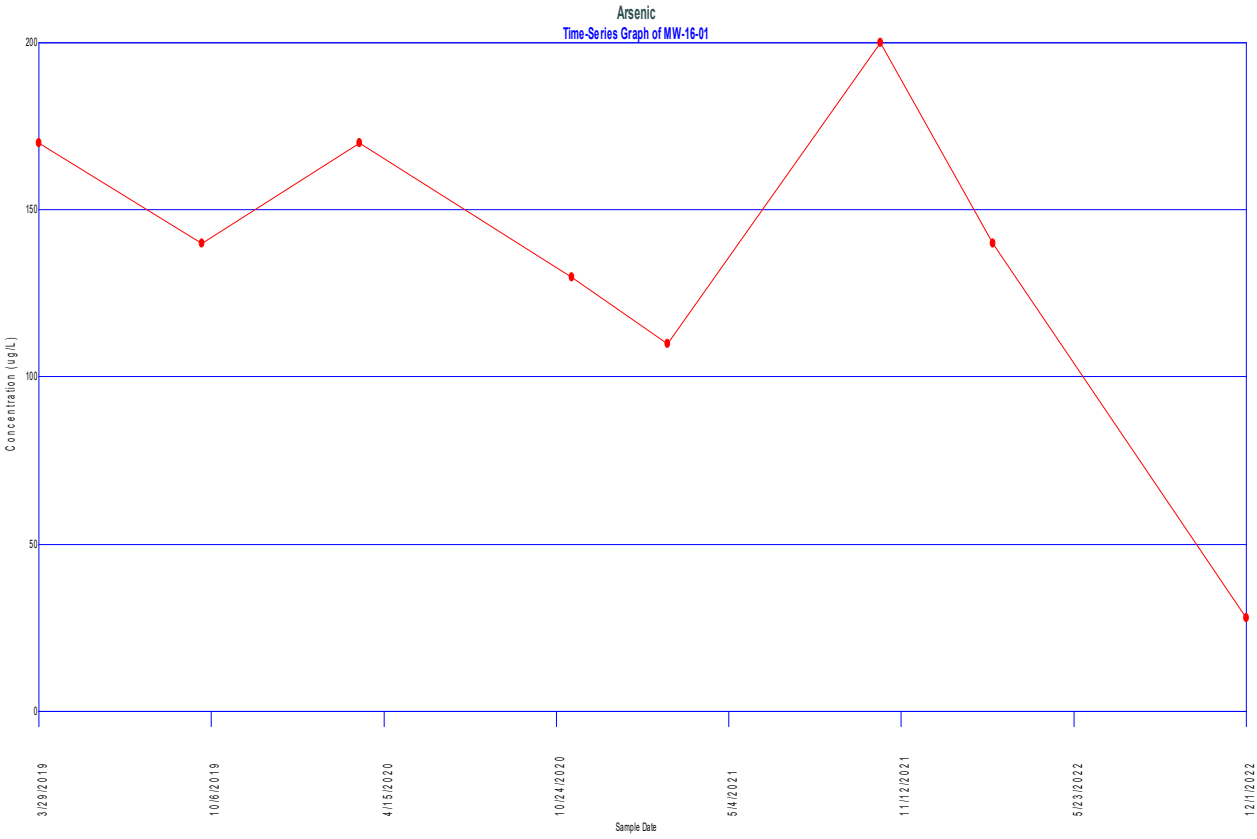
There are 3 compliance locations

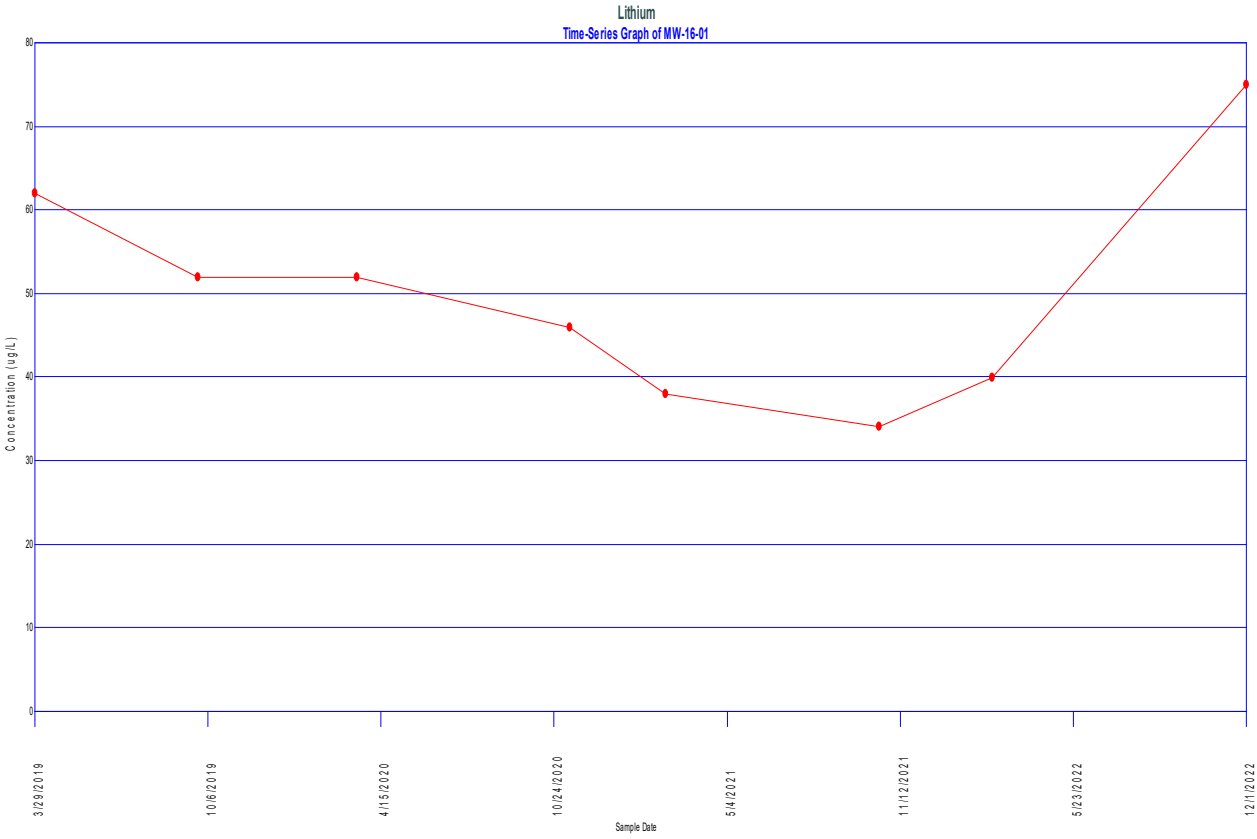
Loc.	Meas.	ND	Date	Conc.	Original
MW-16-01	8	0 (0%)	3/29/2019	62	62
			9/26/2019	52	52
			3/20/2020	52	52
			11/11/2020	46	46
			2/25/2021	38	38
			10/20/2021	34	34
			2/22/2022	40	40
			12/1/2022	75	75
			8/5/2016	**44**	**44**
			9/30/2016	**53**	**53**
			11/18/2016	**50**	**50**
			1/20/2017	**48**	**48**
			3/10/2017	**49**	**49**
			4/28/2017	**53**	**53**
			6/16/2017	**51**	**51**
			7/21/2017	**44**	**44**
			4/6/2018	**49**	**49**
			5/30/2018	**51**	**51**
			10/16/2018	**59**	**59**
MW-16-02	8	0 (0%)	3/29/2019	21	21
			9/26/2019	18	18
			3/20/2020	14	14
			11/11/2020	13	13
			2/25/2021	14	14
			10/20/2021	14	14
			2/22/2022	16	16
			12/1/2022	11	11
			8/5/2016	**57**	**57**
			9/30/2016	**64**	**64**
			11/18/2016	**62**	**62**
			1/20/2017	**64**	**64**
			3/10/2017	**58**	**58**
			4/28/2017	**71**	**71**
			6/16/2017	**64**	**64**
			7/21/2017	**52**	**52**
			4/6/2018	**45**	**45**
			5/30/2018	**28**	**28**
			10/16/2018	**27**	**27**
MW-16-03	8	6 (75%)	3/29/2019	ND<4 U	ND<8 U
			9/26/2019	ND<4 U	ND<8 U
			3/20/2020	ND<4 U	ND<8 U
			11/11/2020	ND<4 U	ND<8 U
			2/25/2021	4.8	4.8
			10/20/2021	ND<4 U	ND<8 U
			2/22/2022	7.9	7.9
			11/30/2022	ND<4	ND<8
			8/5/2016	**29**	**29**
			9/30/2016	**44**	**44**

11/18/2016	44	44
1/20/2017	49	49
3/10/2017	45	45
4/28/2017	51	51
6/16/2017	49	49
7/21/2017	41	41
4/6/2018	15	15
5/30/2018	11	11
10/16/2018	ND<4 U	ND<8 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original


Arsenic
Time-Series Graph of MW-16-01
200
150
100
50
