2023 Annual Groundwater Monitoring Report

Range Road Coal Combustion Residual Landfill
3600 Range Road
China Township, Michigan

January 2024

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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, which applies to the DTE Electric Company (DTE Electric) Range Road Coal Combustion Residual Landfill (RRLF) 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 2023 Annual Groundwater Monitoring Report for calendar year 2023 activities at the RRLF CCR unit.

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

Potential SSIs over background limits were noted for several Appendix III constituents in one or more monitoring wells during the April and October 2023 monitoring events. Most of these potential SSIs were either not statistically significant (i.e. verification resampling did not confirm the exceedance) or were evaluated and determined to be a result of natural variability as documented in previous still applicable alternative source demonstrations (ASDs). No initial SSIs over background limits were recorded for Appendix III constituents during the April 2023 monitoring event. DTE Electric is in the process of performing an ASD to further evaluate a total dissolved solids (TDS) SSI at monitoring well MW-16-01 as well as calcium, and sulfate SSIs at monitoring well MW-16-05 for the October 2023 monitoring event. Therefore, detection monitoring will be continued at the RRLF CCR unit in accordance with §257.94 of the CCR Rule pending completion of a successful ASD. With the presence of the vertically and horizontally extensive clay-rich confining till beneath the RRLF CCR unit, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from operations.

1.0 Introduction

1.1 Program Summary

On April 17, 2015, the United States Environmental Protection Agency (USEPA) published the final rule for the regulation and management of Coal Combustion Residuals (CCR) under the Resource Conservation and Recovery Act (RCRA) (the CCR Rule), as amended, which applies to the DTE Electric Company (DTE Electric) Range Road Coal Combustion Residual Landfill (RRLF) CCR unit. Pursuant to the CCR Rule, no later than January 31, 2018, and annually thereafter, the owner or operator of a CCR unit must prepare an annual groundwater monitoring and corrective action report for the CCR unit documenting the status of groundwater monitoring and corrective action for the preceding year in accordance with §257.90(e). On behalf of DTE Electric, TRC Engineers Michigan, Inc., the engineering entity of TRC, has prepared this Annual Groundwater Monitoring Report for calendar year 2023 activities at the RRLF CCR unit (2023 Annual Report).

This 2023 Annual Report presents the monitoring results and the statistical evaluation of the detection monitoring parameters (Appendix III to Part 257 of the CCR Rule) for the April and October 2023 semiannual groundwater monitoring events for the RRLF CCR unit in addition to the alternative source demonstration (ASD) for the second 2022 semiannual detection monitoring event (Appendix A). Detection monitoring for these events continued to be performed in accordance with the *CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company Range Road Landfill* (QAPP) (TRC, July 2016; revised August 2017) and statistically evaluated per the *Groundwater Statistical Evaluation Plan – DTE Electric Company Range Road Coal Combustion Residual Landfill* (Stats Plan) (TRC, October 2017). As part of the statistical evaluation, the data collected during detection monitoring events are evaluated to identify SSIs of detection monitoring parameters compared to background levels.

1.2 Site Overview

The RRLF is located in Section 12, Township 4 North, Range 16 East, 3600 Range Road, China Township in St. Clair County, Michigan. The site occupies approximately 514 acres and is one-half mile west of the St. Clair River and one mile north of the Belle River Power Plant. Prior to Detroit Edison's operations commencing in the 1950s, the RRLF property was used as farmland. The property has been used continuously as a coal ash landfill since Detroit Edison Company (now DTE Electric) began coal ash landfilling operations at the RRLF in the 1950s and is constructed over a natural confining, low permeability clay-rich soil base that serves as an underlying soil barrier. The RRLF property consists of approximately 514 acres of which approximately 402 acres are designated for landfill development. CCR currently occupies approximately 200 acres of the RRLF.

The RRLF is a licensed Coal Ash Landfill in accordance with Michigan's regulations, and is owned and operated by DTE Electric. The disposal facility currently accepts coal ash from DTE Electric's Belle River power plant, from the now inactive former DTE Electric St. Clair power plant and has historically accepted coal ash from the former DTE Electric Marysville and Harbor Beach power plants. The RRLF is operated under the current operating license number 9395 in

accordance with Michigan Part 115 of the Natural Resources and Environmental Protection Act (NREPA), PA 451 of 1994, as amended.

1.3 Geology/Hydrogeology

The RRLF CCR unit is located approximately one-half mile west of the St. Clair River. In general, the RRLF is underlain by 86 to as much as 188 feet of laterally extensive low hydraulic conductivity silty clay-rich deposits. On the eastern portion and northwest corner of RRLF some thin partially saturated silty sand near-surface deposits are present. These deposits are not laterally contiguous, are not in communication with the deeper uppermost aquifer, do not yield a useable quantity of groundwater, and thus are not considered an aquifer per the CCR Rule. On a significant portion of the RRLF, there is a bedrock valley that trends from the northeast corner to the south-central area of the site. The valley is incised in the Bedford and/or Antrim Shale bedrock and filled with unconsolidated glacial deposits consisting of clay, silt, sand and/or gravel. Based on historical oil well logs from the RRLF area, the bedrock valley extends to depths of up to 303 feet below ground surface (ft bgs). Along the western portion of the RRLF, clay-rich till is present continuously to the top of the underlying Bedford or Antrim Shale bedrock in the area of SB-16-01 and SB-16-02 (Figure 1), creating a no flow boundary.

Groundwater within the uppermost aquifer sand/gravel is confined and protected from the CCR unit by the overlying clay-rich aquitard. The top of the sand/gravel uppermost aquifer encountered at each of the CCR monitoring wells and soil borings is at significantly different elevations across the RRLF that, where present, is first encountered at depths ranging from 86 to 196 ft bgs, immediately beneath the overlying clay-rich aquitard. The variability in boring/well depths is a consequence of the heterogeneity of the glacial deposits and is driven by the limited continuity of the coarse-grained sand and gravel outwash within the overlying/encapsulating fine-grained, silty clay till that confines the uppermost aquifer. In addition, there is an apparent lack of interconnection and/or significant vertical variation between the various uppermost aquifer sand and/or gravel units encountered across the RRLF CCR unit.

Given the horizontally expansive clay with substantial vertical thickness, the heterogeneity of the glacial deposits (with the top of the uppermost aquifer elevation across the RRLF CCR unit varying up to 100 feet vertically), the no-flow boundary to the west, and the lack of hydraulic interconnectedness of the uppermost aquifers encountered at the site in some areas, it is not appropriate to infer horizontal flow direction or gradients across the site. With the presence of the vertically and horizontally extensive clay-rich confining till beneath the RRLF CCR unit, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from operations that began in the 1950s.

2.0 Groundwater Monitoring

2.1 Monitoring Well Network

A groundwater monitoring system has been established for the RRLF CCR unit as detailed in the *Groundwater Monitoring System Summary Report – DTE Electric Company Range Road Coal Combustion Residual Landfill* (GWMS Report) (TRC, October 2017). The detection monitoring well network for the RRLF CCR unit currently consists of seven monitoring wells that are screened in the uppermost aquifer. Monitoring wells MW-16-01 through MW-16-07 are located around the north, east, and south perimeter of the RRLF and provide data on both background and downgradient groundwater quality that has not been affected by the CCR unit (total of seven background/downgradient monitoring wells). The monitoring well locations are shown on Figure 2.

2.2 Semiannual Groundwater Monitoring

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

2.2.1 Data Summary

The first semiannual detection monitoring event for 2023 was performed April 24 and 25, 2023 by TRC personnel and samples were analyzed by Eurofins Environment Testing America (Eurofins) in accordance with the QAPP. Static water elevation data were collected at all seven monitoring well locations. Groundwater samples were collected from the seven detection monitoring wells for the Appendix III indicator parameters and field parameters. A summary of the groundwater data collected during the April 2023 event is provided on Table 1 (static groundwater elevation data), Table 2 (field data), and Table 3 (analytical results).

The second semiannual groundwater detection monitoring event for 2023 was performed from October 16 to 17, 2023 by TRC personnel and samples were analyzed by Eurofins in accordance with the QAPP. Static water elevation data were collected at all seven monitoring well locations. Groundwater samples were collected from the seven detection monitoring wells for the Appendix III indicator parameters and field parameters. A summary of the groundwater data collected during the October 2023 event is provided on Table 1 (static groundwater elevation data), Table 2 (field data), and Table 4 (analytical results). The laboratory analytical reports for each detection monitoring event are included in Appendix B.

2.2.2 Data Quality Review

Data from each round were evaluated for completeness, overall quality and usability, method-specified sample holding times, precision and accuracy, and potential sample contamination.

The data were found to be complete and usable for the purposes of the CCR monitoring program. Data quality reviews are summarized in Appendix C.

2.2.3 Groundwater Flow Rate and Direction

As presented in the GWMS Report, and mentioned above, given the horizontally expansive clay with substantial vertical thickness, the heterogeneity of the glacial deposits (with the top of the uppermost aquifer elevation across the RRLF CCR unit varying up to 100 feet vertically), the no-flow boundary to the west, and the lack of hydraulic interconnectedness of the uppermost aquifers encountered at the site in some areas, it is not appropriate to infer horizontal flow direction or gradients across the site. Groundwater elevations measured during the April 2023 sampling event are provided on Table 1 and are summarized in plan view on Figure 3. Groundwater elevations measured during the October 2023 sampling event are provided on Table 1 and are summarized in plan view on Figure 4.

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

3.0 Statistical Evaluation

3.1 Establishing Background Limits

As discussed in the Stats Plan, intrawell statistical methods for RRLF were selected based on the geology and hydrogeology at the Site (primarily the presence of clay/hydraulic barrier, the variability in the presence of the uppermost aquifer across the site, and the presence of a no flow boundary on the west side of the aquifer), in addition to other supporting lines of evidence that the aquifer is unaffected by the CCR unit (such as the consistency in concentrations of water quality data). An intrawell statistical approach requires that each downgradient well doubles as a background and compliance well, where data from each individual well during a detection monitoring event is compared to a statistical limit developed using the background dataset from that same well.

Per the Stats Plan, background limits were established for the Appendix III indicator parameters following the collection of at least eight background monitoring events using data collected from each of the seven established detection monitoring wells (MW-16-01 through MW-16-07). The initial statistical evaluation of the background data is presented in the 2017 Annual Report. The Appendix III background limits for each monitoring well will be used throughout the detection monitoring period to determine whether groundwater has been impacted from the RRLF CCR unit by comparing concentrations in the detection monitoring wells to their respective background limits for each Appendix III indicator parameter.

Consistent with the Stats Plan and the *USEPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (Unified Guidance, USEPA, 2009), prediction limits are periodically updated to reflect the additional data and additional temporal variability observed subsequent to the initial statistical limit calculation in 2018. The Appendix III prediction limits at the RRLF were updated per the Stats Plan and Unified Guidance in December 2021 to incorporate additional data collected since 2017 as presented in the December 15, 2021 Technical Memorandum, *Uppermost Useable Aquifer Prediction Limit Update – DTE Electric Company, Range Road Coal Combustion Residual Landfill* (included as Appendix D in the *2021 Annual Groundwater Monitoring Report – DTE Electric Company, Range Road Coal Combustion Residual Landfill,* TRC, January 2022).

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

For each semiannual monitoring event, the concentrations of the indicator parameters in each of the detection monitoring wells (MW-16-01 through MW-16-07) were compared to their respective statistical background limits.

The comparisons of the April 2023 monitoring event data to background limits are presented on Table 3. The statistical evaluation of the April 2023 Appendix III indicator parameters showed potential initial SSIs over background for:

- TDS at MW-16-01;
- pH at MW-16-03; and

- Sulfate at MW-16-05.

The boron, calcium, and sulfate concentration at MW-16-01 are from natural variability and are not from a release at the RRLF as presented in the August 2018, March 2023, and August 2020 ASDs. The calcium, sulfate, and TDS concentrations at MW-16-06 are from natural variability and are not from a release at the RRLF as presented in the still applicable August 2019, August 2018, and February 2022 ASDs, respectively. The 2018, 2019, 2020 and 2022 ASDs were prepared for the uppermost usable aquifer under the CCR Rule and included in the 2018, 2019 2020 and 2022 annual GWMRs, respectively. The March 2023 ASD is included in Appendix A of this report.

3.3 Verification Resampling for the First 2023 Semiannual Event

Verification resampling is performed per the Stats Plan and the Unified Guidance to achieve performance standards as specified by §257.93(g) in the CCR Rule. Per the Stats Plan, if there is an exceedance of a prediction limit for one or more of the parameters, the well(s) of concern will be resampled within 30 days of the completion of the initial statistical analysis. Only constituents that initially exceed their statistical limit (i.e., have no previously recorded SSIs) will be analyzed for verification purposes.

Verification resampling for the April 2023 event was conducted on June 14, 2023 by TRC personnel. Groundwater samples were collected for TDS at MW-16-01, and sulfate at MW-16-05 in accordance with the QAPP. In addition, field pH was measured at MW-16-03 in accordance with the QAPP. A summary of the field pH and analytical results collected during the June 2023 resampling event is provided on Table 3. The associated data quality review is included in Appendix C.

The verification results for TDS at MW-16-01, pH at MW-16-03, and sulfate at MW-16-05 are below their respective prediction limits, therefore the potential SSIs for TDS, pH, and sulfate are not confirmed and no SSIs will be recorded for the first semiannual 2023 sampling event. As such, detection monitoring was continued in accordance with §257.94 of the CCR Rule.

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

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

- TDS at MW-16-01 and MW-16-02; and
- Sulfate and Calcium at MW-16-05.

As detailed above in Section 3.2, the calcium, sulfate, and TDS concentrations at MW-16-06 have been previously demonstrated to be from natural variability and are not from the CCR unit as presented in the ASDs, which are still applicable to the Second 2023 Semiannual Event. Similarly, the boron, calcium, and sulfate exceedances at MW-16-01 have also been previously demonstrated to be from natural variability and are not from the CCR unit as presented in the

August 2018, August 2020, and March 2023 ASDs that still apply. The March 2023 ASD is included in Appendix A of this report.

3.5 Verification Resampling for the Second 2023 Semiannual Event

Verification resampling is performed per the Stats Plan and the Unified Guidance to achieve performance standards as specified by §257.93(g) in the CCR Rule. Per the Stats Plan, if there is an exceedance of a prediction limit for one or more of the parameters, the well(s) of concern will be resampled within 30 days of the completion of the initial statistical analysis. Only constituents that initially exceed their statistical limit (i.e., have no previously recorded SSIs) will be analyzed for verification purposes.

Verification resampling for the October 2023 event was conducted on December 7, 2023 and January 8, 2024 by TRC personnel. Groundwater samples were collected for TDS from MW-16-01 and MW-16-02, and for calcium and sulfate from MW-16-05, in accordance with the QAPP. A summary of the analytical results collected during the resampling event is provided on Table 4. The associated data quality review is included in Appendix C.

The verification results for TDS at MW-16-02 were below the prediction limit, therefore no SSI will be recorded for TDS at MW-16-02 for the second semiannual 2023 event. The verification results for TDS at MW-16-01, calcium at MW-16-05, and sulfate at MW-16-05 are above their respective prediction limits, consequently the initial potential SSIs from the October 2023 event are confirmed.

According to §257.94(e), in the event that the facility determines, pursuant to §257.93(h), that there is a SSI over background levels for one or more of the Appendix III constituents, the facility will, within 90 days of detecting a SSI, demonstrate that a source other than the CCR unit caused the SSI, or the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. If an ASD is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under §257.95. If an ASD is completed, a certification from a qualified professional engineer is required, and the CCR unit may continue with detection monitoring. The facility must also include the ASD in the annual groundwater monitoring and corrective action report required by §257.90(e), in addition to the certification by a qualified professional engineer.

DTE Electric is in the process of performing an ASD to further evaluate the TDS SSI at MW-16-01 as well as the calcium and sulfate SSIs at MW-16-05. With the presence of the vertically and horizontally extensive clay-rich confining till beneath the RRLF CCR unit, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from operations.

4.0 Conclusions and Recommendations

No initial SSIs over background limits were recorded for Appendix III constituents during the April 2023 monitoring event. SSIs over the background limits for TDS at MW-16-01 as well as calcium and sulfate at MW-16-05 were observed during the October 2023 monitoring event and are being further evaluated through the ASD process. As discussed above, and in the GWMS Report, with the presence of the vertically and horizontally extensive clay-rich confining till beneath the RRLF CCR unit, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from operations.

According to §257.94(e), in the event that the facility determines, pursuant to §257.93(h), that there is a SSI over background levels for one or more of the Appendix III constituents, the facility will, within 90 days of detecting an SSI, establish an assessment monitoring program <or> demonstrate that:

- A source other than the CCR unit caused the SSI, or
- The SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

The owner or operator must complete a written demonstration (i.e., Alternative Source Demonstration, ASD), of the above within 90 days of confirming the SSI. Based on the outcome of the ASD the following steps will be taken:

- If a successful ASD is completed, a certification from a qualified professional engineer is required, and the CCR unit may continue with detection monitoring.

If a successful ASD is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under §257.95. The facility must also include the ASD in the annual groundwater monitoring and corrective action report required by §257.90(e), in addition to the certification by a qualified professional engineer.

In response to the TDS, calcium, and sulfate SSIs over the background limit noted during the October 2023 event, DTE plans to prepare an ASD to evaluate whether a source other than the RRLF CCR unit caused the SSI.