0
Concentration (ug/L)
3/29/2019
10/6/2019
4/15/2020
10/24/2020
5/4/2021
11/12/2021
5/23/2022
12/1/2022
Sample Date


Lithium
Time-Series Graph of MW-16-01
Concentration (ug/L)
80
70
60
50
40
30
20
10
0
3/29/2019
10/6/2019
4/15/2020
10/24/2020
5/4/2021
11/12/2021
5/23/2022
12/1/2022
Sample Date

Mann-Kendall Trend Analysis

Parameter: Arsenic
Location: MW-16-01
Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
140	170	-30	0	1
170	170	0	0	1
130	170	-40	0	2
110	170	-60	0	3
200	170	30	1	3
140	170	-30	1	4
28	170	-142	1	5
170	140	30	2	5
130	140	-10	2	6
110	140	-30	2	7
200	140	60	3	7
140	140	0	3	7
28	140	-112	3	8
130	170	-40	3	9
110	170	-60	3	10
200	170	30	4	10
140	170	-30	4	11
28	170	-142	4	12
110	130	-20	4	13
200	130	70	5	13
140	130	10	6	13
28	130	-102	6	14
200	110	90	7	14
140	110	30	8	14
28	110	-82	8	15
140	200	-60	8	16
28	200	-172	8	17
28	140	-112	8	18

S Statistic = 8 - 18 = -10
Comparing at 95% confidence level (upward trend)
Probability of obtaining S >= -10 is 0.138
S < 0 or 0.138 >= 0.05 indicating no evidence of an upward trend

Mann-Kendall Trend Analysis

Parameter: Arsenic
Location: MW-16-01
Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
140	170	-30	0	1
170	170	0	0	1
130	170	-40	0	2
110	170	-60	0	3
200	170	30	1	3
140	170	-30	1	4
28	170	-142	1	5
170	140	30	2	5
130	140	-10	2	6
110	140	-30	2	7
200	140	60	3	7
140	140	0	3	7
28	140	-112	3	8
130	170	-40	3	9
110	170	-60	3	10
200	170	30	4	10
140	170	-30	4	11
28	170	-142	4	12
110	130	-20	4	13
200	130	70	5	13
140	130	10	6	13
28	130	-102	6	14
200	110	90	7	14
140	110	30	8	14
28	110	-82	8	15
140	200	-60	8	16
28	200	-172	8	17
28	140	-112	8	18

S Statistic = 8 - 18 = -10
Comparing at 95% confidence level (downward trend)
Probability of obtaining S >= 10 is 0.138
S > 0 or 0.138 > 0.05 indicating no evidence of a downward trend

Mann-Kendall Trend Analysis

Parameter: Lithium
Location: MW-16-01
Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
52	62	-10	0	1
52	62	-10	0	2
46	62	-16	0	3
38	62	-24	0	4
34	62	-28	0	5
40	62	-22	0	6
75	62	13	1	6
52	52	0	1	6
46	52	-6	1	7
38	52	-14	1	8
34	52	-18	1	9
40	52	-12	1	10
75	52	23	2	10
46	52	-6	2	11
38	52	-14	2	12
34	52	-18	2	13
40	52	-12	2	14
75	52	23	3	14
38	46	-8	3	15
34	46	-12	3	16
40	46	-6	3	17
75	46	29	4	17
34	38	-4	4	18
40	38	2	5	18
75	38	37	6	18
40	34	6	7	18
75	34	41	8	18
75	40	35	9	18

S Statistic = 9 - 18 = -9
Comparing at 95% confidence level (upward trend)
Failed to calculate probability for S = -9
Table out of range

The negative value of S indicates a downward trend.
From the tabulated values for n=8 and S=-9, the observed trend has a significance level of 0.1685
S < 0 and 0.1685 > 0.05
Indicating no evidence of an upward trend.

Mann-Kendall Trend Analysis

Parameter: Lithium
Location: MW-16-01
Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
52	62	-10	0	1
52	62	-10	0	2
46	62	-16	0	3
38	62	-24	0	4
34	62	-28	0	5
40	62	-22	0	6
75	62	13	1	6
52	52	0	1	6
46	52	-6	1	7
38	52	-14	1	8
34	52	-18	1	9
40	52	-12	1	10
75	52	23	2	10
46	52	-6	2	11
38	52	-14	2	12
34	52	-18	2	13
40	52	-12	2	14
75	52	23	3	14
38	46	-8	3	15
34	46	-12	3	16
40	46	-6	3	17
75	46	29	4	17
34	38	-4	4	18
40	38	2	5	18
75	38	37	6	18
40	34	6	7	18
75	34	41	8	18
75	40	35	9	18

S Statistic = 9 - 18 = -9
Comparing at 95% confidence level (downward trend)
Failed to calculate probability for S = -9
Table out of range

The negative value of S indicates a downward trend.
From the tabulated values for n=8 and S=-9, the observed trend has a significance level of 0.1685
0.1685 > 0.05
Indicating no evidence of a downward trend.

Skewness Coefficient

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	8	136	51.8459	**-1.02641**
MW-16-02	8	2.5	0.0534522	0
MW-16-03	8	2.2325	0.756604	**-2.26779**

All Locations

Obs.	Mean	Std. Dev.	Skewness
24	46.9108	70.422	**1.05988**

Skewness Coefficient

Parameter: Arsenic

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	8	4.79418	0.619053	**-1.87389**
MW-16-02	8	0.916091	0.0213955	-0.0899895
MW-16-03	8	0.674048	0.685166	**-2.26779**

All Locations

Obs.	Mean	Std. Dev.	Skewness
24	2.12811	1.99457	0.62792

Shapiro-Wilks Test of Normality

Parameter: Arsenic

Location: MW-16-01

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 4 for 8 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	28	200	172	0.6052	104.094
2	110	170	60	0.3164	18.984
3	130	170	40	0.1743	6.972
4	140	140	0	0.0561	0
5	140	140	0		
6	170	130	-40		
7	170	110	-60		
8	200	28	-172		

Sum of b values = 130.05
Sample Standard Deviation = 51.8459
W Statistic = 0.898868

5% Critical value of 0.818 is less than 0.898868
Data is normally distributed at 95% level of significance

1% Critical value of 0.749 is less than 0.898868
Data is normally distributed at 99% level of significance

Skewness Coefficient

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	8	49.875	13.5903	0.667194
MW-16-02	8	15.125	3.13676	0.708374
MW-16-03	8	4.5875	1.36741	**2.09893**

All Locations

Obs.	Mean	Std. Dev.	Skewness
24	23.1958	21.2238	0.968093

Confidence Interval

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Compliance Locations

Location	**MW-16-01**
Mean	136
Std Dev	51.8459
Degrees of Freedom	7
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[81.0467, 190.953]	136	TRUE
95%	1.89458	[101.272, 170.728]	136	TRUE

Location	**MW-16-02**
Mean	2.5
Std Dev	0.0534522
Degrees of Freedom	7
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[2.44334, 2.55666]	2.5	FALSE
95%	1.89458	[2.4642, 2.5358]	2.5	FALSE

Location	**MW-16-03**
Mean	2.2325
Std Dev	0.756604
Degrees of Freedom	7
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[1.43055, 3.03445]	2.2325	FALSE
95%	1.89458	[1.7257, 2.7393]	2.2325	FALSE

Confidence Interval

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Compliance Locations

Location	**MW-16-01**
Mean	49.875
Std Dev	13.5903
Degrees of Freedom	7
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[35.4702, 64.2798]	49.875	FALSE
95%	1.89458	[40.7717, 58.9783]	49.875	**TRUE**

Location	**MW-16-02**
Mean	15.125
Std Dev	3.13676
Degrees of Freedom	7
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[11.8002, 18.4498]	15.125	FALSE
95%	1.89458	[13.0239, 17.2261]	15.125	FALSE

Location	**MW-16-03**
Mean	4.5875
Std Dev	1.36741
Degrees of Freedom	7
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[3.13813, 6.03687]	4.5875	FALSE
95%	1.89458	[3.67156, 5.50344]	4.5875	FALSE

Concentrations (ug/L)