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

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
Range Road Landfill
China Township, Michigan

CERTIFICATION

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

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

6.0 References

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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 – April and October 2023

Range Road Landfill – RCRA CCR Monitoring Program

China Township, Michigan

Well ID	MW-16-01		MW-16-02		MW-16-03		MW-16-04		MW-16-05		MW-16-06		MW-16-07	
Date Installed	1/13/2016		1/27/2016		2/1/2016		5/24/2016		5/13/2016		5/10/2016		5/13/2016	
TOC Elevation	595.35		598.44		597.69		596.87		601.97		600.68		589.34	
Geologic Unit of Screened interval	Sand with Silt		Silty Sand with Gravel		Silty Gravel with Sand		Silty Sand		Gravel with Sand		Sand		Sand	
Screened Interval Elevation	390.7 to 385.7		393.8 to 388.8		432.1 to 427.1		414.1 to 409.1		476.6 to 471.6		508.0 to 503.0		494.4 to 489.4	
Unit	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft
Measurement Date	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation
04/24/2023	17.72	577.63	20.56	577.88	19.86	577.83	19.18	577.69	27.45	574.52	23.57	577.11	15.53	573.81
10/16/2023	17.97	577.38	20.21	578.23	19.77	577.92	19.06	577.81	27.15	574.82	23.47	577.21	14.41	574.93

Notes:

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

ft BTOC - feet below top of casing.

Table 2
Summary of Field Data – April 2023 to January 2024
Range Road Landfill – RCRA CCR Monitoring Program
China Township, Michigan

Sample Location	Sample Date	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	pH (SU)	Specific Conductivity (umhos/cm)	Temperature (°C)	Turbidity (NTU)
MW-16-01	4/25/2023	1.43	-94.7	7.4	2,023	10.2	6.41
	6/14/2023(1)	0.11	-234.3	7.7	1,776	12.8	9.00
	10/16/2023	2.44	-13.9	7.2	1,593	10.7	1.67
	12/7/2023(2)	1.55	-53.3	7.3	1,654	9.9	3.27
MW-16-02	4/24/2023	1.31	-198.0	8.2	1,749	9.8	3.04
	10/16/2023	2.44	-104.2	8.0	1,488	10.4	1.42
	1/8/2024(3)	1.66	-139.9	8.0	1,581	9.5	1.71
MW-16-03	4/24/2023	1.40	-117.2	7.9	1,518	10.3	2.91
	10/16/2023	2.35	-161.3	8.0	1,304	11.0	0.94
MW-16-04	4/25/2023	1.47	-44.1	8.1	8,108	10.2	13.0
	10/17/2023	2.43	-155.2	8.2	6,274	11.5	16.7
MW-16-05	4/24/2023	1.31	-171.1	8.0	1,621	10.3	3.06
	6/14/2023(1)	0.10	-250.3	8.1	4,825	13.1	23.0
	10/17/2023	2.44	-81.3	8.0	1,334	11.0	0.10
	12/7/2023(2)	1.48	-54.0	8.0	1,387	10.1	1.56
MW-16-06	4/24/2023	1.29	-129.1	7.6	1,667	10.3	2.78
	10/17/2023	2.36	-126.2	7.6	1,546	11.1	4.15
MW-16-07	4/25/2023	1.53	-84.4	7.5	585	10.4	31.0
	10/17/2023	2.37	-104.1	7.8	645	11.2	73.3

Notes:
mg/L -Milligrams per Liter.
mV - Millivolts.
SU - Standard Units.
umhos/cm - Micromhos per centimeter.
°C - Degrees Celsius.
NTU - Nephelometric Turbidity Unit
(1) Results shown for verification sampling performed on 6/14/2023.
(2) Results shown for verification sampling performed on 12/7/2023.
(3) Results shown for verification sampling performed on 1/8/2024.

Table 3
Comparison of Detection Monitoring Parameter Results to Background Limits – April and June 2023
Range Road Landfill – RCRA CCR Monitoring Program
China Township, Michigan

Sample Location:		MW-16-01			MW-16-02		MW-16-03			MW-16-04		MW-16-05			MW-16-06		MW-16-07	
Sample Date:		4/25/2023	6/14/2023[1]	PL	4/24/2023	PL	4/24/2023	6/14/2023[1]	PL	4/25/2023	PL	4/24/2023	6/14/2023[1]	PL	4/24/2023	PL	4/25/2023	PL
Constituent	Unit	Data			Data		Data			Data		Data			Data		Data	
Appendix III																		
Boron	ug/L	**700**[2]	--	620	1,000	1,200	1,100	--	1,300	1,100	1,200	1,200	--	1,400	1,100	1,200	380	980
Calcium	ug/L	**100,000**[3]	--	87,000	21,000	24,000	18,000	--	28,000	61,000	68,000	19,000	--	19,000	**61,000**[4]	34,000	52,000	59,000
Chloride	mg/L	530	--	770	660	720	530	--	580	3,100	3,600	560	--	630	480	580	99	380
Fluoride	mg/L	0.77	--	0.9	2.1	2.1	2.2	--	2.2	1.5	1.7	2.0	--	2.0	1.4	1.5	0.94	1.3
pH, Field	su	7.4	--	7.1 - 8.2	8.2	8.0 - 9.0	**7.9**	8.1	8.0 - 8.8	8.1	7.6 - 8.6	8.0	--	8.0 - 8.9	7.6	7.6 - 8.3	7.5	7.3 - 8.4
Sulfate	mg/L	**320**[5]	--	45	< 1.0	10	< 1.0	--	10	< 5.0	50	**23**	4.2	10	**280**[2]	54	33	74
Total Dissolved Solids	mg/L	**1,400**	920	1,300	1,100	1,300	980	--	1,100	5,200	5,300	1,000	--	1,200	**1,300**[6]	1,100	370	760

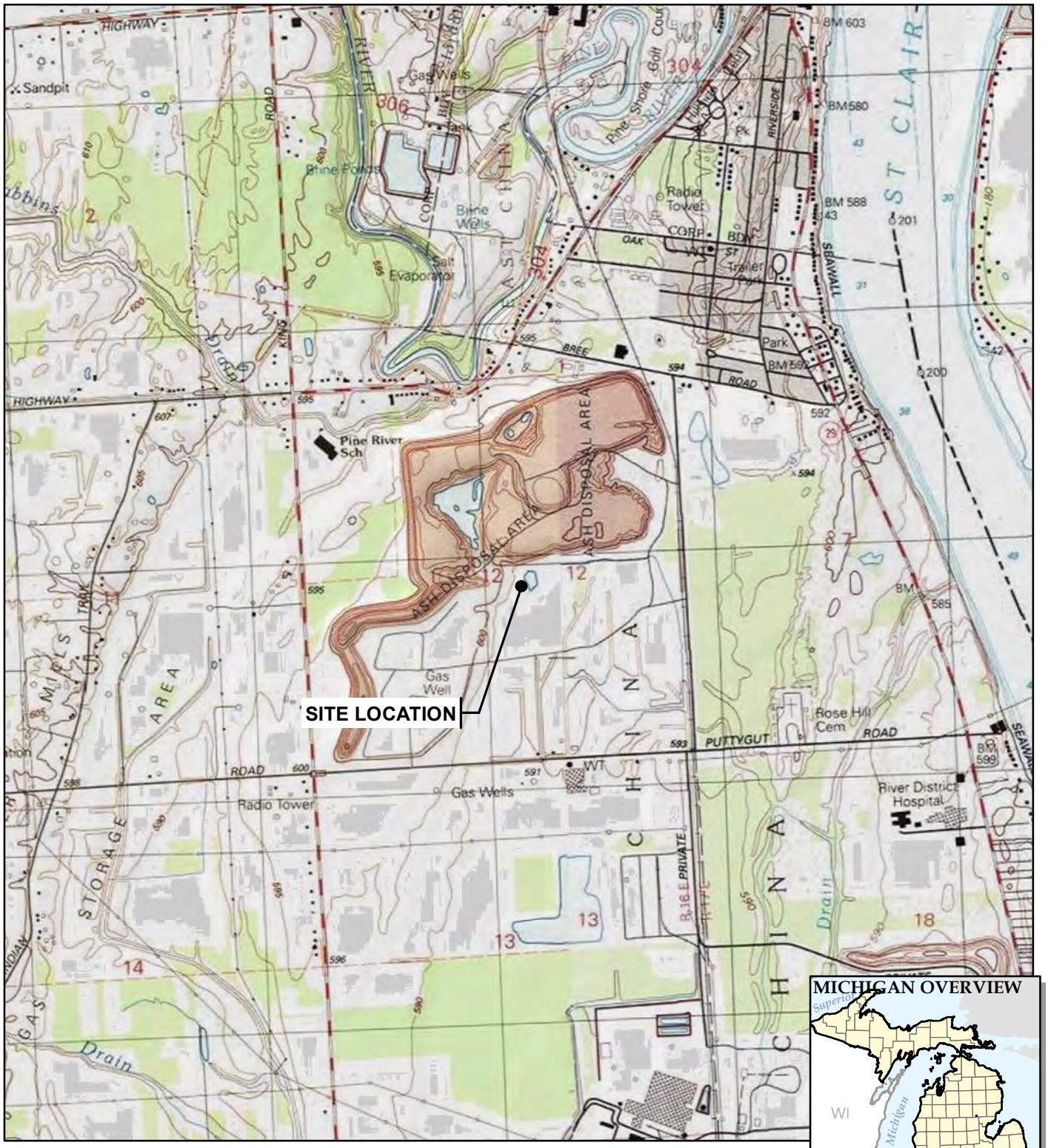
Notes:
ug/L - micrograms per liter.
mg/L - milligrams per liter.
SU - standard units; pH is a field parameter.
All metals were analyzed as total unless otherwise specified.
Bold font indicates an exceedance of the Prediction Limit (PL).
RESULT Shading and bold font indicates a confirmed exceedance of the Prediction Limit (PL).
(1) - Results shown for verification sampling performed on 6/14/2023.
(2) - Exceedance was determined to be from an alternate source in the First 2018 Semiannual alternative source demonstration dated 8/1/2018.
(3) - Exceedance was determined to be from an alternate source in the Second 2022 Semiannual alternative source demonstration dated 3/1/2023.
(4) - Exceedance was determined to be from an alternate source in the First 2019 Semiannual alternative source demonstration dated 8/8/2019.
(5) - Exceedance was determined to be from an alternate source in the First 2020 Semiannual alternative source demonstration dated 8/12/2020.
(6) - Exceedance was determined to be from an alternate source in the Second 2021 Semiannual alternative source demonstration dated 2/24/2022.

Table 4
Comparison of Detection Monitoring Parameter Results to Background Limits – October 2023 to January 2024
Range Road Landfill – RCRA CCR Monitoring Program
China Township, Michigan

Sample Location:		MW-16-01			MW-16-02			MW-16-03		MW-16-04		MW-16-05			MW-16-06		MW-16-07	
Sample Date:		10/16/2023	12/7/2023[1]	PL	10/16/2023	1/8/2024[2]	PL	10/16/2023	PL	10/17/2023	PL	10/17/2023	12/7/2023[1]	PL	10/17/2023	PL	10/17/2023	PL
Constituent	Unit	Data			Data			Data		Data		Data			Data		Data	
Appendix III																		
Boron	ug/L	**710**[3]	--	620	1,000	--	1,200	1,100	1,300	1,000	1,200	1,200	--	1,400	1,000	1,200	630	980
Calcium	ug/L	**100,000**[4]	--	87,000	21,000	--	24,000	18,000	28,000	63,000	68,000	**21,000**	**20,000**	19,000	**78,000**[5]	34,000	51,000	59,000
Chloride	mg/L	590	--	770	670	--	720	530	580	3,300	3,600	520	--	630	420	580	200	380
Fluoride	mg/L	0.78	--	0.9	2.1	--	2.1	2.2	2.2	1.5	1.7	1.8	--	2.0	1.2	1.5	0.99	1.3
pH, Field	su	7.2	--	7.1 - 8.2	8.0	--	8.0 - 9.0	8.0	8.0 - 8.8	8.2	7.6 - 8.6	8.0	--	8.0 - 8.9	7.6	7.6 - 8.3	7.8	7.3 - 8.4
Sulfate	mg/L	**340**[6]	--	45	< 1	--	10	< 1	10	< 5	50	**30**	**32**	**10**	**390**[7]	54	15	74
Total Dissolved Solids	mg/L	**1,400**	**1,400**	1,300	**1,400**	1,100	1,300	970	1,100	5,000	5,300	1,100	--	1,200	**1,300**[8]	1,100	520	760

Notes:
ug/L - micrograms per liter.
mg/L - milligrams per liter.
SU - standard units; pH is a field parameter.
All metals were analyzed as total unless otherwise specified.
Bold font indicates an exceedance of the Prediction Limit (PL).
RESULT Shading and bold font indicates a confirmed exceedance of the Prediction Limit (PL).
(1) - Results Shown for verification sampling performed on 12/7/2023.
(2) - Results Shown for verification sampling performed on 1/8/2024.
(3) - Exceedance was determined to be from an alternate source in the First 2018 Semiannual Alternate Source Demonstration dated 8/1/2018.
(4) - Exceedance was determined to be from an alternate source in the Second 2022 Semiannual Aleternate Source Demonstration dated 3/1/2023.
(5) - Exceedance was determined to be from an alternate source in the First 2019 Semiannual Alternate Source Demonstration dated 8/8/2019.
(6) - Exceedance was determined to be from an alternate source in the First 2020 Semiannual Alternate Source Demonstration dated 8/12/2020.
(7) - Exceedance was determined to be from an alternate source in the First 2018 Semiannual Alternate Source Demonstration dated 8/1/2018.
(8) - Exceedance was determined to be from an alternate source in the Second 2021 Semiannual Alternate Source Demonstration dated 2/24/2022.

Figures



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

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

0 2,000 4,000
FEET

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TRC - GIS

PROJECT:

DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
3600 RANGE ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:

SITE LOCATION MAP

DRAWN BY:	A. FOJTIK
CHECKED BY:	J. KRENZ
APPROVED BY:	V. BUENING
DATE:	JANUARY 2024
PROJ. NO.:	518728.0000
FILE:	518728-0000-001.mxd

FIGURE 1

E:\DTE\CCR_Sites\2017_265996\518728-0000-001.mxd -- Saved By: AFOJTIK on 12/1/2023, 15:46:09 PM

LEGEND

- MONITORING WELL
- SOIL BORING
- APPROXIMATE ANTICIPATED MAXIMUM LIMIT OF ASH FILL
- OIL/GAS WELL LOCATION

NOTES

1. BASE MAP IMAGERY FROM ESRI WORLD IMAGERY,2022.
2. WELL LOCATIONS SURVEYED IN MARCH AND MAY 2016 BY BMJ ENGINEERS & SURVEYORS, INC.
3. OIL AND GAS WELL LOCATIONS FROM MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, GEOWEBFACE.

N

0 600 1,200 Feet

1 " = 600 '

1:7,200

PROJECT:

DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
3600 RANGE ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:

MONITORING NETWORK AND SITE PLAN

DRAWN BY:	A. FOJTIK	PROJ NO.:	518728.0000
CHECKED BY:	J. KRENZ		
APPROVED BY:	V. BUENING		**FIGURE 2**
DATE:	JANUARY 2024		

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FILE NO.: 518728-0000-002.mxd

Plot Date: 12/1/2023, 15:37:46 PM by AFOJTIK -- LAYOUT: ANSI B(11"x17")
Path: E:\DTE\CCR_Sites\2017_265996\518728-0000-002.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0
TRC - GIS

TRC - GIS

Monitoring Well Screen Information			
Monitoring Well ID	Screen Interval Lithology	Screen Interval Depth (ft BGS)	Screen Interval Elevation (ft NAVD 88)
MW-16-01	Sand with Silt	202.0 - 207.0	390.7 - 385.7
MW-16-02	Silty Sand with Gravel, and Silty Sand	201.5 - 206.5	393.8 - 388.8
MW-16-03	Silty Gravel with Sand	163.0 - 168.0	432.1 - 427.1
MW-16-04	Silty Sand	180.0 - 185.0	414.1 - 409.1
MW-16-05	Gravel with Sand	123.0 - 128.0	476.6 - 471.6
MW-16-06	Sand	90.0 - 95.0	508.0 - 503.0
MW-16-07	Sand	95.0 - 100.0	494.4 - 489.4

MW-16-04
577.69 (04/24/2023)

MW-16-06
577.11 (04/24/2023)

Bree Rd

SB-16-02

MW-16-03
577.83 (04/24/2023)

RANGE ROAD
LANDFILL SITE

MW-16-02
577.88 (04/24/2023)

NO AQUIFER

AQUIFER

SB-16-01

MW-16-01
577.63 (04/24/2023)

MW-16-05
574.52 (04/24/2023)

MW-16-07
573.81 (04/24/2023)

LEGEND

- MONITORING WELL
- SOIL BORING
- APPROXIMATE ANTICIPATED MAXIMUM LIMIT OF ASH FILL
- APPROXIMATE AQUIFER BOUNDARY

MW ID
GROUNDWATER ELEVATION (DATE)

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

NOTES

1. BASE MAP IMAGERY FROM ESRI WORLD IMAGERY, 2022.
2. WELL LOCATIONS SURVEYED IN MARCH AND MAY 2016 BY BMJ ENGINEERS & SURVEYORS, INC.