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 42
Total Non-Detect: 35
Percent Non-Detects: 83.3333%
Total Background Measurements: 2
There are 2 background locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-17-06	1	0 (0%)	12/1/2022	12	12
MW-17-07	1	0 (0%)	12/1/2022	17	17

There are 6 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-16-04S	15	15 (100%)	8/5/2016	ND<5 U	ND<5 U
			9/30/2016	ND<5 U	ND<5 U
			11/18/2016	ND<5 U	ND<5 U
			1/20/2017	ND<5 U	ND<5 U
			3/10/2017	ND<5 U	ND<5 U
			4/28/2017	ND<5 U	ND<5 U
			6/16/2017	ND<5 U	ND<5 U
			7/21/2017	ND<5 U	ND<5 U
			4/6/2018	ND<5 U	ND<5 U
			5/30/2018	ND<5 U	ND<5 U
			10/16/2018	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			11/12/2020	ND<5 U	ND<5 U
			10/21/2021	ND<5 U	ND<5 U
			12/1/2022	ND<5	ND<5
MW-17-05	5	5 (100%)	10/15/2018	ND<5 U	ND<5 U
			9/27/2019	ND<5 U	ND<5 U
			11/13/2020	ND<5 U	ND<5 U
			10/21/2021	ND<5 U	ND<5 U
			11/30/2022	ND<5	ND<5
MW-17-14	5	5 (100%)	10/16/2018	ND<5 U	ND<5 U
			9/27/2019	ND<5 U	ND<5 U
			11/12/2020	ND<5 U	ND<5 U
			10/21/2021	ND<5 U	ND<5 U
			12/1/2022	ND<5	ND<5
MW-17-15	5	0 (0%)	10/16/2018	34	34
			9/26/2019	20	20
			11/12/2020	18	18
			10/21/2021	23	23
			12/1/2022	7.2	7.2
MW-17-18	5	5 (100%)	10/15/2018	ND<5 U	ND<5 U
			9/27/2019	ND<5 U	ND<5 U
			11/11/2020	ND<5 U	ND<5 U
			10/21/2021	ND<5 U	ND<5 U
			11/30/2022	ND<5	ND<5
MW-17-20	5	5 (100%)	10/16/2018	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			11/12/2020	ND<5 U	ND<5 U
			10/20/2021	ND<5 U	ND<5 U
			11/30/2022	ND<5	ND<5

There are 4 unused locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-17-08	1	1 (100%)	10/21/2021	ND<5 U	ND<5 U
MW-17-19	1	1 (100%)	10/21/2021	ND<5 U	ND<5 U
MW-17-12	2	1 (50%)	9/27/2019 10/21/2021	8.4 ND<5 U	8.4 ND<5 U
MW-17-13	3	3 (100%)	10/16/2018 9/26/2019 10/21/2021	ND<5 U ND<5 U ND<5 U	ND<5 U ND<5 U ND<5 U

Concentrations (ug/L)

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 42
Total Non-Detect: 1
Percent Non-Detects: 2.38095%
Total Background Measurements: 2
There are 2 background locations

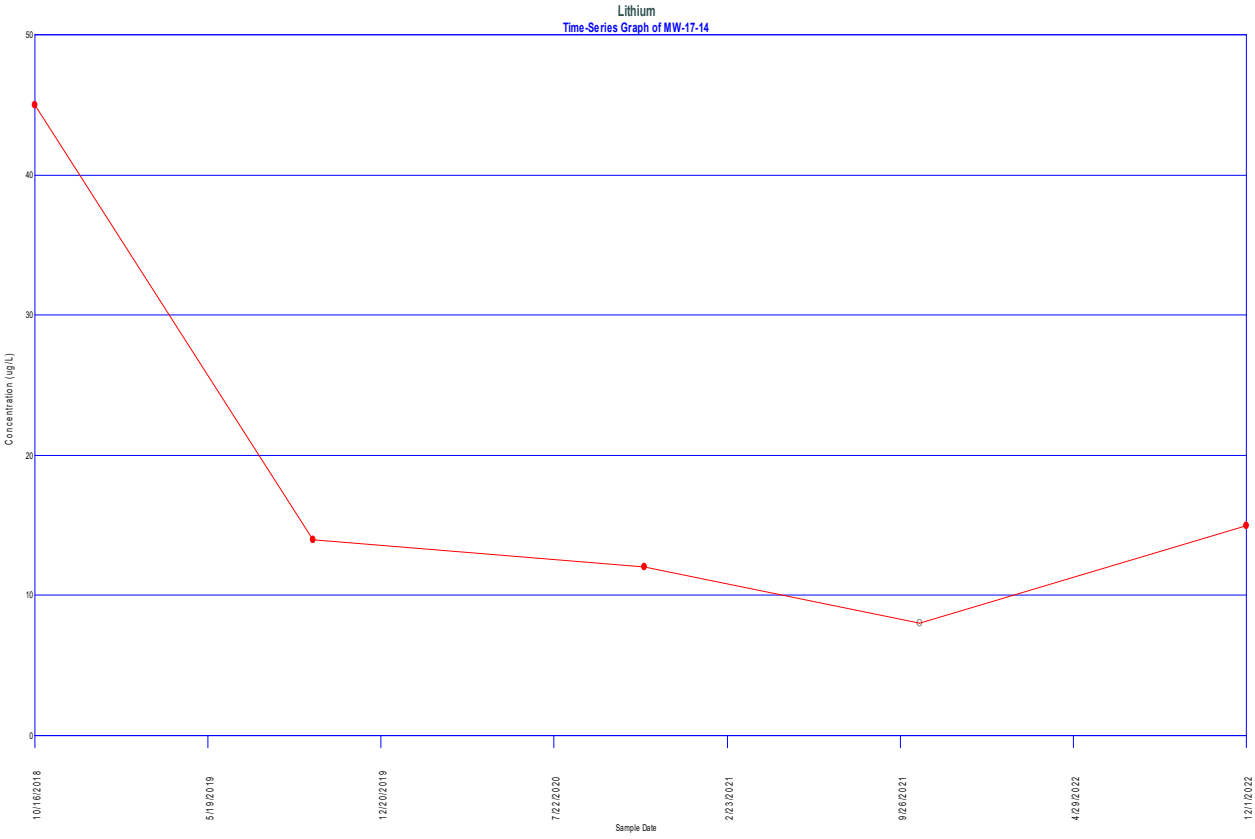
Loc.	Meas.	ND	Date	Conc.	Original
MW-17-06	1	0 (0%)	12/1/2022	19	19
MW-17-07	1	0 (0%)	12/1/2022	25	25

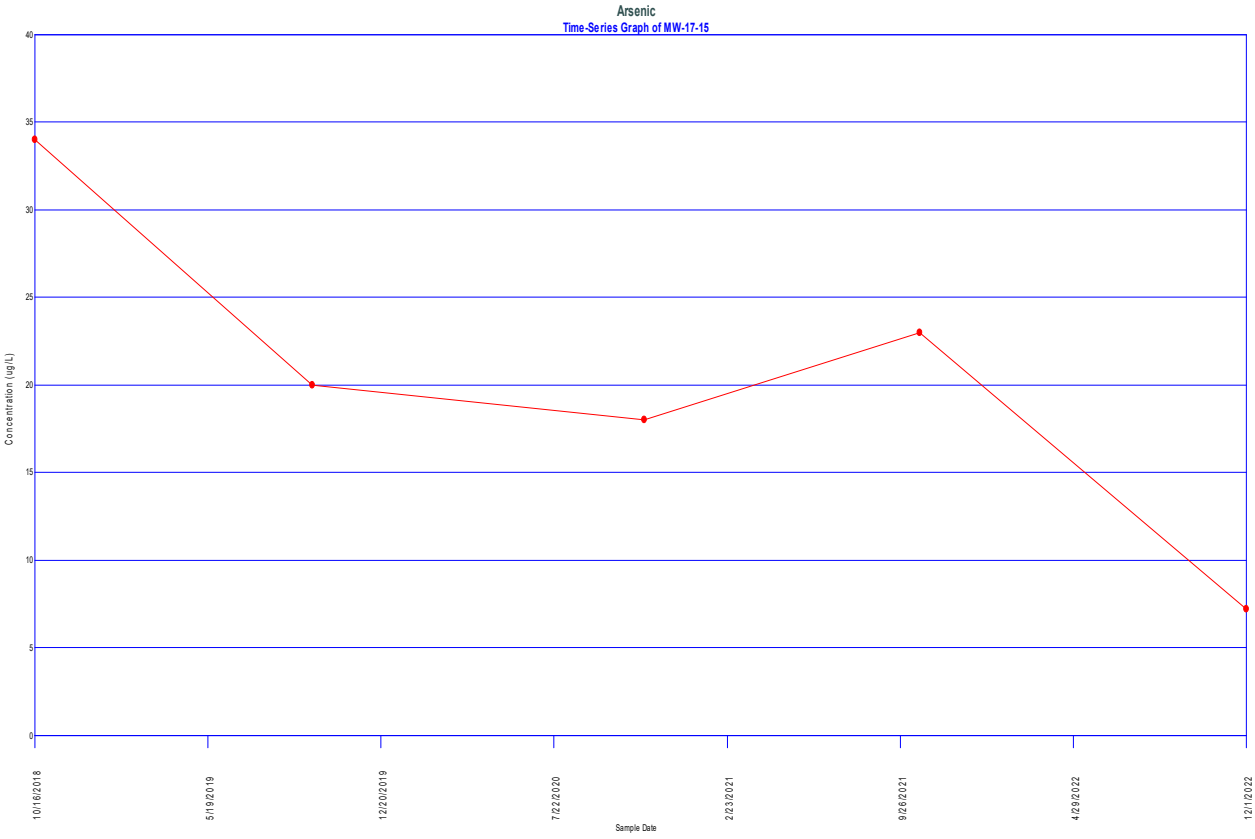
There are 6 compliance locations

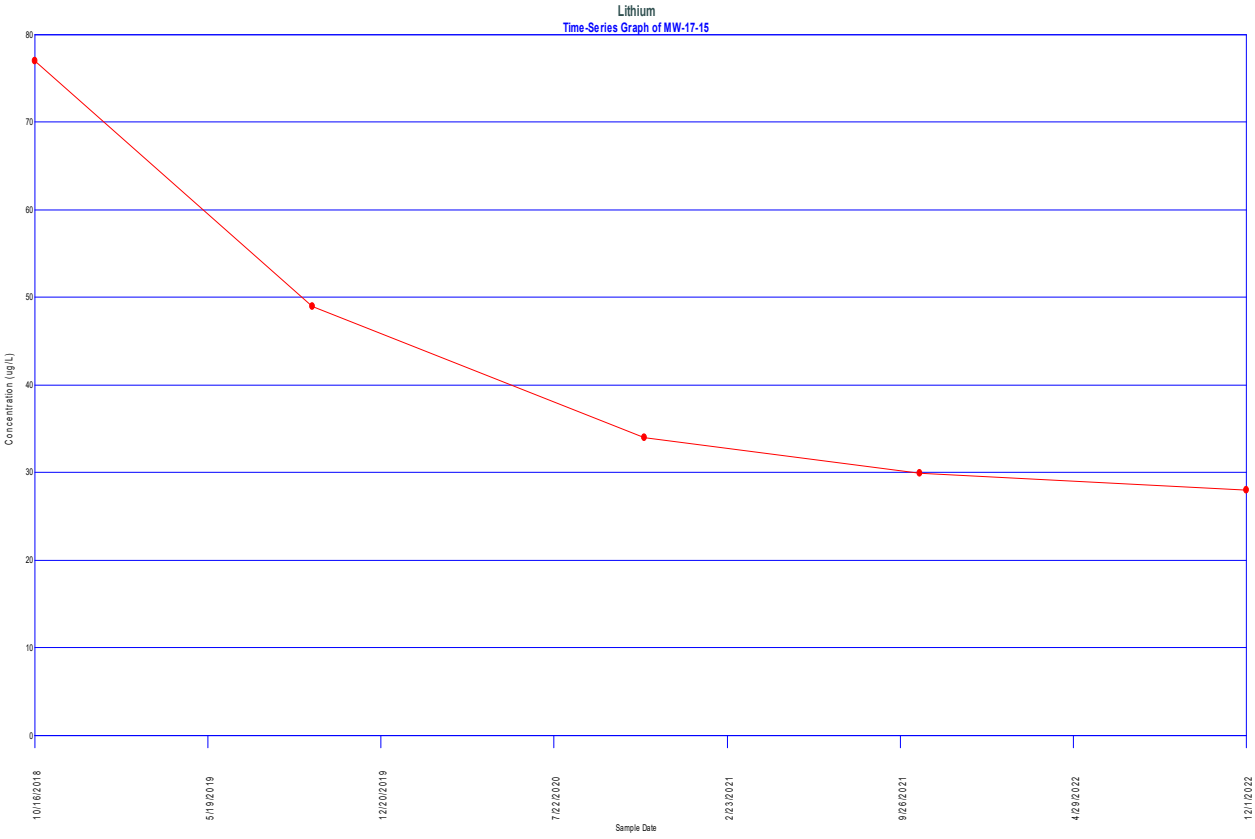
Loc.	Meas.	ND	Date	Conc.	Original
MW-16-04S	15	0 (0%)	8/5/2016	18	18
			9/30/2016	21	21
			11/18/2016	18	18
			1/20/2017	25	25
			3/10/2017	24	24
			4/28/2017	26	26
			6/16/2017	26	26
			7/21/2017	17	17
			4/6/2018	27	27
			5/30/2018	26	26
			10/16/2018	24	24
			9/26/2019	19	19
			11/12/2020	21	21
			10/21/2021	36	36
			12/1/2022	39	39
MW-17-05	5	0 (0%)	10/15/2018	13	13
			9/27/2019	9.2	9.2
			11/13/2020	14	14
			10/21/2021	11	11
			11/30/2022	17	17
MW-17-14	5	1 (20%)	10/16/2018	45	45
			9/27/2019	14	14
			11/12/2020	12	12
			10/21/2021	ND<8 U	ND<8 U
			12/1/2022	15	15
MW-17-15	5	0 (0%)	10/16/2018	77	77
			9/26/2019	49	49
			11/12/2020	34	34
			10/21/2021	30	30
			12/1/2022	28	28
MW-17-18	5	0 (0%)	10/15/2018	22	22
			9/27/2019	17	17
			11/11/2020	20	20
			10/21/2021	20	20
			11/30/2022	19	19
MW-17-20	5	0 (0%)	10/16/2018	32	32
			9/26/2019	25	25
			11/12/2020	34	34
			10/20/2021	29	29
			11/30/2022	28	28

There are 4 unused locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-17-08	1	0 (0%)	10/21/2021	12	12
MW-17-19	1	0 (0%)	10/21/2021	46	46
MW-17-12	2	0 (0%)	9/27/2019 10/21/2021	12 13	12 13
MW-17-13	3	3 (100%)	10/16/2018 9/26/2019 10/21/2021	ND<8 U ND<8 U ND<8 U	ND<8 U ND<8 U ND<8 U


Lithium