0 600 1,200
Feet

1 " = 600 '
1:7,200

PROJECT:
DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
3600 RANGE ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
GROUNDWATER
POTENTIOMETRIC ELEVATION SUMMARY
APRIL 2023

DRAWN BY:	A. FOJTIK	PROJ NO.:	518728.0000.0000
CHECKED BY:	J. KRENZ		
APPROVED BY:	V. BUENING		**FIGURE 3**
DATE:	JANUARY 2024		

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FILE NO.: 518728-0000-004.mxd

Plot Date: 12/1/2023, 14:58:45 PM by AFOJTIK -- LAYOUT: ANSI B(11"x17")
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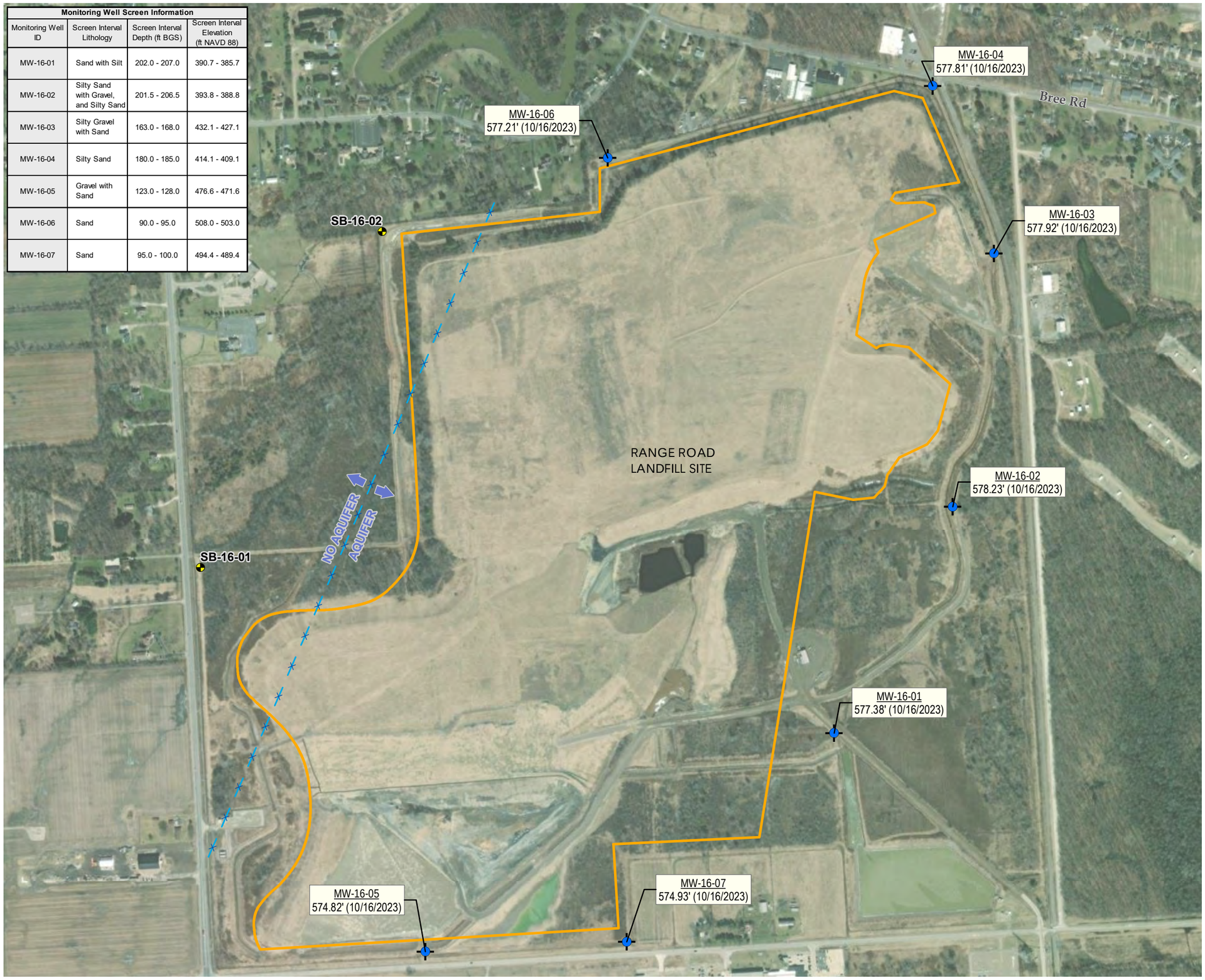
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

Monitoring Well Screen Information			
Monitoring Well ID	Screen Interval Lithology	Screen Interval Depth (ft BGS)	Screen Interval Elevation (ft NAVD 88)
MW-16-01	Sand with Silt	202.0 - 207.0	390.7 - 385.7
MW-16-02	Silty Sand with Gravel, and Silty Sand	201.5 - 206.5	393.8 - 388.8
MW-16-03	Silty Gravel with Sand	163.0 - 168.0	432.1 - 427.1
MW-16-04	Silty Sand	180.0 - 185.0	414.1 - 409.1
MW-16-05	Gravel with Sand	123.0 - 128.0	476.6 - 471.6
MW-16-06	Sand	90.0 - 95.0	508.0 - 503.0
MW-16-07	Sand	95.0 - 100.0	494.4 - 489.4



LEGEND

- MONITORING WELL
- SOIL BORING
- APPROXIMATE ANTICIPATED MAXIMUM LIMIT OF ASH FILL
- APPROXIMATE AQUIFER BOUNDARY

MW ID
GROUNDWATER ELEVATION (DATE)

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

NOTES

1. BASE MAP IMAGERY FROM ESRI WORLD IMAGERY, 2022.
2. WELL LOCATIONS SURVEYED IN MARCH AND MAY 2016 BY BMJ ENGINEERS & SURVEYORS, INC.

N

0 600 1,200 Feet

1 " = 600 '
1:7,200

PROJECT:
DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
3600 RANGE ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
GROUNDWATER POTENTIOMETRIC ELEVATION SUMMARY OCTOBER 2023

DRAWN BY:	A. FOJTIK	PROJ NO.:	518728.0000.0000
CHECKED BY:	J. KRENZ		
APPROVED BY:	V. BUENING		**FIGURE 4**
DATE:	JANUARY 2024		

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FILE NO.: 518728-0000-005.mxd

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Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0
Plot Date: 12/1/2023, 15:32:54 PM by AFOJTIK -- LAYOUT: ANSI B(11"x17")
Path: E:\DTE\CCR_Sites\2017_265996\518728-0000-005.mxd

Appendix A
Alternate Source Demonstration, Fourth Quarter 2022 Groundwater Sampling Event

1540 Eisenhower Pl.
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March 1, 2023

Mary R. Carnagie
Solid Waste Geologist
Materials Management Division
Michigan Department of Environment, Great Lakes, and Energy (EGLE)
27700 Donald Court
Warren, MI 48092-2793

Subject: Alternate Source Demonstration: Fourth Quarter 2022 Semiannual Detection Monitoring Sampling Event
Range Road Landfill Coal Combustion Residual Unit
3600 Range Road, China Township, Michigan

Dear Ms. Carnagie:

TRC was retained by DTE Electric Company (DTE Electric) to conduct routine groundwater monitoring activities for the uppermost usable aquifer at the Range Road Landfill (RRLF) coal combustion residual (CCR) unit, located in St Clair County, Michigan. Routine groundwater monitoring at the RRLF CCR unit is conducted in accordance with the Michigan Department of Environment, Great Lakes, and Energy (EGLE)-approved *Hydrogeologic Monitoring Plan for the DTE Electric Company Range Road Ash Disposal Facility, China Township, St. Clair County, Michigan* (2020 HMP) (TRC, November 2019; Revised May 2020) and the United States Environmental Protection Agency (USEPA) final rule for the regulation and management of CCR under the Resource Conservation and Recovery Act (RCRA) (the CCR Rule), as amended (USEPA, April 2015).

As discussed in the *Fourth Quarter 2022 Hydrogeological Monitoring and Performance Monitoring Report* (Fourth Quarter 2022 Report) (TRC, January 2023), the statistical evaluation of the October 2022 detection monitoring indicator parameters showed potential statistically significant increases (SSIs) over the prediction limit (PL) for calcium at MW-16-01 (96,000 ug/L with a PL of 87,000 ug/L) and MW-16-04 (75,000 ug/L with a PL of 68,000 ug/L), and fluoride at MW-16-07 (1.4 mg/L with a PL of 1.3 mg/L). Verification resampling for the October 2022 event was conducted on November 30 and December 1, 2022 by TRC personnel. The verification results for fluoride at MW-16-07 (1.2 mg/L) were below the PL, and no SSI was confirmed. The verification results for calcium at MW-16-01 (96,000 ug/L) and MW-16-04 (75,000 ug/L) were above their prediction limits (87,000 ug/L and 68,000 ug/L, respectively), confirming the initial potential SSIs from the October 2022 sampling event (Table 1).

In accordance with §257.94(e)(2) and the 2020 HMP, DTE Electric may demonstrate that a source other than the CCR unit caused the SSI or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. This Alternate Source Demonstration (ASD) has been prepared to address the SSI identified in the October 2022 detection monitoring event and demonstrates that the calcium SSI is not due to a release of CCR leachate into the uppermost aquifer.

Background

The RRLF is located in Section 12, Township 4 North, Range 16 East, 3600 Range Road, China Township in St. Clair County, Michigan. The site location is shown in Figure 1. The property has been used continuously as a coal ash landfill since Detroit Edison Company (now DTE Electric) began coal ash landfilling operations in the 1950s. The property consists of approximately 514 acres of which approximately 402 acres are designated for CCR landfill development; approximately half of the 402 acres is currently occupied with CCR.

The RRLF CCR unit is immediately underlain by 86 to 188 feet of laterally-extensive, low hydraulic conductivity silty clay-rich deposits. A no flow boundary is formed across the western portion of the RRLF by clay-rich till which is present continuously to the top of bedrock in this area. Beneath the clay rich aquitard, a sand/gravel unit is encountered, which contains the uppermost aquifer present beneath the RRLF. This uppermost usable aquifer is encountered at different elevations beneath the RRLF between 86 and 196 feet below ground surface (ft bgs). As a result of site specific geologic and hydrogeologic conditions, downward migration of CCR leachate is not expected, and it is not appropriate to infer horizontal flow directions across the site. Please refer to the *Uppermost Usable Aquifer Groundwater Monitoring System Summary Report – DTE Electric Company Range Road Coal Combustion Residual Landfill, 3600 Range Road, China Township, Michigan* (October 2017, Revised April 2020a) (Groundwater Monitoring System Summary Report) (Appendix A of the 2020 HMP) for further details regarding site-specific hydrogeology.

The uppermost usable aquifer monitoring well network for the RRLF currently consists of seven monitoring wells that are screened in the uppermost usable aquifer and are all considered to be downgradient monitoring wells. The monitoring well locations are shown in Figure 2. The Groundwater Monitoring System Summary Report details the groundwater monitoring system.

Alternate Source Demonstration

As discussed above, verification resampling was performed as recommended per the Stats Plan and the Unified Guidance to achieve performance standards as specified by §257.93(g) in the CCR Rule and the 2020 HMP. Per the Stats Plan, if there is an exceedance of a prediction limit for one or more of the parameters, the well(s) of concern will be resampled within 30 days of the completion of the initial statistical analysis. Only constituents that initially exceeded their statistical limit (i.e., have no previously recorded SSIs) were analyzed for verification purposes. As such, verification resampling was conducted from November 30, 2022 to December 1, 2022 by TRC personnel for calcium at monitoring wells MW-16-01 and MW-16-04 as well as for fluoride at MW-16-07. Groundwater samples were collected in accordance with the *CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company Range Road Coal Combustion Residual Landfill, 3600 Range Road, China Township, Michigan* (July 2016, Revised March and August 2017) and the 2020 HMP. A summary of the groundwater data collected during the verification resampling event is provided on Table 1.

The verification resampling confirmed the calcium exceedances at MW-16-01 (96,000 ug/L with a PL of 87,000 ug/L) and MW-16-04 (75,000 ug/L with at PL of 68,000 ug/L). The verification result for fluoride at MW-16-07 (1.2 mg/L) was below the PL (1.3 mg/L) and therefore no SSI was confirmed. The following discussion presents the ASD for the confirmed PL exceedances for calcium at MW-16-01 and MW-16-04.

Calcium at MW-16-01 and MW-16-04: The SSIs of calcium at MW-16-01 and MW-16-04, shown graphically as data points greater than the prediction limit in Figures 3 and 4, are the result of natural variability in groundwater quality at the site and not the result of a release from the RRLF CCR unit. Multiple lines of evidence are provided in support of this conclusion and are as follows:

- **Time of travel analysis** – The clay formation immediately beneath the RRLF CCR unit provides a natural geologic barrier to migration of CCR constituents to the underlying aquifer. The vertical extent of the clay layer beneath the CCR unit is shown in Figures 5 through 7 as cross-sections. Figure 4 shows the cross-section locations in plan view. Conservatively calculating a time of travel for liquid from the base of the RRLF through a minimum of 86 feet of clay to the underlying upper aquifer yields over 1,300 years of travel time (TRC, October 2017; Revised April 2020a). The RRLF began accepting coal ash in approximately 1950, therefore, based on this analysis, there is no potential for indicator parameters to have migrated to the uppermost usable aquifer.
- **Insufficient background sampling timeline to account for long-term trends** – Temporal variability in calcium concentrations observed in the groundwater at RRLF during the background sampling events provides evidence of the heterogeneity of this constituent in groundwater (Figure 3). The relatively short duration of the background sampling events limits the ability of the statistical analysis to capture the natural long-term temporal trends in the uppermost aquifer groundwater quality at the RRLF. Calcium concentrations within the uppermost aquifer groundwater during the second semiannual 2022 sampling event ranged from 19,000 ug/L (MW-16-05) to 96,000 ug/L(MW-16-01 verification sample), indicating a wide range of calcium concentrations across the CCR unit. The concentration of calcium at MW-16-04 is well within the range of calcium values observed in the uppermost aquifer across the CCR unit, further demonstrating that the concentrations at MW-16-04 are reasonable for naturally occurring concentrations in the uppermost aquifer.
- **Natural Concentrations of Calcium in Groundwater** – A study was performed by the USGS on groundwater quality in Michigan aquifers and summarized in *Michigan Ground-Water Quality (USGS, 1986)*. The analysis of 113 samples statewide concluded that 90 percent of the samples had dissolved calcium concentrations of 97,000 ug/L or less throughout various aquifers in Michigan. The study also found that saline water was found at varying depths from near surface to around 200 feet below ground surface in southeast Michigan. According to *Gazetteer of Hydrologic Data for the Belle River Basin, Southeastern Michigan* (Knutilla, 1969), water from the glacial deposits in the Belle River Basin are of the sodium bicarbonate type and that water hardness ranges from 68.4 to 342.0 parts per million calcium carbonate. Water from bedrock wells in the area contains large amounts of calcium, bicarbonate, sulfate, and sodium chloride. Knutilla also indicates that in general, mineralization of the water increases with depth, whether in the glacial deposits or bedrock. MW-16-01 is screened at a depth of 202 to 207 feet below ground surface (ft bgs) and MW-16-04 is screened from 180 to 185 ft bgs. The calcium concentrations observed in groundwater at the RRLF are within the range of natural concentrations observed in the studies mentioned above, indicating site concentrations are within natural concentrations as

shown in Table 1[1] and in Box and Whisker Plots for data collected since the beginning of monitoring for MW-16-01 and MW-16-04 in Appendix B).

- **Spatial variability in groundwater quality** – After 8 background sampling events and 7 detection monitoring sampling events including verification sampling[1], the prediction limits calculated for each of the 7 monitoring wells range from 19,000 micrograms per liter (ug/L) to 87,000 ug/L. This shows the range of variability in calcium concentrations in groundwater across the site and supports regional variability as a cause for the calcium SSIs at MW-16-01 and MW-16-04.
- **Lack of similar increase in other indicator parameters** – The lack of SSIs for any other parameters within the same monitoring well and across the other wells within the monitoring well network during this event also supports a source other than CCR for the observed calcium SSIs at MW-16-01 and MW-16-04.

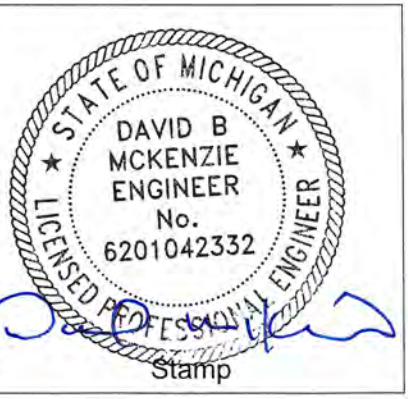
Conclusions and Recommendations

The information provided in this report serves as the ASD for the DTE Electric RRLF; this ASD was prepared in accordance with 40 CFR 257.94(e)(2) of the CCR Rule and the 2020 HMP and demonstrates that the calcium SSIs determined based on the October 2022 detection monitoring event are due to the natural variability of background groundwater quality within the uppermost aquifer groundwater. Therefore, based on the information provided in this ASD, DTE Electric will continue detection monitoring as per 40 CFR 257.94 at the RRLF CCR unit.

Signatures and Certifications

Engineer Certification Statement

I hereby certify that the alternative source demonstration presented within this document for the RRLF CCR unit has been prepared to meet the requirements of Title 40 CFR §257.94(e)(2) of the Federal CCR Rule and the May 2020 *Hydrogeological Monitoring Plan for the DTE Electric Company Range Road Ash Disposal Facility* (2020 HMP). 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 §257.94(e)(2) and the 2020 HMP.

Name: David B. McKenzie, P.E.	Expiration Date: December 17, 2023	
Company: TRC Engineers Michigan, Inc.	Date: March 1 2023	Stamp

[1] Verification sampling results used to confirm or deny potential statistically significant increases (SSIs) have been averaged with the compliance sample results for statistical limit calculation.

In addition, the signatures below certifies that this letter report was prepared under the direction of a qualified groundwater scientist in accordance with the EGLE-approved HMP and the Stats Plan. A copy of this report will be placed in the facility file.

Sincerely,

TRC

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

Sarah B. Holmstrom, P.G
Senior Hydrogeologist

Attachments

Table 1	Comparison of Appendix III and Part 115 Groundwater Parameter Results to Background Limits – Fourth Quarter 2022
Figure 1	Site Location Map
Figure 2	Uppermost Usable Aquifer Monitoring Well Network and Site Plan
Figure 3	Calcium at MW-16-01
Figure 4	Calcium at MW-16-04
Figure 5	Cross Section Locator Map
Figure 6	Generalized Geologic Cross Section A-A’
Figure 7	Generalized Geologic Cross Section B-B’
Figure 8	Generalized Geologic Cross Section C-C’
Appendix A	References
Appendix B	RRLF Calcium Box and Whisker Plots

cc: Christopher P. Scieszka, DTE Electric Company

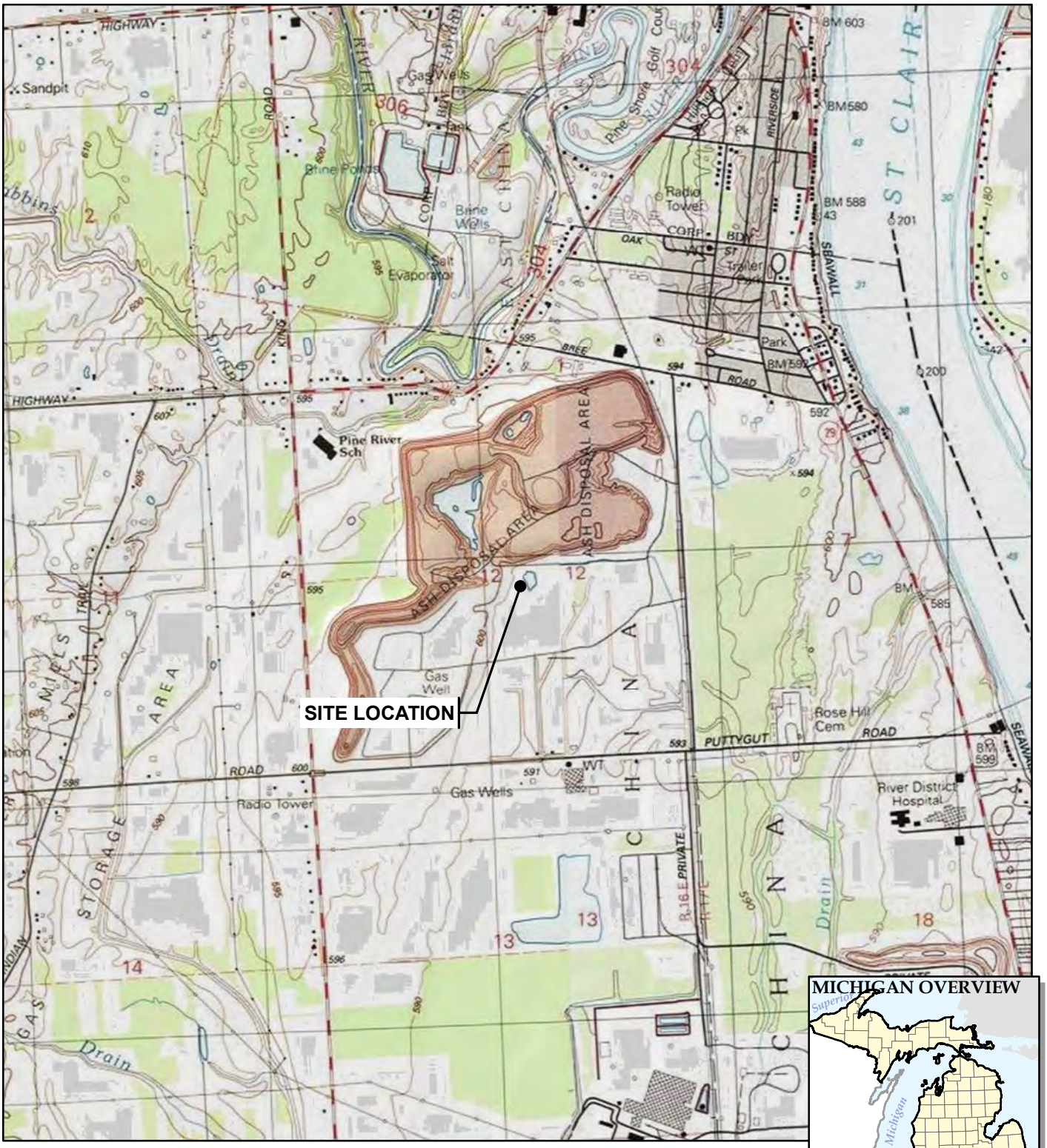
Table

Table 1
Comparison of Appendix III and Part 115 Parameter Results to Background Limits – Fourth Quarter 2022
Uppermost Useable Aquifer
DTE Electric Company - Range Road Landfill

Sample Location:		MW-16-01			MW-16-02		MW-16-03		MW-16-04			MW-16-05		MW-16-06		MW-16-07		
Sample Date:		10/17/2022	12/1/2022[1]	PL	10/17/2022	PL	10/17/2022	PL	10/27/2022	11/30/2022[2]	PL	10/17/2022	PL	10/17/2022	PL	10/27/2022	11/30/2022	PL
Constituent	Unit	Data			Data		Data		Data			Data		Data		Data		
Appendix III																		
Boron	ug/L	580	--	620	1,100	1,200	1,200	1,300	1,100	--	1,200	1,300	1,400	1,100	1,200	910	--	980
Calcium	ug/L	**90,000**	**96,000**	87,000	24,000	24,000	21,000	28,000	**69,000**	**75,000**	68,000	19,000	19,000	**76,000[3]**	34,000	49,000	--	59,000
Chloride	mg/L	670	--	770	660	720	540	580	3,500	--	3,600	560	630	460	580	380	--	380
Fluoride	mg/L	0.77	--	0.9	1.9	2.1	2.1	2.2	1.6	--	1.7	1.8	2.0	1.2	1.5	**1.4**	1.2	1.3
pH, Field	su	7.4	--	7.1 - 8.2	8.3	8.0 - 9.0	8.0	8.0 - 8.8	8.0	--	7.6 - 8.6	8.2	8.0 - 8.9	7.7	7.6 - 8.3	7.6	--	7.3 - 8.4
Sulfate	mg/L	**67[4]**	**--**	45	< 1	10	< 1	10	< 5	--	50	2.4	10	**330[5]**	54	1.3	--	74
Total Dissolved Solids	mg/L	1,200	--	1,300	1,100	1,300	970	1,100	4,700	--	5,300	920	1,200	**1,200[6]**	1,100	670	--	760
Part 115 Parameters																		
Iron	ug/L	1,500	--	n<8	780	n<8	530	n<8	1,300	--	n<8	200	n<8	640	n<8	5,900	--	n<8

Notes:
ug/L - micrograms per liter.
mg/L - milligrams per liter.
SU - standard units; pH is a field parameter.
All metals were analyzed as total unless otherwise specified.
Bold font indicates an exceedance of the Prediction Limit (PL).
RESULT Shading and bold font indicates a confirmed exceedance of the Prediction Limit (PL).
(1) - Results shown for verification sampling performed on 12/1/2022.
(2) - Results shown for verification sampling performed on 11/30/2022.
(3) - Exceedance was determined to be from an alternate source in the First 2019 Semiannual alternative source demonstration dated 8/8/2019.
(4) - Exceedance was determined to be from an alternate source in the First 2020 Semiannual alternative source demonstration dated 8/12/2020.
(5) - Exceedance was determined to be from an alternate source in the First 2018 Semiannual alternative source demonstration dated 8/1/2018.
(6) - Exceedance was determined to be from an alternate source in the Second 2021 Semiannual alternative source demonstration dated 2/24/2022.

Figures



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

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

0 2,000 4,000
FEET

TRC

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

PROJECT:

DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
3600 RANGE ROAD
CHINA TOWNSHIP, MICHIGAN

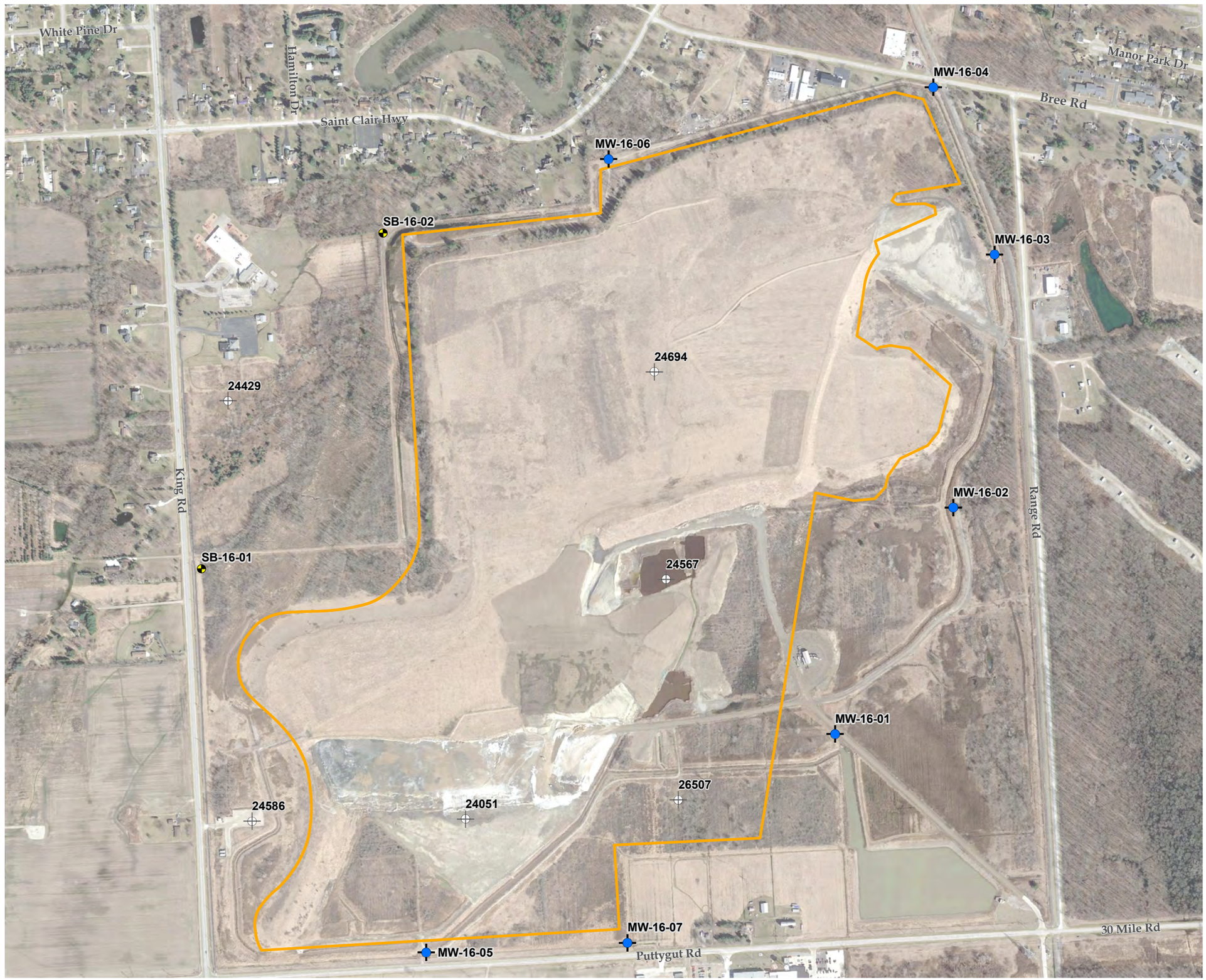
TITLE:

SITE LOCATION MAP

DRAWN BY:	A. FOJTIK
CHECKED BY:	J. KRENZ
APPROVED BY:	V. BUENING
DATE:	JANUARY 2023
PROJ. NO.:	413591.0000
FILE:	413591-0000-001SLM.mxd

FIGURE 1

S:\1-PROJECTS\DTE_Energy\320511_RiverRouge\370029-0000-001SLM.mxd -- Saved By: SMAJOR on 1/27/2021, 10:23:11 AM



LEGEND

- MONITORING WELL
- SOIL BORING
- APPROXIMATE ANTICIPATED MAXIMUM LIMIT OF ASH FILL
- OIL/GAS WELL LOCATION

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO,2019.
2. WELL LOCATIONS SURVEYED IN MARCH AND MAY 2016 BY BMJ ENGINEERS & SURVEYORS, INC.
3. OIL AND GAS WELL LOCATIONS FROM MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, GEOWEBFACE.

N

0 600 1,200 Feet

1 " = 600 '

1:7,200

PROJECT:

DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
3600 RANGE ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:

MONITORING NETWORK AND SITE PLAN

DRAWN BY:	A. FOJTIK	PROJ NO.:	413591.0000
CHECKED BY:	J. KRENZ		
APPROVED BY:	V. BUENING		**FIGURE 2**
DATE:	JANUARY 2023		

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FILE NO.: 413591-0000-002.mxd

Plot Date: 1/27/2021, 10:34:49 AM by SMAJOR -- LAYOUT: ANSI B (11"x17")
Path: E:\DTE\CCR_Sites\2017_265996\370029-0000-002.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

TRC - GIS

Figure 3
Calcium (mg/L), MW-16-01

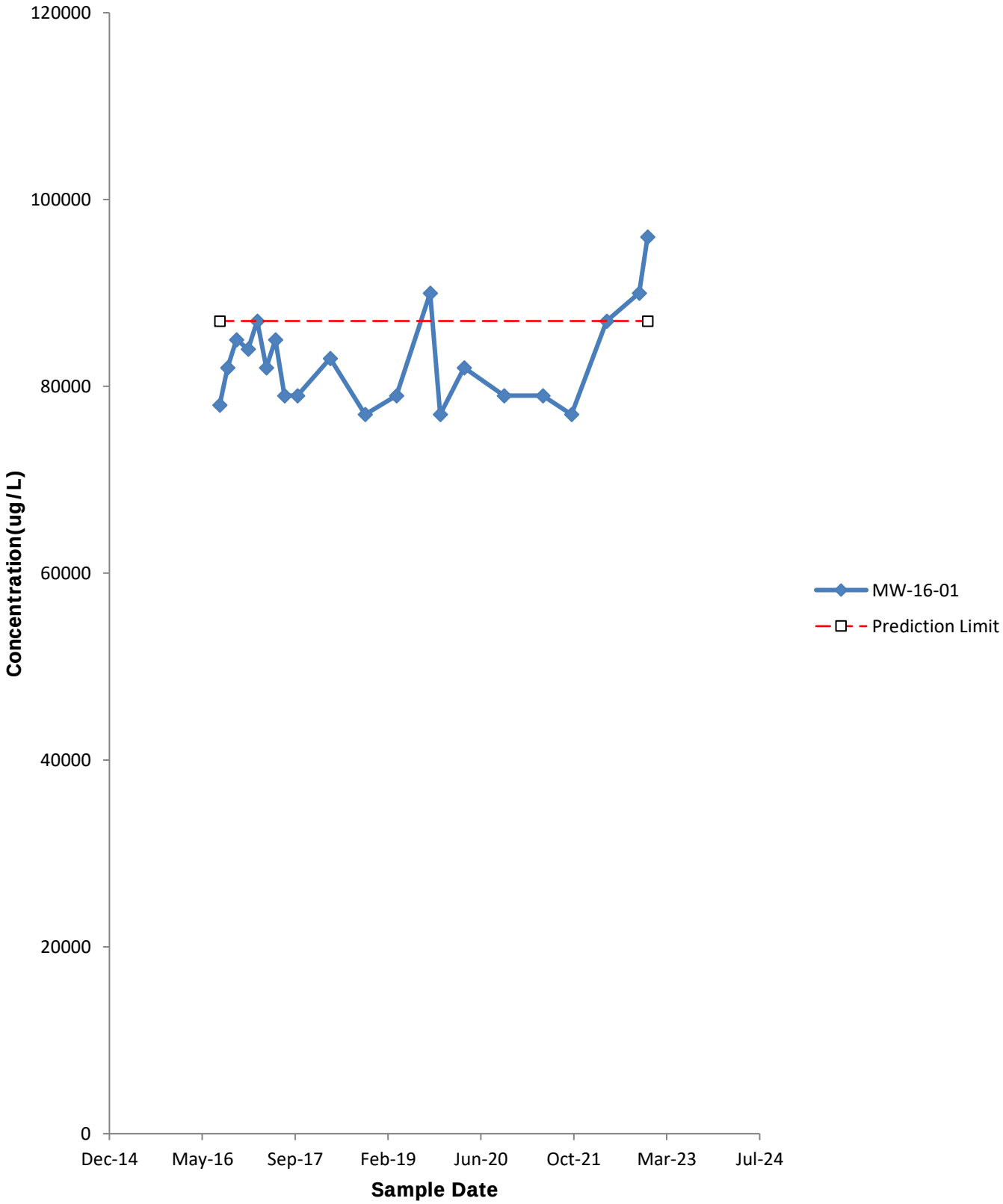
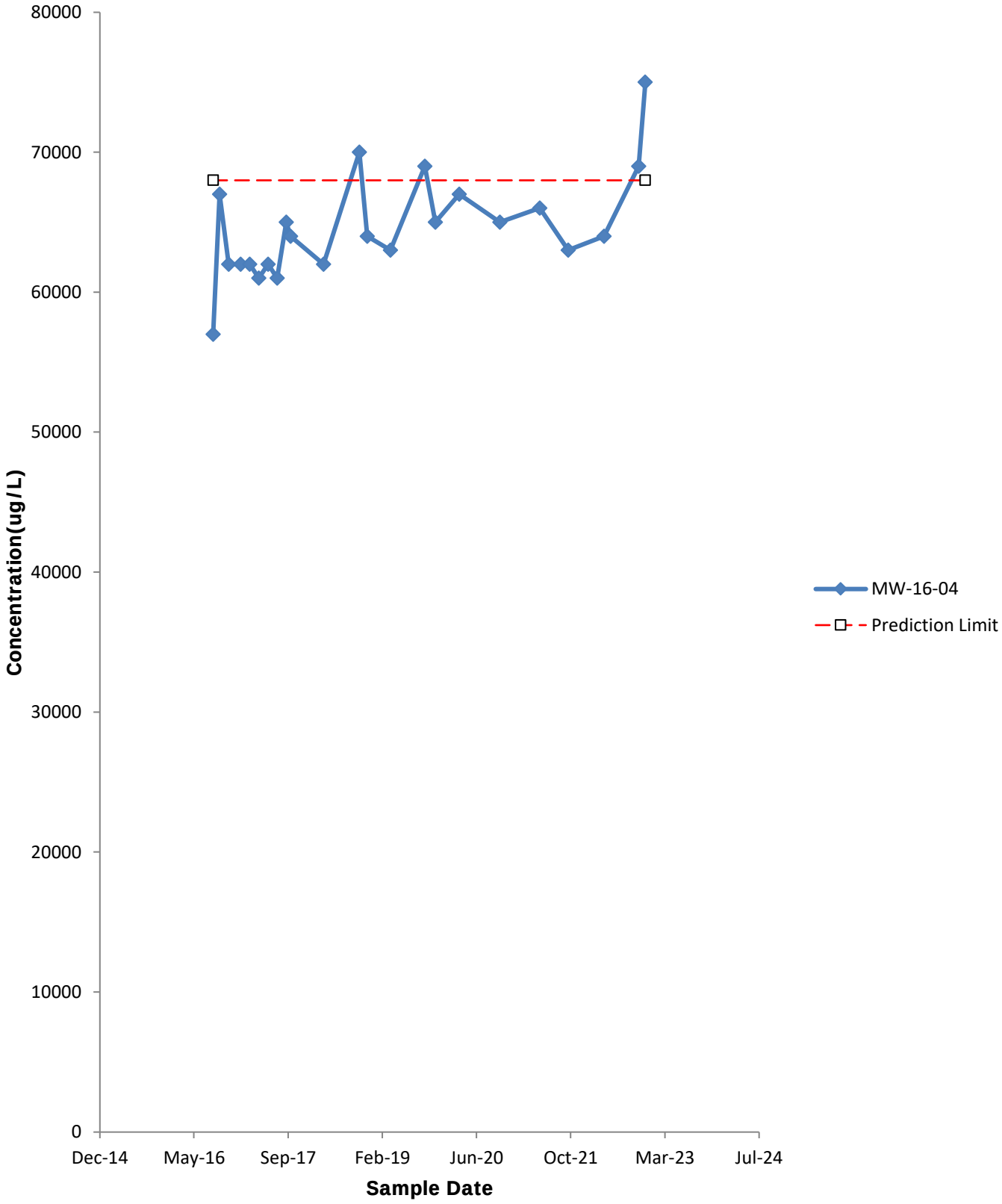