Time-Series Graph of MW-17-14
Concentration (ug/L)
50
40
30
20
10
0
10/16/2018
5/19/2019
12/20/2019
7/22/2020
2/23/2021
9/26/2021
4/29/2022
12/1/2022
Sample Date


Arsenic
Time-Series Graph of MW-17-15
Concentration (ug/L)
40
35
30
25
20
15
10
5
0
10/16/2018
5/19/2019
12/20/2019
7/22/2020
2/23/2021
9/26/2021
4/29/2022
12/1/2022
Sample Date


Lithium
Time-Series Graph of MW-17-15
Concentration (ug/L)
80
70
60
50
40
30
20
10
0
10/16/2018
5/19/2019
12/20/2019
7/22/2020
2/23/2021
9/26/2021
4/29/2022
12/1/2022
Sample Date

Mann-Kendall Trend Analysis

Parameter: Lithium
Location: MW-17-14
Original Data (Not Transformed)
Aitchison's Adjustment

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
14	45	-31	0	1
12	45	-33	0	2
ND<8 U	45	-37	0	3
15	45	-30	0	4
12	14	-2	0	5
ND<8 U	14	-6	0	6
15	14	1	1	6
ND<8 U	12	-4	1	7
15	12	3	2	7
15	ND<8 U	7	3	7

S Statistic = 3 - 7 = -4
Comparing at 95% confidence level (upward trend)
Probability of obtaining S >= -4 is 0.242
S < 0 or 0.242 >= 0.05 indicating no evidence of an upward trend

Mann-Kendall Trend Analysis

Parameter: Lithium
Location: MW-17-14
Original Data (Not Transformed)
Aitchison's Adjustment

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
14	45	-31	0	1
12	45	-33	0	2
ND<8 U	45	-37	0	3
15	45	-30	0	4
12	14	-2	0	5
ND<8 U	14	-6	0	6
15	14	1	1	6
ND<8 U	12	-4	1	7
15	12	3	2	7
15	ND<8 U	7	3	7