Figure 4
Calcium (mg/L), MW-16-04



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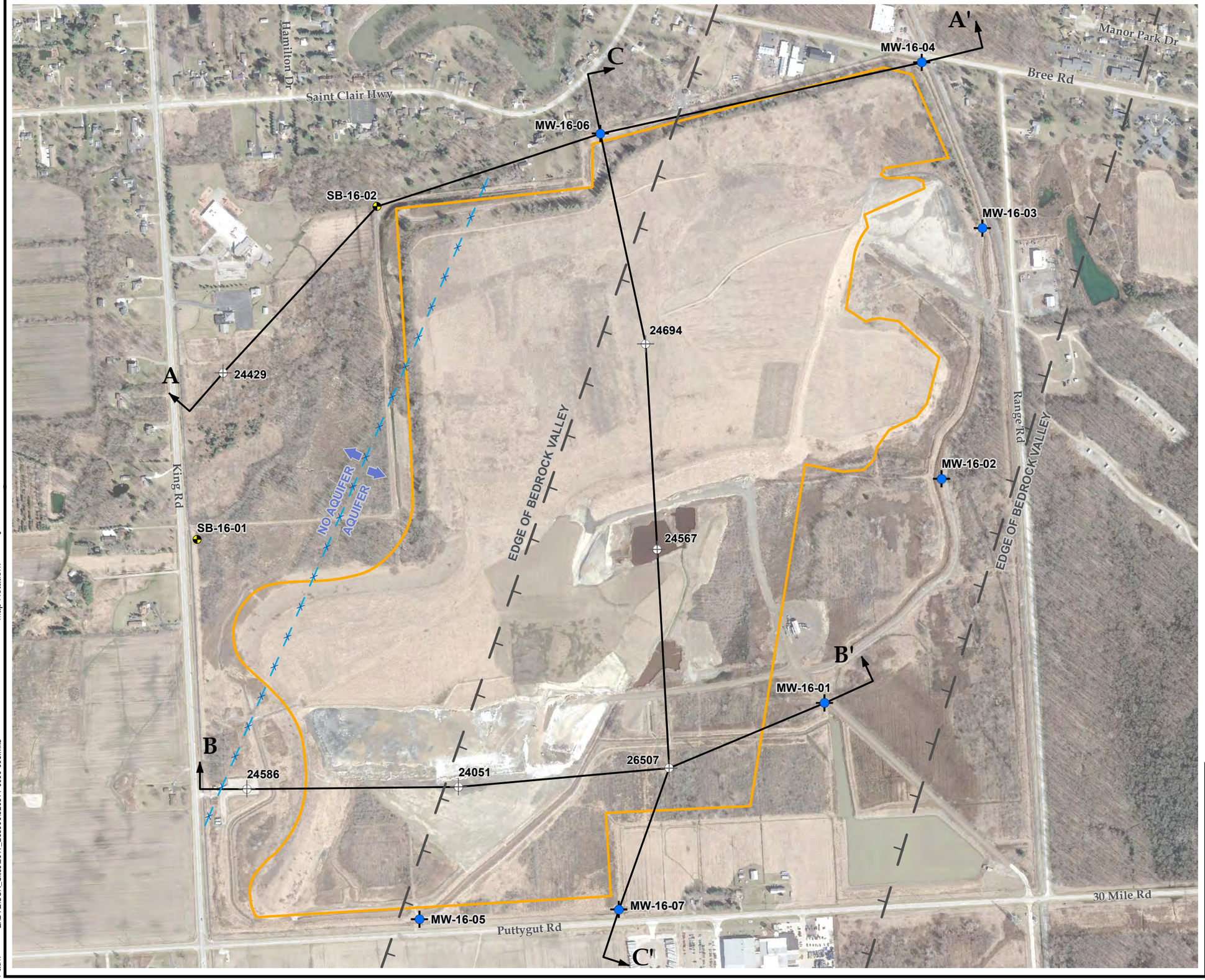
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0



LEGEND

- MONITORING WELL
- SOIL BORING
- APPROXIMATE ANTICIPATED MAXIMUM LIMIT OF ASH FILL
- OIL/GAS WELL LOCATION
- CROSS SECTION LINES
- APPROXIMATE AQUIFER BOUNDARY
- APPROXIMATE EDGE OF BEDROCK VALLEY

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, 2019.
2. WELL LOCATIONS SURVEYED IN MARCH AND MAY 2016 BY BMJ ENGINEERS & SURVEYORS, INC.
3. OIL AND GAS WELL LOCATIONS FROM MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, GEOWEBFACE.

N

0 600 1,200 Feet

1 " = 600 '
1:7,200

PROJECT:
DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
3600 RANGE ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
CROSS SECTION LOCATOR MAP

DRAWN BY:	S. MAJOR	PROJ NO.:	265996.0000
CHECKED BY:	S HOLMSTROM		
APPROVED BY:	V BUENING		**FIGURE 5**
DATE:	NOVEMBER 2019		

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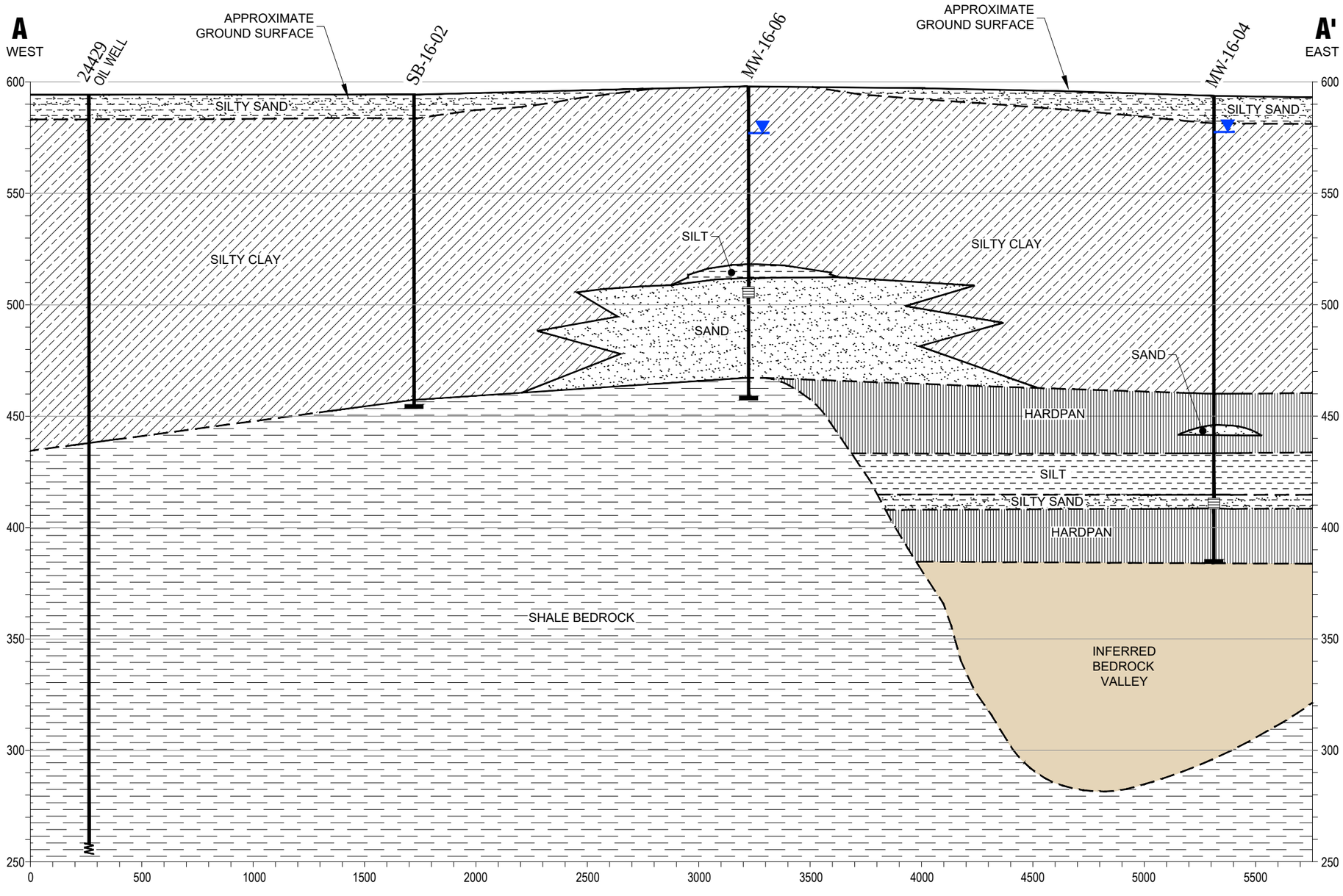
FILE NO.: 320511-0000-008.mxd

GENERALIZED GEOLOGIC CROSS-SECTION A-A'



LEGEND

- STRATEGRAPHIC BOUNDARY (DASHED WHERE INFERRED)
- GROUNDWATER ELEVATION
- SOIL BORING
- WELL SCREEN INTERVAL
- END OF BORING

Lithology Key

- SILT
- HARDPAN
- SILTY SAND
- SILTY CLAY
- SAND
- SHALE BEDROCK
- UNCONSOLIDATED BEDROCK VALLEY FILL

SCALE IN FEET
VERTICAL: 50 to 0
HORIZONTAL: 0 to 500

PROJECT:
DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
CHINA TOWNSHIP, MICHIGAN

TITLE:
GENERALIZED GEOLOGIC CROSS-SECTION A-A'

DRAWN BY:	D.STEHLE	PROJ NO.:	265996.0000
CHECKED BY:	S.HOLMSTROM		
APPROVED BY:	V.BUENING		**FIGURE 6**
DATE:	SEPTEMBER 2017		

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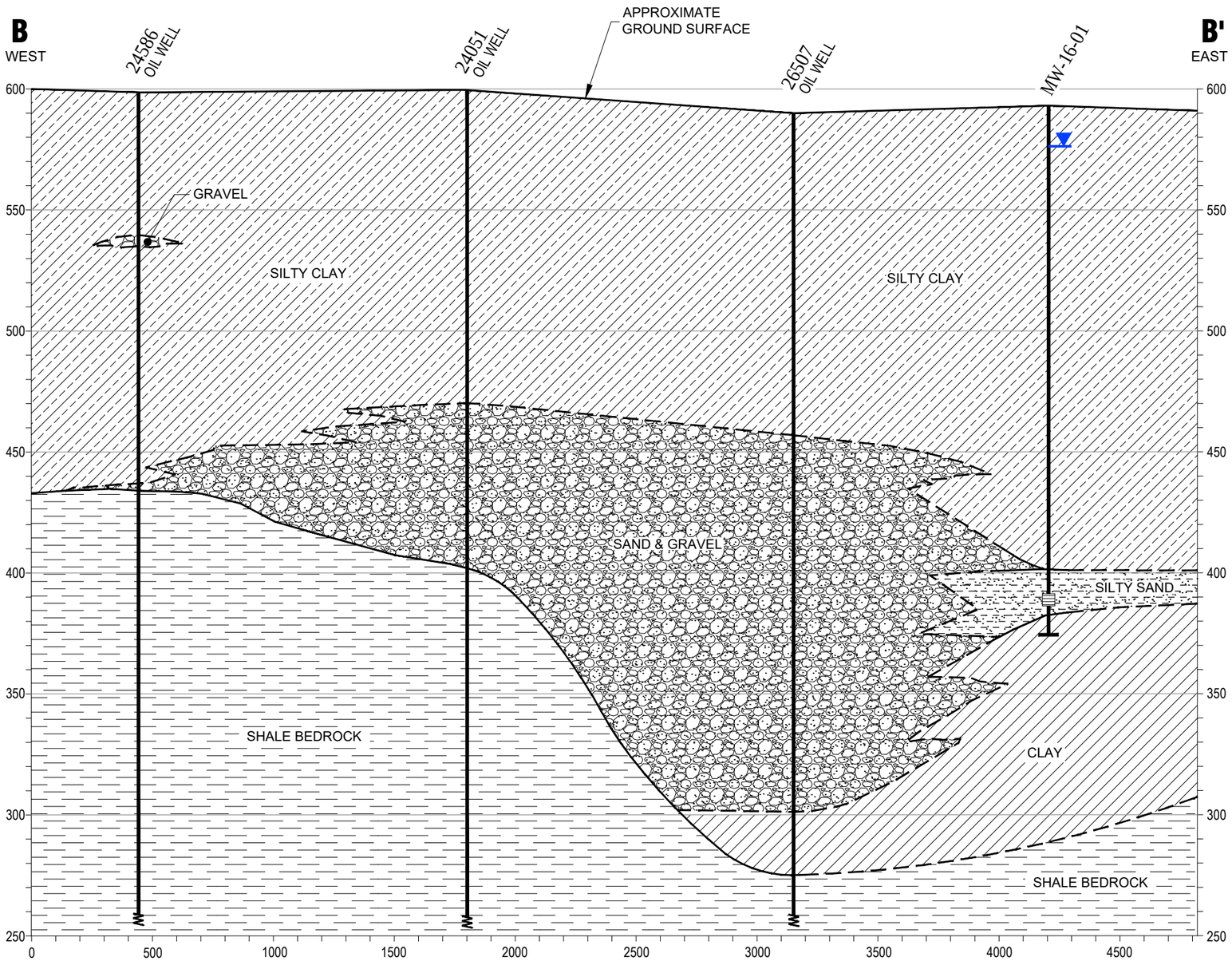
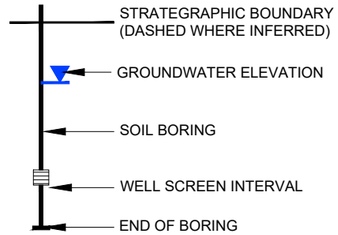
FILE NO.: 265996.0000.04-06.dwg

GENERALIZED GEOLOGIC CROSS-SECTION B-B'



LEGEND



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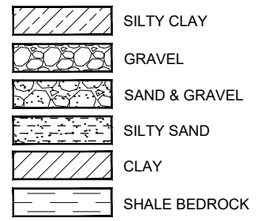

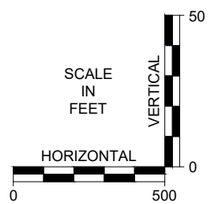

PROJECT:
DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
CHINA TOWNSHIP, MICHIGAN

TITLE:
GENERALIZED GEOLOGIC CROSS-SECTION B-B'

DRAWN BY:	D.STEHLE	PROJ NO.:	265996.0000
CHECKED BY:	S.HOLMSTROM		
APPROVED BY:	V.BUENING		**FIGURE 7**
DATE:	SEPTEMBER 2017		

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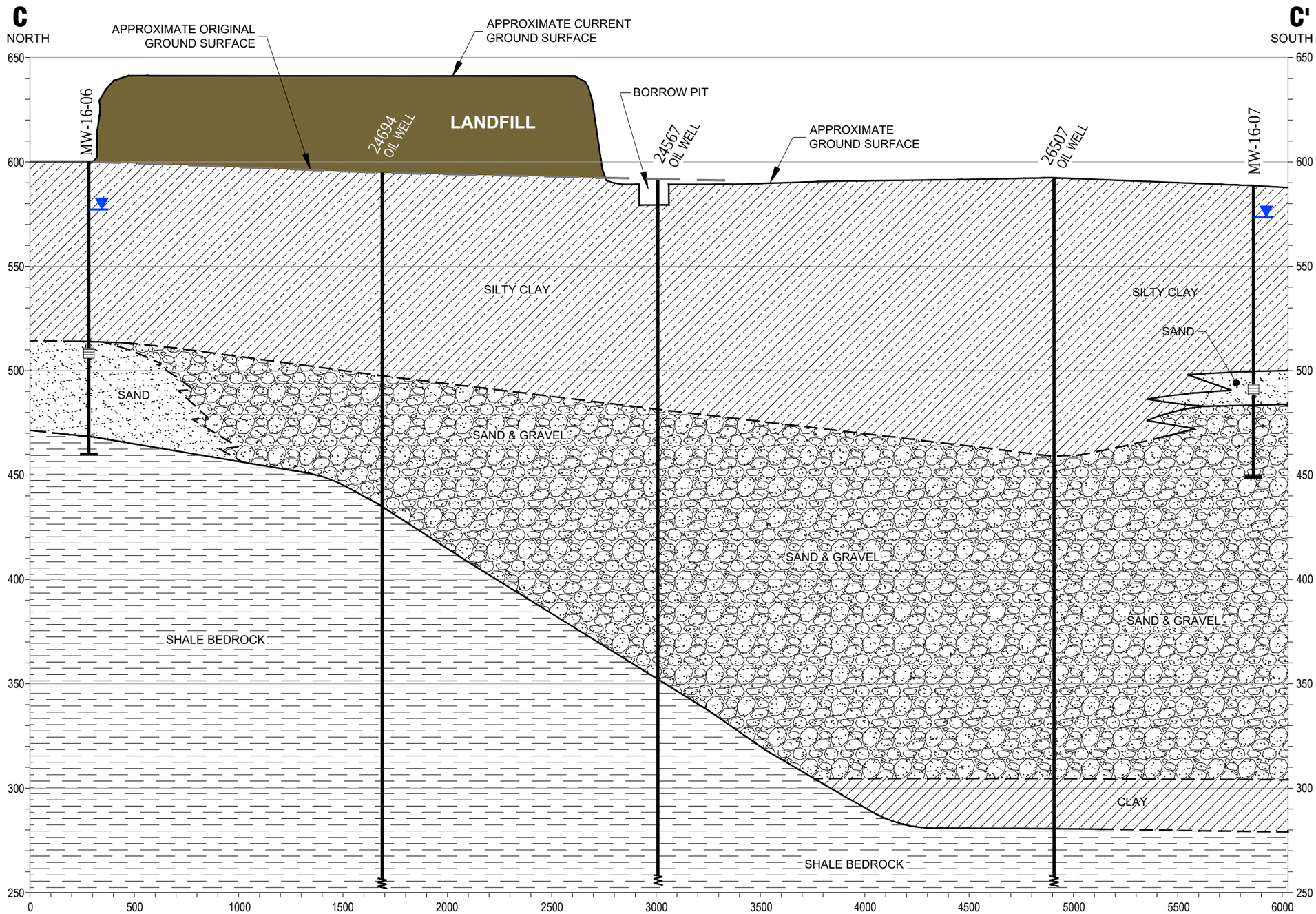
FILE NO.: 265996.0000.04-06.dwg

GENERALIZED GEOLOGIC CROSS-SECTION C-C'



LEGEND

- STRATEGRAPHIC BOUNDARY (DASHED WHERE INFERRED)
- GROUNDWATER ELEVATION
- SOIL BORING
- WELL SCREEN INTERVAL
- END OF BORING

Lithology Key

- SILTY CLAY
- SAND
- SAND & GRAVEL
- SILTY SAND
- CLAY
- SHALE BEDROCK

SCALE IN FEET
VERTICAL: 50 / 0
HORIZONTAL: 0 / 500

PROJECT:
DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
CHINA TOWNSHIP, MICHIGAN

TITLE:
GENERALIZED GEOLOGIC CROSS-SECTION C-C'

DRAWN BY:	D.STEHLE	PROJ NO.:	265996.0000
CHECKED BY:	S.HOLMSTROM		
APPROVED BY:	V.BUENING		**FIGURE 7**
DATE:	SEPTEMBER 2017		

TRC
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Phone: 734.971.7080
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FILE NO.: 265996.0000.04-06.dwg

Appendix A
References

References

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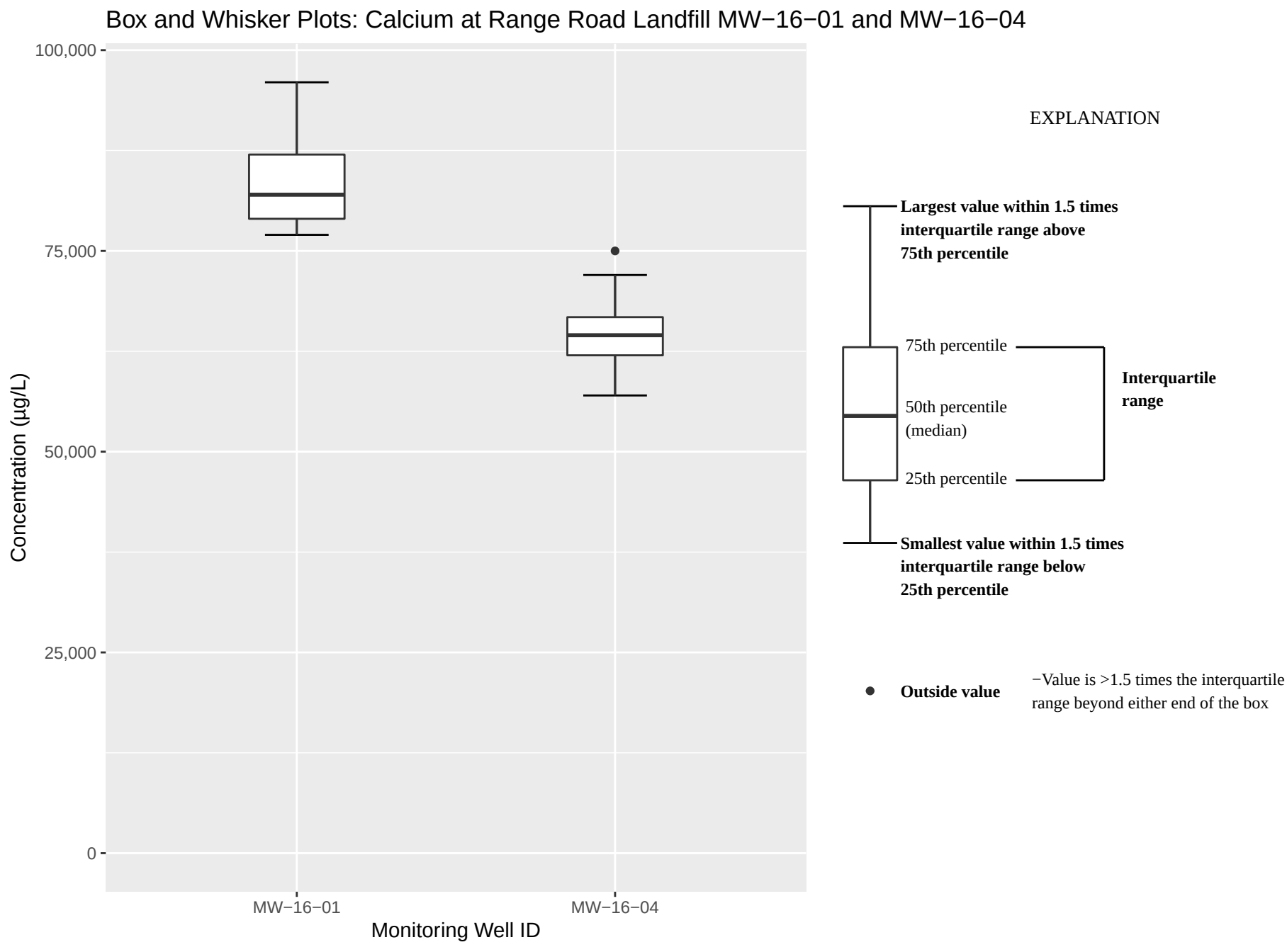
USEPA. April 2018. Barnes Johnson (Office of Resource Conservation and Recovery) to James Roewer (c/o Edison Electric Institute) and Douglas Green, Margaret Fawal (Venable LLP). Re: Coal Combustion Residuals Rule Groundwater Monitoring Requirements. April 30, 2018. United States Environmental Protection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

Appendix B
Box and Whisker Plots: Calcium at Range Road Landfill Monitoring Wells MW-16-01 and MW-16-04


Box and Whisker Plots: Calcium at Range Road Landfill MW−16−01 and MW−16−04
100,000
75,000
50,000
25,000
0
Concentration (µg/L)
MW−16−01
MW−16−04
Monitoring Well ID
EXPLANATION
Largest value within 1.5 times interquartile range above 75th percentile
75th percentile
50th percentile (median)
25th percentile
Interquartile range
Smallest value within 1.5 times interquartile range below 25th percentile
Outside value
−Value is >1.5 times the interquartile range beyond either end of the box

Appendix B
Laboratory Analytical Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 5/15/2023 8:32:50 PM

JOB DESCRIPTION

CCR DTE RRLF HMP Uppermost Aquifer

JOB NUMBER

240-184179-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization

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5/15/2023 8:32:50 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

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: 240-184179-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative
240-184179-1

Receipt
The samples were received on 4/26/2023 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

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

General Chemistry
Method 9056A_28D: The following sample was diluted due to the nature of the sample matrix: MW-16-04 (240-184179-4). Elevated reporting limits (RLs) are provided.

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

Method Summary

Client: TRC Environmental Corporation. Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

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

Protocol References:

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

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

Laboratory References:

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

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-184179-1	MW-16-01	Ground Water	04/25/23 09:54	04/26/23 08:00
240-184179-2	MW-16-02	Ground Water	04/24/23 12:48	04/26/23 08:00
240-184179-3	MW-16-03	Ground Water	04/24/23 12:10	04/26/23 08:00
240-184179-4	MW-16-04	Ground Water	04/25/23 09:16	04/26/23 08:00
240-184179-5	MW-16-05	Ground Water	04/24/23 13:39	04/26/23 08:00
240-184179-6	MW-16-06	Ground Water	04/24/23 11:33	04/26/23 08:00
240-184179-7	MW-16-07	Ground Water	04/25/23 10:31	04/26/23 08:00
240-184179-8	DUP-01	Ground Water	04/24/23 00:00	04/26/23 08:00
240-184179-9	EB-01	Water	04/24/23 10:15	04/26/23 08:00

Detection Summary

Client: TRC Environmental Corporation.
Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-01 — Lab Sample ID: 240-184179-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	700		100		ug/L	1		6010B	Total Recoverable
Calcium	100000		1000		ug/L	1		6020	Total Recoverable
Iron	1500		100		ug/L	1		6020	Total Recoverable
Chloride	530		10		mg/L	10		9056A	Total/NA
Fluoride	0.77		0.050		mg/L	1		9056A	Total/NA
Sulfate	320		10		mg/L	10		9056A	Total/NA
Total Dissolved Solids	1400		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02 — Lab Sample ID: 240-184179-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100		ug/L	1		6010B	Total Recoverable
Calcium	21000		1000		ug/L	1		6020	Total Recoverable
Iron	880		100		ug/L	1		6020	Total Recoverable
Chloride	660		10		mg/L	10		9056A	Total/NA
Fluoride	2.1		0.050		mg/L	1		9056A	Total/NA
Total Dissolved Solids	1100		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03 — Lab Sample ID: 240-184179-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100		ug/L	1		6010B	Total Recoverable
Calcium	18000		1000		ug/L	1		6020	Total Recoverable
Iron	530		100		ug/L	1		6020	Total Recoverable
Chloride	530		10		mg/L	10		9056A	Total/NA
Fluoride	2.2		0.050		mg/L	1		9056A	Total/NA
Total Dissolved Solids	980		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-04 — Lab Sample ID: 240-184179-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100		ug/L	1		6010B	Total Recoverable
Calcium	61000		1000		ug/L	1		6020	Total Recoverable
Iron	1500		100		ug/L	1		6020	Total Recoverable
Chloride	3100		50		mg/L	50		9056A	Total/NA
Fluoride	1.5		0.25		mg/L	5		9056A	Total/NA
Total Dissolved Solids	5200		100		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-05 — Lab Sample ID: 240-184179-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1200		100		ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-16-05 (Continued) — Lab Sample ID: 240-184179-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Calcium	19000		1000		ug/L	1		6020	Total Recoverable
Iron	210		100		ug/L	1		6020	Total Recoverable
Chloride	560		10		mg/L	10		9056A	Total/NA
Fluoride	2.0		0.050		mg/L	1		9056A	Total/NA
Sulfate	23		1.0		mg/L	1		9056A	Total/NA
Total Dissolved Solids	1000		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-06 — Lab Sample ID: 240-184179-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100		ug/L	1		6010B	Total Recoverable
Calcium	61000		1000		ug/L	1		6020	Total Recoverable
Iron	660		100		ug/L	1		6020	Total Recoverable
Chloride	480		5.0		mg/L	5		9056A	Total/NA
Fluoride	1.4		0.050		mg/L	1		9056A	Total/NA
Sulfate	280		5.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids	1300		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-07 — Lab Sample ID: 240-184179-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	380		100		ug/L	1		6010B	Total Recoverable
Calcium	52000		1000		ug/L	1		6020	Total Recoverable
Iron	2800		100		ug/L	1		6020	Total Recoverable
Chloride	99		1.0		mg/L	1		9056A	Total/NA
Fluoride	0.94		0.050		mg/L	1		9056A	Total/NA
Sulfate	33		1.0		mg/L	1		9056A	Total/NA
Total Dissolved Solids	370		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01 — Lab Sample ID: 240-184179-8

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100		ug/L	1		6010B	Total Recoverable
Calcium	61000		1000		ug/L	1		6020	Total Recoverable
Iron	650		100		ug/L	1		6020	Total Recoverable
Chloride	480		5.0		mg/L	5		9056A	Total/NA
Fluoride	1.4		0.050		mg/L	1		9056A	Total/NA
Sulfate	280		5.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids	1300		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: EB-01 — Lab Sample ID: 240-184179-9

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-01 **Lab Sample ID: 240-184179-1**
Date Collected: 04/25/23 09:54 **Matrix: Ground Water**
Date Received: 04/26/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	700		100		ug/L		04/28/23 14:00	04/29/23 12:26	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	100000		1000		ug/L		04/28/23 14:00	04/30/23 17:16	1
Iron	1500		100		ug/L		04/28/23 14:00	04/30/23 17:16	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	530		10		mg/L			05/13/23 06:42	10
Fluoride (SW846 9056A)	0.77		0.050		mg/L			05/13/23 05:42	1
Sulfate (SW846 9056A)	320		10		mg/L			05/13/23 06:42	10
Total Dissolved Solids (SM 2540C)	1400		20		mg/L			04/27/23 10:19	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-02 **Lab Sample ID: 240-184179-2**
Date Collected: 04/24/23 12:48 **Matrix: Ground Water**
Date Received: 04/26/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100		ug/L		04/28/23 14:00	04/29/23 12:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	21000		1000		ug/L		04/28/23 14:00	04/30/23 17:19	1
Iron	880		100		ug/L		04/28/23 14:00	04/30/23 17:19	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	660		10		mg/L			05/13/23 08:43	10
Fluoride (SW846 9056A)	2.1		0.050		mg/L			05/13/23 08:23	1
Sulfate (SW846 9056A)	1.0	U	1.0		mg/L			05/13/23 08:23	1
Total Dissolved Solids (SM 2540C)	1100		20		mg/L			04/27/23 10:19	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-03 **Lab Sample ID: 240-184179-3**
Date Collected: 04/24/23 12:10 **Matrix: Ground Water**
Date Received: 04/26/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100		ug/L		04/28/23 14:00	04/29/23 12:34	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	18000		1000		ug/L		04/28/23 14:00	04/30/23 16:49	1
Iron	530		100		ug/L		04/28/23 14:00	04/30/23 16:49	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	530		10		mg/L			05/13/23 08:03	10
Fluoride (SW846 9056A)	2.2		0.050		mg/L			05/13/23 07:43	1
Sulfate (SW846 9056A)	1.0	U	1.0		mg/L			05/13/23 07:43	1
Total Dissolved Solids (SM 2540C)	980		20		mg/L			04/27/23 10:19	1