S Statistic = 3 - 7 = -4
Comparing at 95% confidence level (downward trend)
Probability of obtaining S >= 4 is 0.242
S > 0 or 0.242 > 0.05 indicating no evidence of a downward trend

Mann-Kendall Trend Analysis

Parameter: Arsenic
Location: MW-17-15
Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
20	34	-14	0	1
18	34	-16	0	2
23	34	-11	0	3
7.2	34	-26.8	0	4
18	20	-2	0	5
23	20	3	1	5
7.2	20	-12.8	1	6
23	18	5	2	6
7.2	18	-10.8	2	7
7.2	23	-15.8	2	8

S Statistic = 2 - 8 = -6
Comparing at 95% confidence level (upward trend)
Probability of obtaining S >= -6 is 0.117
S < 0 or 0.117 >= 0.05 indicating no evidence of an upward trend

Mann-Kendall Trend Analysis

Parameter: Arsenic
Location: MW-17-15
Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
20	34	-14	0	1
18	34	-16	0	2
23	34	-11	0	3
7.2	34	-26.8	0	4
18	20	-2	0	5
23	20	3	1	5
7.2	20	-12.8	1	6
23	18	5	2	6
7.2	18	-10.8	2	7
7.2	23	-15.8	2	8

S Statistic = 2 - 8 = -6
Comparing at 95% confidence level (downward trend)
Probability of obtaining S >= 6 is 0.117
S > 0 or 0.117 > 0.05 indicating no evidence of a downward trend

Mann-Kendall Trend Analysis

Parameter: Lithium
Location: MW-17-15
Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
49	77	-28	0	1
34	77	-43	0	2
30	77	-47	0	3
28	77	-49	0	4
34	49	-15	0	5
30	49	-19	0	6
28	49	-21	0	7
30	34	-4	0	8
28	34	-6	0	9
28	30	-2	0	10

S Statistic = 0 - 10 = -10
Comparing at 95% confidence level (upward trend)
Probability of obtaining S >= -10 is 0.0083
S < 0 or 0.0083 >= 0.05 indicating no evidence of an upward trend

Mann-Kendall Trend Analysis

Parameter: Lithium
Location: MW-17-15
Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
49	77	-28	0	1
34	77	-43	0	2
30	77	-47	0	3
28	77	-49	0	4
34	49	-15	0	5
30	49	-19	0	6
28	49	-21	0	7
30	34	-4	0	8
28	34	-6	0	9
28	30	-2	0	10

S Statistic = 0 - 10 = -10
Comparing at 95% confidence level (downward trend)
Probability of obtaining S >= 10 is 0.0083
S < 0 and 0.0083 < 0.05 indicating a downward trend

Skewness Coefficient

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Background Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-17-06	1	12	Div 0	**Div 0**
MW-17-07	1	17	Div 0	**Div 0**

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-04S	15	2.5	0	**Div 0**
MW-17-05	5	2.5	0	**Div 0**
MW-17-14	5	2.5	0	**Div 0**
MW-17-15	5	20.44	9.64199	0.0544274
MW-17-18	5	2.5	0	**Div 0**
MW-17-20	5	2.5	0	**Div 0**

All Locations

Obs.	Mean	Std. Dev.	Skewness
42	5.20714	6.93838	**2.57498**

Skewness Coefficient

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Background Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-17-06	1	19	Div 0	**Div 0**
MW-17-07	1	25	Div 0	**Div 0**

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-04S	15	24.4667	6.2777	**1.02417**
MW-17-05	5	12.84	2.9712	0.203514
MW-17-14	5	18	15.7003	**1.2012**
MW-17-15	5	43.6	20.4034	0.994461
MW-17-18	5	19.6	1.81659	-0.179042
MW-17-20	5	29.6	3.50714	-0.0171057

All Locations

Obs.	Mean	Std. Dev.	Skewness
42	24.5048	12.3923	**1.96227**

Skewness Coefficient

Parameter: Lithium

Original Data (Not Transformed)

Aitchison's Adjustment

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Background Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-17-06	1	19	Div 0	**Div 0**
MW-17-07	1	12.5	Div 0	**Div 0**

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-04S	15	24.4667	6.2777	**1.02417**
MW-17-05	5	12.84	2.9712	0.203514
MW-17-14	5	17.2	16.6643	**1.23953**
MW-17-15	5	43.6	20.4034	0.994461
MW-17-18	5	19.6	1.81659	-0.179042
MW-17-20	5	29.6	3.50714	-0.0171057

All Locations

Obs.	Mean	Std. Dev.	Skewness
42	24.4095	12.5679	**1.95423**

Skewness Coefficient

Parameter: Lithium

Natural Logarithm Transformation

Aitchison's Adjustment

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Background Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-17-06	1	2.94444	Div 0	**Div 0**
MW-17-07	1	1.60944	Div 0	**Div 0**

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-04S	15	3.16931	0.240298	0.529783
MW-17-05	5	2.53086	0.234038	-0.0801887
MW-17-14	5	2.32774	1.40284	0.334967
MW-17-15	5	3.69908	0.420114	0.732027
MW-17-18	5	2.97203	0.0939666	-0.331451
MW-17-20	5	3.38209	0.119538	-0.145295

All Locations

Obs.	Mean	Std. Dev.	Skewness
42	3.05386	0.636196	0.159909

Confidence Interval

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Background Locations

Location	**MW-17-06**
Mean	12
Std Dev	0
Degrees of Freedom	0
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	31.821	[12, 12]	12	FALSE
95%	2.91999	[12, 12]	12	FALSE

Location	**MW-17-07**
Mean	17
Std Dev	0
Degrees of Freedom	0
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	31.821	[17, 17]	17	FALSE
95%	2.91999	[17, 17]	17	FALSE