Client: TRC Environmental Corporation.
Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-04
Lab Sample ID: 240-184179-4
Date Collected: 04/25/23 09:16
Matrix: Ground Water
Date Received: 04/26/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100		ug/L		04/28/23 14:00	04/29/23 12:39	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	61000		1000		ug/L		04/28/23 14:00	04/30/23 17:22	1
Iron	1500		100		ug/L		04/28/23 14:00	04/30/23 17:22	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	3100		50		mg/L			05/12/23 14:15	50
Fluoride (SW846 9056A)	1.5		0.25		mg/L			05/12/23 13:15	5
Sulfate (SW846 9056A)	5.0	U	5.0		mg/L			05/12/23 13:15	5
Total Dissolved Solids (SM 2540C)	5200		100		mg/L			04/27/23 10:19	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-05 **Lab Sample ID: 240-184179-5**
Date Collected: 04/24/23 13:39 **Matrix: Ground Water**
Date Received: 04/26/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1200		100		ug/L		04/28/23 14:00	04/29/23 12:43	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	19000		1000		ug/L		04/28/23 14:00	04/30/23 17:24	1
Iron	210		100		ug/L		04/28/23 14:00	04/30/23 17:24	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	560		10		mg/L			05/13/23 05:22	10
Fluoride (SW846 9056A)	2.0		0.050		mg/L			05/13/23 05:02	1
Sulfate (SW846 9056A)	23		1.0		mg/L			05/13/23 05:02	1
Total Dissolved Solids (SM 2540C)	1000		20		mg/L			04/27/23 10:19	1

Client: TRC Environmental Corporation.
Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-06
Lab Sample ID: 240-184179-6
Date Collected: 04/24/23 11:33
Matrix: Ground Water
Date Received: 04/26/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100		ug/L		04/28/23 14:00	04/29/23 12:47	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	61000		1000		ug/L		04/28/23 14:00	04/30/23 17:27	1
Iron	660		100		ug/L		04/28/23 14:00	04/30/23 17:27	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	480		5.0		mg/L			05/12/23 21:18	5
Fluoride (SW846 9056A)	1.4		0.050		mg/L			05/12/23 21:39	1
Sulfate (SW846 9056A)	280		5.0		mg/L			05/12/23 21:18	5
Total Dissolved Solids (SM 2540C)	1300		20		mg/L			04/27/23 10:19	1

Client: TRC Environmental Corporation.
Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-07
Lab Sample ID: 240-184179-7
Date Collected: 04/25/23 10:31
Matrix: Ground Water
Date Received: 04/26/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	380		100		ug/L		04/28/23 14:00	04/29/23 12:52	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	52000		1000		ug/L		04/28/23 14:00	04/30/23 17:30	1
Iron	2800		100		ug/L		04/28/23 14:00	04/30/23 17:30	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	99		1.0		mg/L			05/12/23 22:59	1
Fluoride (SW846 9056A)	0.94		0.050		mg/L			05/12/23 22:59	1
Sulfate (SW846 9056A)	33		1.0		mg/L			05/12/23 22:59	1
Total Dissolved Solids (SM 2540C)	370		10		mg/L			04/27/23 10:19	1

Client: TRC Environmental Corporation.
Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: DUP-01
Lab Sample ID: 240-184179-8
Date Collected: 04/24/23 00:00
Matrix: Ground Water
Date Received: 04/26/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100		ug/L		04/28/23 14:00	04/29/23 12:56	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	61000		1000		ug/L		04/28/23 14:00	04/30/23 17:32	1
Iron	650		100		ug/L		04/28/23 14:00	04/30/23 17:32	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	480		5.0		mg/L			05/13/23 00:40	5
Fluoride (SW846 9056A)	1.4		0.050		mg/L			05/13/23 00:20	1
Sulfate (SW846 9056A)	280		5.0		mg/L			05/13/23 00:40	5
Total Dissolved Solids (SM 2540C)	1300		20		mg/L			04/27/23 10:19	1

Client: TRC Environmental Corporation.
Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: EB-01
Lab Sample ID: 240-184179-9
Date Collected: 04/24/23 10:15
Matrix: Water
Date Received: 04/26/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100		ug/L		04/28/23 14:00	04/29/23 13:00	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000		ug/L		04/28/23 14:00	04/30/23 17:35	1
Iron	100	U	100		ug/L		04/28/23 14:00	04/30/23 17:35	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	1.0	U	1.0		mg/L			05/12/23 19:17	1
Fluoride (SW846 9056A)	0.050	U	0.050		mg/L			05/12/23 19:17	1
Sulfate (SW846 9056A)	1.0	U	1.0		mg/L			05/12/23 19:17	1
Total Dissolved Solids (SM 2540C)	10	U	10		mg/L			04/27/23 10:19	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-571306/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 571513 — **Prep Batch: 571306**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100		ug/L		04/28/23 14:00	04/29/23 11:35	1

Lab Sample ID: LCS 240-571306/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 571513 — **Prep Batch: 571306**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			1000	1000		ug/L		100	80 - 120		

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-571306/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 571458 — **Prep Batch: 571306**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000		ug/L		04/28/23 14:00	04/30/23 16:44	1
Iron	100	U	100		ug/L		04/28/23 14:00	04/30/23 16:44	1

Lab Sample ID: LCS 240-571306/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 571458 — **Prep Batch: 571306**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium			25000	23700		ug/L		95	80 - 120		
Iron			5000	5000		ug/L		100	80 - 120		

Lab Sample ID: 240-184179-3 MS — **Client Sample ID: MW-16-03**
Matrix: Ground Water — **Prep Type: Total Recoverable**
Analysis Batch: 571458 — **Prep Batch: 571306**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium	18000		25000	42600		ug/L		96	75 - 125		
Iron	530		5000	5650		ug/L		102	75 - 125		

Lab Sample ID: 240-184179-3 MSD — **Client Sample ID: MW-16-03**
Matrix: Ground Water — **Prep Type: Total Recoverable**
Analysis Batch: 571458 — **Prep Batch: 571306**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	18000		25000	43100		ug/L		99	75 - 125	1	20
Iron	530		5000	5660		ug/L		103	75 - 125	0	20

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-572652/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 572652

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			05/12/23 18:37	1
Fluoride	0.050	U	0.050		mg/L			05/12/23 18:37	1
Sulfate	1.0	U	1.0		mg/L			05/12/23 18:37	1

Lab Sample ID: LCS 240-572652/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 572652

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	50.9		mg/L		102	90 - 110		
Fluoride			2.50	2.65		mg/L		106	90 - 110		
Sulfate			50.0	52.4		mg/L		105	90 - 110		

Lab Sample ID: 240-184179-9 MS — **Client Sample ID: EB-01**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 572652

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1.0	U	50.0	50.0		mg/L		100	80 - 120		
Fluoride	0.050	U	2.50	2.61		mg/L		104	80 - 120		
Sulfate	1.0	U	50.0	51.9		mg/L		104	80 - 120		

Lab Sample ID: 240-184179-9 MSD — **Client Sample ID: EB-01**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 572652

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1.0	U	50.0	48.4		mg/L		97	80 - 120	3	15
Fluoride	0.050	U	2.50	2.47		mg/L		99	80 - 120	6	15
Sulfate	1.0	U	50.0	50.6		mg/L		101	80 - 120	3	15

Lab Sample ID: MB 240-572671/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 572671

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			05/12/23 06:12	1
Fluoride	0.050	U	0.050		mg/L			05/12/23 06:12	1
Sulfate	1.0	U	1.0		mg/L			05/12/23 06:12	1

Lab Sample ID: LCS 240-572671/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 572671

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	50.4		mg/L		101	90 - 110		
Fluoride			2.50	2.63		mg/L		105	90 - 110		
Sulfate			50.0	52.6		mg/L		105	90 - 110		

Client: TRC Environmental Corporation.
Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

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

Lab Sample ID: MB 240-571098/1
Matrix: Water
Analysis Batch: 571098

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			04/27/23 10:19	1

Lab Sample ID: LCS 240-571098/2
Matrix: Water
Analysis Batch: 571098

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			580	526		mg/L		91	80 - 120		

Lab Sample ID: MB 240-571279/1
Matrix: Water
Analysis Batch: 571279

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			04/28/23 09:51	1

Lab Sample ID: LCS 240-571279/2
Matrix: Water
Analysis Batch: 571279

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			580	544		mg/L		94	80 - 120		

Metals

Prep Batch: 571306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184179-1	MW-16-01	Total Recoverable	Ground Water	3005A	
240-184179-2	MW-16-02	Total Recoverable	Ground Water	3005A	
240-184179-3	MW-16-03	Total Recoverable	Ground Water	3005A	
240-184179-4	MW-16-04	Total Recoverable	Ground Water	3005A	
240-184179-5	MW-16-05	Total Recoverable	Ground Water	3005A	
240-184179-6	MW-16-06	Total Recoverable	Ground Water	3005A	
240-184179-7	MW-16-07	Total Recoverable	Ground Water	3005A	
240-184179-8	DUP-01	Total Recoverable	Ground Water	3005A	
240-184179-9	EB-01	Total Recoverable	Water	3005A	
MB 240-571306/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-571306/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-571306/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-184179-3 MS	MW-16-03	Total Recoverable	Ground Water	3005A	
240-184179-3 MSD	MW-16-03	Total Recoverable	Ground Water	3005A	

Analysis Batch: 571458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184179-1	MW-16-01	Total Recoverable	Ground Water	6020	571306
240-184179-2	MW-16-02	Total Recoverable	Ground Water	6020	571306
240-184179-3	MW-16-03	Total Recoverable	Ground Water	6020	571306
240-184179-4	MW-16-04	Total Recoverable	Ground Water	6020	571306
240-184179-5	MW-16-05	Total Recoverable	Ground Water	6020	571306
240-184179-6	MW-16-06	Total Recoverable	Ground Water	6020	571306
240-184179-7	MW-16-07	Total Recoverable	Ground Water	6020	571306
240-184179-8	DUP-01	Total Recoverable	Ground Water	6020	571306
240-184179-9	EB-01	Total Recoverable	Water	6020	571306
MB 240-571306/1-A	Method Blank	Total Recoverable	Water	6020	571306
LCS 240-571306/3-A	Lab Control Sample	Total Recoverable	Water	6020	571306
240-184179-3 MS	MW-16-03	Total Recoverable	Ground Water	6020	571306
240-184179-3 MSD	MW-16-03	Total Recoverable	Ground Water	6020	571306

Analysis Batch: 571513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184179-1	MW-16-01	Total Recoverable	Ground Water	6010B	571306
240-184179-2	MW-16-02	Total Recoverable	Ground Water	6010B	571306
240-184179-3	MW-16-03	Total Recoverable	Ground Water	6010B	571306
240-184179-4	MW-16-04	Total Recoverable	Ground Water	6010B	571306
240-184179-5	MW-16-05	Total Recoverable	Ground Water	6010B	571306
240-184179-6	MW-16-06	Total Recoverable	Ground Water	6010B	571306
240-184179-7	MW-16-07	Total Recoverable	Ground Water	6010B	571306
240-184179-8	DUP-01	Total Recoverable	Ground Water	6010B	571306
240-184179-9	EB-01	Total Recoverable	Water	6010B	571306
MB 240-571306/1-A	Method Blank	Total Recoverable	Water	6010B	571306
LCS 240-571306/2-A	Lab Control Sample	Total Recoverable	Water	6010B	571306

General Chemistry

Analysis Batch: 571098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184179-1	MW-16-01	Total/NA	Ground Water	SM 2540C	
240-184179-2	MW-16-02	Total/NA	Ground Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 571098 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184179-3	MW-16-03	Total/NA	Ground Water	SM 2540C	
240-184179-4	MW-16-04	Total/NA	Ground Water	SM 2540C	
240-184179-5	MW-16-05	Total/NA	Ground Water	SM 2540C	
240-184179-6	MW-16-06	Total/NA	Ground Water	SM 2540C	
240-184179-7	MW-16-07	Total/NA	Ground Water	SM 2540C	
240-184179-8	DUP-01	Total/NA	Ground Water	SM 2540C	
240-184179-9	EB-01	Total/NA	Water	SM 2540C	
MB 240-571098/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-571098/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 571279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-571279/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-571279/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 572652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184179-1	MW-16-01	Total/NA	Ground Water	9056A	
240-184179-1	MW-16-01	Total/NA	Ground Water	9056A	
240-184179-2	MW-16-02	Total/NA	Ground Water	9056A	
240-184179-2	MW-16-02	Total/NA	Ground Water	9056A	
240-184179-3	MW-16-03	Total/NA	Ground Water	9056A	
240-184179-3	MW-16-03	Total/NA	Ground Water	9056A	
240-184179-5	MW-16-05	Total/NA	Ground Water	9056A	
240-184179-5	MW-16-05	Total/NA	Ground Water	9056A	
240-184179-6	MW-16-06	Total/NA	Ground Water	9056A	
240-184179-6	MW-16-06	Total/NA	Ground Water	9056A	
240-184179-7	MW-16-07	Total/NA	Ground Water	9056A	
240-184179-8	DUP-01	Total/NA	Ground Water	9056A	
240-184179-8	DUP-01	Total/NA	Ground Water	9056A	
240-184179-9	EB-01	Total/NA	Water	9056A	
MB 240-572652/3	Method Blank	Total/NA	Water	9056A	
LCS 240-572652/4	Lab Control Sample	Total/NA	Water	9056A	
240-184179-9 MS	EB-01	Total/NA	Water	9056A	
240-184179-9 MSD	EB-01	Total/NA	Water	9056A	

Analysis Batch: 572671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184179-4	MW-16-04	Total/NA	Ground Water	9056A	
240-184179-4	MW-16-04	Total/NA	Ground Water	9056A	
MB 240-572671/3	Method Blank	Total/NA	Water	9056A	
LCS 240-572671/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-01 — Lab Sample ID: 240-184179-1

Date Collected: 04/25/23 09:54 — **Matrix: Ground Water**
Date Received: 04/26/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6010B		1	571513	KLC	EET CLE	04/29/23 12:26
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6020		1	571458	AJC	EET CLE	04/30/23 17:16
Total/NA	Analysis	9056A		1	572652	JWW	EET CLE	05/13/23 05:42
Total/NA	Analysis	9056A		10	572652	JWW	EET CLE	05/13/23 06:42
Total/NA	Analysis	SM 2540C		1	571098	GH	EET CLE	04/27/23 10:19

Client Sample ID: MW-16-02 — Lab Sample ID: 240-184179-2

Date Collected: 04/24/23 12:48 — **Matrix: Ground Water**
Date Received: 04/26/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6010B		1	571513	KLC	EET CLE	04/29/23 12:30
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6020		1	571458	AJC	EET CLE	04/30/23 17:19
Total/NA	Analysis	9056A		1	572652	JWW	EET CLE	05/13/23 08:23
Total/NA	Analysis	9056A		10	572652	JWW	EET CLE	05/13/23 08:43
Total/NA	Analysis	SM 2540C		1	571098	GH	EET CLE	04/27/23 10:19

Client Sample ID: MW-16-03 — Lab Sample ID: 240-184179-3

Date Collected: 04/24/23 12:10 — **Matrix: Ground Water**
Date Received: 04/26/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6010B		1	571513	KLC	EET CLE	04/29/23 12:34
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6020		1	571458	AJC	EET CLE	04/30/23 16:49
Total/NA	Analysis	9056A		1	572652	JWW	EET CLE	05/13/23 07:43
Total/NA	Analysis	9056A		10	572652	JWW	EET CLE	05/13/23 08:03
Total/NA	Analysis	SM 2540C		1	571098	GH	EET CLE	04/27/23 10:19

Client Sample ID: MW-16-04 — Lab Sample ID: 240-184179-4

Date Collected: 04/25/23 09:16 — **Matrix: Ground Water**
Date Received: 04/26/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6010B		1	571513	KLC	EET CLE	04/29/23 12:39
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6020		1	571458	AJC	EET CLE	04/30/23 17:22
Total/NA	Analysis	9056A		5	572671	JWW	EET CLE	05/12/23 13:15

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-04
Lab Sample ID: 240-184179-4
Date Collected: 04/25/23 09:16
Matrix: Ground Water
Date Received: 04/26/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		50	572671	JWW	EET CLE	05/12/23 14:15
Total/NA	Analysis	SM 2540C		1	571098	GH	EET CLE	04/27/23 10:19

Client Sample ID: MW-16-05
Lab Sample ID: 240-184179-5
Date Collected: 04/24/23 13:39
Matrix: Ground Water
Date Received: 04/26/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6010B		1	571513	KLC	EET CLE	04/29/23 12:43
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6020		1	571458	AJC	EET CLE	04/30/23 17:24
Total/NA	Analysis	9056A		1	572652	JWW	EET CLE	05/13/23 05:02
Total/NA	Analysis	9056A		10	572652	JWW	EET CLE	05/13/23 05:22
Total/NA	Analysis	SM 2540C		1	571098	GH	EET CLE	04/27/23 10:19

Client Sample ID: MW-16-06
Lab Sample ID: 240-184179-6
Date Collected: 04/24/23 11:33
Matrix: Ground Water
Date Received: 04/26/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6010B		1	571513	KLC	EET CLE	04/29/23 12:47
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6020		1	571458	AJC	EET CLE	04/30/23 17:27
Total/NA	Analysis	9056A		5	572652	JWW	EET CLE	05/12/23 21:18
Total/NA	Analysis	9056A		1	572652	JWW	EET CLE	05/12/23 21:39
Total/NA	Analysis	SM 2540C		1	571098	GH	EET CLE	04/27/23 10:19