Compliance Locations

Location	**MW-16-04S**
Mean	2.5
Std Dev	0
Degrees of Freedom	14
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.62449	[2.5, 2.5]	2.5	FALSE
95%	1.76131	[2.5, 2.5]	2.5	FALSE

Location	**MW-17-05**
Mean	2.5
Std Dev	0
Degrees of Freedom	4
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[2.5, 2.5]	2.5	FALSE
95%	2.13185	[2.5, 2.5]	2.5	FALSE

Location	**MW-17-14**
Mean	2.5
Std Dev	0
Degrees of Freedom	4
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[2.5, 2.5]	2.5	FALSE
95%	2.13185	[2.5, 2.5]	2.5	FALSE

Location MW-17-15

Mean	20.44
Std Dev	9.64199
Degrees of Freedom	4
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[4.2831, 36.5969]	20.44	FALSE
95%	2.13185	[11.2474, 29.6326]	20.44	FALSE

Location MW-17-18

Mean	2.5
Std Dev	0
Degrees of Freedom	4
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[2.5, 2.5]	2.5	FALSE
95%	2.13185	[2.5, 2.5]	2.5	FALSE

Location MW-17-20

Mean	2.5
Std Dev	0
Degrees of Freedom	4
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[2.5, 2.5]	2.5	FALSE
95%	2.13185	[2.5, 2.5]	2.5	FALSE

Confidence Interval

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Background Locations

Location	**MW-17-06**
Mean	19
Std Dev	0
Degrees of Freedom	0
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	31.821	[19, 19]	19	FALSE
95%	2.91999	[19, 19]	19	FALSE

Location	**MW-17-07**
Mean	25
Std Dev	0
Degrees of Freedom	0
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	31.821	[25, 25]	25	FALSE
95%	2.91999	[25, 25]	25	FALSE

Compliance Locations

Location	**MW-16-04S**
Mean	24.4667
Std Dev	6.2777
Degrees of Freedom	14
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.62449	[20.2126, 28.7207]	24.4667	FALSE
95%	1.76131	[21.6118, 27.3216]	24.4667	FALSE

Location	**MW-17-05**
Mean	12.84
Std Dev	2.9712
Degrees of Freedom	4
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[7.86123, 17.8188]	12.84	FALSE
95%	2.13185	[10.0073, 15.6727]	12.84	FALSE

Location	**MW-17-14**
Mean	18
Std Dev	15.7003
Degrees of Freedom	4
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[-8.30872, 44.3087]	18	FALSE
95%	2.13185	[3.03146, 32.9685]	18	FALSE

Location	MW-17-15
Mean	43.6
Std Dev	20.4034
Degrees of Freedom	4
Comparison Level	40
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[9.41036, 77.7896]	43.6	FALSE
95%	2.13185	[24.1476, 63.0524]	43.6	FALSE

Location	MW-17-18
Mean	19.6
Std Dev	1.81659
Degrees of Freedom	4
Comparison Level	40
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[16.556, 22.644]	19.6	FALSE
95%	2.13185	[17.8681, 21.3319]	19.6	FALSE

Location	MW-17-20
Mean	29.6
Std Dev	3.50714
Degrees of Freedom	4
Comparison Level	40
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[23.7232, 35.4768]	29.6	FALSE
95%	2.13185	[26.2563, 32.9437]	29.6	FALSE

Confidence Interval

Parameter: Lithium

Natural Logarithm Transformation

Aitchison's Adjustment

Background Locations

Location	**MW-17-06**
Mean	2.94444
Std Dev	0
Degrees of Freedom	0
Comparison Level	**3.68888**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	31.821	[2.94444, 2.94444]	2.94444	FALSE
95%	2.91999	[2.94444, 2.94444]	2.94444	FALSE

Location	**MW-17-07**
Mean	1.60944
Std Dev	0
Degrees of Freedom	0
Comparison Level	**3.68888**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	31.821	[1.60944, 1.60944]	1.60944	FALSE
95%	2.91999	[1.60944, 1.60944]	1.60944	FALSE

Compliance Locations

Location	**MW-16-04S**
Mean	3.16931
Std Dev	0.240298
Degrees of Freedom	14
Comparison Level	**3.68888**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.62449	[3.00647, 3.33214]	3.16931	FALSE
95%	1.76131	[3.06003, 3.27859]	3.16931	FALSE

Location	**MW-17-05**
Mean	2.53086
Std Dev	0.234038
Degrees of Freedom	4
Comparison Level	**3.68888**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[2.13869, 2.92304]	2.53086	FALSE
95%	2.13185	[2.30773, 2.75399]	2.53086	FALSE

Location	**MW-17-14**
Mean	2.32774
Std Dev	1.40284
Degrees of Freedom	4
Comparison Level	**3.68888**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[-0.0229769, 4.67845]	2.32774	FALSE
95%	2.13185	[0.990281, 3.66519]	2.32774	FALSE

Location MW-17-15
Mean 3.69908
Std Dev 0.420114
Degrees of Freedom 4
Comparison Level **3.68888**
Untransformed Comp. Level 40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[2.9951, 4.40305]	3.69908	FALSE
95%	2.13185	[3.29854, 4.09961]	3.69908	FALSE

Location MW-17-18
Mean 2.97203
Std Dev 0.0939666
Degrees of Freedom 4
Comparison Level **3.68888**
Untransformed Comp. Level 40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[2.81457, 3.12949]	2.97203	FALSE
95%	2.13185	[2.88244, 3.06162]	2.97203	FALSE

Location MW-17-20
Mean 3.38209
Std Dev 0.119538
Degrees of Freedom 4
Comparison Level **3.68888**
Untransformed Comp. Level 40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	3.74694	[3.18179, 3.5824]	3.38209	FALSE
95%	2.13185	[3.26813, 3.49606]	3.38209	FALSE