Client Sample ID: MW-16-07
Lab Sample ID: 240-184179-7
Date Collected: 04/25/23 10:31
Matrix: Ground Water
Date Received: 04/26/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6010B		1	571513	KLC	EET CLE	04/29/23 12:52
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6020		1	571458	AJC	EET CLE	04/30/23 17:30
Total/NA	Analysis	9056A		1	572652	JWW	EET CLE	05/12/23 22:59
Total/NA	Analysis	SM 2540C		1	571098	GH	EET CLE	04/27/23 10:19

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: DUP-01 — Lab Sample ID: 240-184179-8

Date Collected: 04/24/23 00:00 — **Matrix: Ground Water**
Date Received: 04/26/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6010B		1	571513	KLC	EET CLE	04/29/23 12:56
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6020		1	571458	AJC	EET CLE	04/30/23 17:32
Total/NA	Analysis	9056A		1	572652	JWW	EET CLE	05/13/23 00:20
Total/NA	Analysis	9056A		5	572652	JWW	EET CLE	05/13/23 00:40
Total/NA	Analysis	SM 2540C		1	571098	GH	EET CLE	04/27/23 10:19

Client Sample ID: EB-01 — Lab Sample ID: 240-184179-9

Date Collected: 04/24/23 10:15 — **Matrix: Water**
Date Received: 04/26/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6010B		1	571513	KLC	EET CLE	04/29/23 13:00
Total Recoverable	Prep	3005A			571306	DEE	EET CLE	04/28/23 14:00
Total Recoverable	Analysis	6020		1	571458	AJC	EET CLE	04/30/23 17:35
Total/NA	Analysis	9056A		1	572652	JWW	EET CLE	05/12/23 19:17
Total/NA	Analysis	SM 2540C		1	571098	GH	EET CLE	04/27/23 10:19

Laboratory References:

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

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-184179-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Connecticut	State	PH-0590	06-29-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

MICHIGAN 190

MICHIGAN 190

Chain of Custody Record

I.D. #P

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

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Client Information	Sampler: Jacob Krenz	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-106957-31929.1
Client Contact: Mr. Vincent Buening	Phone: 734-395-9804	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page of
Company: TRC Environmental Corporation.	PWSID:	Analysis Requested		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 #: 199485			
Email: vbuening@trccompanies.com	WO #: 518728.0000			
Project Name: CCR DTE RRLF HMP Uppermost Aquifer	Project #: 24016807			
Site: Michigan	SSOW#:			

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

Sample Identification	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)	6010 Bo, 6020 Ca, Fe	2540C_Calcd - TDS	9056A_28D - Chloride, Fluoride and Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N		
MW-16-01	4-25-23	0954	G	Water	N	N	X	X	X		
MW-16-02	4-24-23	1248		Water			X	X	X		
MW-16-03	4-24-23	1210		Water			X	X	X		
MW-16-04	4-25-23	0916		Water			X	X	X		
MW-16-05	4-24-23	1379		Water			X	X	X		
MW-16-06	4-24-23	1133		Water			X	X	X		
MW-16-07	4-25-23	1031		Water			X	X	X		
DUP-01	4-24-23	—		Water			X	X	X		
EB-01	4-24-23	1015		Water			X	X	X		
				Water							

240-184179 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:

	Date/Time	Company		Date/Time	Company
Relinquished by	4-25-23/1330	TRC	Received by	4/25/23 13:40	EEA
Relinquished by	4-25-23 13:40	EEA	Received by	42623 800	EETAC
Relinquished by			Received by		

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 # : 184174
Barberton Facility

Client TRC Site Name

Cooler Received on 4 26 23 Opened on 4 26 23

Cooler unpacked by: Rachelle Hodet

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

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

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam (Plastic Bag) None Other

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
IR GUN # 22 (CF +0 °C) Observed Cooler Temp. 1.0 °C Corrected Cooler Temp. 1.0 °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)?	(Yes) No
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# **HC203864**
14. Were VOAs on the COC?	Yes (No)
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes No (NA)
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes (No)
17. Was a LL Hg or Me Hg trip blank present?	Yes (No)

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

Contacted PM Date by via Verbal Voice Mail Other

Concerning

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

Samples processed by:

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.
Time preserved: Preservative(s) added/Lot number(s):

VOA Sample Preservation - Date/Time VOAs Frozen:

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-01	240-184179-B-1	Plastic 250ml - with Nitric Acid	<2			
MW-16-02	240-184179-B-2	Plastic 250ml - with Nitric Acid	<2			
MW-16-03	240-184179-B-3	Plastic 250ml - with Nitric Acid	<2			
MW-16-04	240-184179-B-4	Plastic 250ml - with Nitric Acid	<2			
MW-16-05	240-184179-B-5	Plastic 250ml - with Nitric Acid	<2			
MW-16-06	240-184179-B-6	Plastic 250ml - with Nitric Acid	<2			
MW-16-07	240-184179-B-7	Plastic 250ml - with Nitric Acid	<2			
DUP-01	240-184179-B-8	Plastic 250ml - with Nitric Acid	<2			
EB-01	240-184179-B-9	Plastic 250ml - with Nitric Acid	<2			

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 6/26/2023 11:08:24 PM

JOB DESCRIPTION

CCR DTE RRLF 1AS23 Verification

JOB NUMBER

240-187147-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization

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6/26/2023 11:08:24 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation.
Job ID: 240-187147-1
Project/Site: CCR DTE RRLF 1AS23 Verification

Qualifiers

General Chemistry

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

Glossary

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

Case Narrative

Client: TRC Environmental Corporation.
Job ID: 240-187147-1
Project/Site: CCR DTE RRLF 1AS23 Verification

Job ID: 240-187147-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative
240-187147-1

Receipt

The samples were received on 6/16/2023 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

General Chemistry

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

Method Summary

Client: TRC Environmental Corporation.
Job ID: 240-187147-1
Project/Site: CCR DTE RRLF 1AS23 Verification

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CLE
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CLE

Protocol References:

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

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

Laboratory References:

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

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-187147-1
Project/Site: CCR DTE RRLF 1AS23 Verification

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-187147-1	MW-16-01	Water	06/14/23 12:00	06/16/23 08:00
240-187147-2	MW-16-05	Water	06/14/23 11:12	06/16/23 08:00
240-187147-3	DUP-01	Water	06/14/23 00:00	06/16/23 08:00
240-187147-4	DUP-02	Water	06/14/23 00:00	06/16/23 08:00

Detection Summary

Client: TRC Environmental Corporation.
Job ID: 240-187147-1
Project/Site: CCR DTE RRLF 1AS23 Verification

Client Sample ID: MW-16-01
Lab Sample ID: 240-187147-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	920		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-05
Lab Sample ID: 240-187147-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Sulfate	4.2		2.0		mg/L	2		9056A	Total/NA

Client Sample ID: DUP-01
Lab Sample ID: 240-187147-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	910		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-02
Lab Sample ID: 240-187147-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Sulfate	4.0		2.0		mg/L	2		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation.
Job ID: 240-187147-1
Project/Site: CCR DTE RRLF 1AS23 Verification

Client Sample ID: MW-16-01
Lab Sample ID: 240-187147-1
Date Collected: 06/14/23 12:00
Matrix: Water
Date Received: 06/16/23 08:00

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	920		20		mg/L			06/20/23 10:15	1

Client: TRC Environmental Corporation.
Job ID: 240-187147-1
Project/Site: CCR DTE RRLF 1AS23 Verification

Client Sample ID: MW-16-05
Lab Sample ID: 240-187147-2
Date Collected: 06/14/23 11:12
Matrix: Water
Date Received: 06/16/23 08:00

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate (SW846 9056A)	4.2		2.0		mg/L			06/24/23 01:54	2

Client: TRC Environmental Corporation.
Job ID: 240-187147-1
Project/Site: CCR DTE RRLF 1AS23 Verification

Client Sample ID: DUP-01
Lab Sample ID: 240-187147-3
Date Collected: 06/14/23 00:00
Matrix: Water
Date Received: 06/16/23 08:00

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	910		20		mg/L			06/20/23 10:15	1

Client: TRC Environmental Corporation.
Job ID: 240-187147-1
Project/Site: CCR DTE RRLF 1AS23 Verification

Client Sample ID: DUP-02
Lab Sample ID: 240-187147-4
Date Collected: 06/14/23 00:00
Matrix: Water
Date Received: 06/16/23 08:00

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate (SW846 9056A)	4.0		2.0		mg/L			06/24/23 02:14	2

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-578364/3
Matrix: Water
Analysis Batch: 578364

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.0	U	1.0		mg/L			06/21/23 04:49	1

Lab Sample ID: LCS 240-578364/4
Matrix: Water
Analysis Batch: 578364

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			50.0	51.4		mg/L		103	90 - 110		

Lab Sample ID: MB 240-578390/3
Matrix: Water
Analysis Batch: 578390

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.0	U	1.0		mg/L			06/24/23 01:14	1

Lab Sample ID: LCS 240-578390/4
Matrix: Water
Analysis Batch: 578390

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			50.0	51.0		mg/L		102	90 - 110		

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

Lab Sample ID: MB 240-577835/1
Matrix: Water
Analysis Batch: 577835

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			06/20/23 10:15	1

Lab Sample ID: LCS 240-577835/2
Matrix: Water
Analysis Batch: 577835

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			518	491		mg/L		95	80 - 120		

QC Association Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRLF 1AS23 Verification

Job ID: 240-187147-1

General Chemistry

Analysis Batch: 577835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-187147-1	MW-16-01	Total/NA	Water	SM 2540C	
240-187147-3	DUP-01	Total/NA	Water	SM 2540C	
MB 240-577835/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-577835/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 578364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-578364/3	Method Blank	Total/NA	Water	9056A	
LCS 240-578364/4	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 578390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-187147-2	MW-16-05	Total/NA	Water	9056A	
240-187147-4	DUP-02	Total/NA	Water	9056A	
MB 240-578390/3	Method Blank	Total/NA	Water	9056A	
LCS 240-578390/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation.
Job ID: 240-187147-1
Project/Site: CCR DTE RRLF 1AS23 Verification

Client Sample ID: MW-16-01
Lab Sample ID: 240-187147-1
Date Collected: 06/14/23 12:00
Matrix: Water
Date Received: 06/16/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2540C		1	577835	GH	EET CLE	06/20/23 10:15

Client Sample ID: MW-16-05
Lab Sample ID: 240-187147-2
Date Collected: 06/14/23 11:12
Matrix: Water
Date Received: 06/16/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		2	578390	JWW	EET CLE	06/24/23 01:54

Client Sample ID: DUP-01
Lab Sample ID: 240-187147-3
Date Collected: 06/14/23 00:00
Matrix: Water
Date Received: 06/16/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2540C		1	577835	GH	EET CLE	06/20/23 10:15

Client Sample ID: DUP-02
Lab Sample ID: 240-187147-4
Date Collected: 06/14/23 00:00
Matrix: Water
Date Received: 06/16/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		2	578390	JWW	EET CLE	06/24/23 02:14

Laboratory References:

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

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-187147-1
Project/Site: CCR DTE RRLF 1AS23 Verification

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Connecticut	State	PH-0590	06-29-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

>> Select a Laboratory or Service Center <<
#N/A
#N/A
#N/A
##

MICHIGAN 190

Chain of Custody Record

20|20

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Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Environment Testing America

Client Contact	Project Manager:	Site Contact:	Date:	COC No:
TRC	Email: vbuening@trccompanies.com	Lab Contact: Kris Brooks	Carrier:	_____ of _____ COCs
1540 Eisenhower Place	Tel/Fax:			TALS Project #
City/State/Zip: Ann Arbor MI 48108	Analysis Turnaround Time			Sampler:
7349717080 Phone	☐ CALENDAR DAYS ☒ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below 3 days			Walk-in Client:
Project Name: DTE CCR RRLF 1AS23 Verification	☐ 2 weeks			Lab Sampling:
Site: RRLF	☐ 1 week			
P O # 199485	☐ 2 days			Job / SDG No.:
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	TDS (EPA 160.1/SM2540C)	Sulfate (EPA 375.2/9056A_28D)	Sample Specific Notes:
MW-16-01	6/14/23	1200	G	GW	1	N	N	X		
MW-16-05	〃	1115	G	GW	1	N	N		X	
DUP-01	〃	—	G	GW	1	N	N	X		
DUP-02	〃	—	G	GW	1	N	N		X	

240-187147 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____		Therm ID No.: _____
Relinquished by:	Company: TRC	Date/Time: 6/15/23 1515	Received by:	Company:	Date/Time: 6/15/23 1515
Relinquished by:	Company: TRC	Date/Time: 6-15-23 1515	Received by:	Company: EEN	Date/Time: 6/15/23 1515
Relinquished by:	Company: EEN	Date/Time: 6/15/23 1515	Received in Laboratory by:	Company: EET NC	Date/Time: 6-16-23 800

6/26/2023

Eurofins - Canton Sample Receipt Form/Narrative **Login # :** 167147
Barberton Facility

Client TRC Site Name _____ Cooler unpacked by: Nancy Rayer

Cooler Received on 6-16-23 Opened on 6-16-23

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

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

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

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

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 22 (CF +0.0 °C) Observed Cooler Temp. 2.0 °C Corrected Cooler Temp. 2.0 °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# 10BDH4321
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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 10/31/2023 7:02:29 PM

JOB DESCRIPTION

CCR DTE RRLF HMP Uppermost Aquifer

JOB NUMBER

240-193874-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization

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10/31/2023 7:02:29 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

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: 240-193874-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative
240-193874-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/19/2023 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.1°C

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

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

Method Summary

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

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

Protocol References:

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

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

Laboratory References:

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

Sample Summary

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-193874-1	MW-16-01	Water	10/16/23 11:14	10/19/23 08:00
240-193874-2	MW-16-02	Water	10/16/23 12:00	10/19/23 08:00
240-193874-3	MW-16-03	Water	10/16/23 13:15	10/19/23 08:00
240-193874-4	DUP-01	Water	10/16/23 00:00	10/19/23 08:00
240-193874-5	EB-01	Water	10/16/23 14:00	10/19/23 08:00
240-193874-6	MW-16-05	Water	10/17/23 10:38	10/19/23 08:00
240-193874-7	MW-16-04	Water	10/17/23 11:37	10/19/23 08:00
240-193874-8	MW-16-06	Water	10/17/23 12:35	10/19/23 08:00
240-193874-9	MW-16-07	Water	10/17/23 14:16	10/19/23 08:00

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-01 Lab Sample ID: 240-193874-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	710		100		ug/L	1		6010D	Total Recoverable
Calcium	100000		1000		ug/L	1		6020B	Total Recoverable
Iron	1500		100		ug/L	1		6020B	Total Recoverable
Chloride	590		10		mg/L	10		9056A	Total/NA
Fluoride	0.78		0.050		mg/L	1		9056A	Total/NA
Sulfate	340		10		mg/L	10		9056A	Total/NA
Total Dissolved Solids	1400		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02 Lab Sample ID: 240-193874-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100		ug/L	1		6010D	Total Recoverable
Calcium	21000		1000		ug/L	1		6020B	Total Recoverable
Iron	720		100		ug/L	1		6020B	Total Recoverable
Chloride	670		10		mg/L	10		9056A	Total/NA
Fluoride	2.1		0.050		mg/L	1		9056A	Total/NA
Total Dissolved Solids	1400		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03 Lab Sample ID: 240-193874-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100		ug/L	1		6010D	Total Recoverable
Calcium	18000		1000		ug/L	1		6020B	Total Recoverable
Iron	520		100		ug/L	1		6020B	Total Recoverable
Chloride	530		5.0		mg/L	5		9056A	Total/NA
Fluoride	2.2		0.050		mg/L	1		9056A	Total/NA
Total Dissolved Solids	970		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01 Lab Sample ID: 240-193874-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100		ug/L	1		6010D	Total Recoverable
Calcium	19000		1000		ug/L	1		6020B	Total Recoverable
Iron	540		100		ug/L	1		6020B	Total Recoverable
Chloride	530		5.0		mg/L	5		9056A	Total/NA
Fluoride	2.3		0.050		mg/L	1		9056A	Total/NA
Total Dissolved Solids	960		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: EB-01 Lab Sample ID: 240-193874-5

No Detections.

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-05 Lab Sample ID: 240-193874-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1200		100		ug/L	1		6010D	Total Recoverable
Calcium	21000		1000		ug/L	1		6020B	Total Recoverable
Iron	190		100		ug/L	1		6020B	Total Recoverable
Chloride	520		5.0		mg/L	5		9056A	Total/NA
Fluoride	1.8		0.050		mg/L	1		9056A	Total/NA
Sulfate	30		1.0		mg/L	1		9056A	Total/NA
Total Dissolved Solids	1100		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-04 Lab Sample ID: 240-193874-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100		ug/L	1		6010D	Total Recoverable
Calcium	63000		1000		ug/L	1		6020B	Total Recoverable
Iron	1400		100		ug/L	1		6020B	Total Recoverable
Chloride	3300		25		mg/L	25		9056A	Total/NA
Fluoride	1.5		0.25		mg/L	5		9056A	Total/NA
Total Dissolved Solids	5000		50		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-06 Lab Sample ID: 240-193874-8

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100		ug/L	1		6010D	Total Recoverable
Calcium	78000		1000		ug/L	1		6020B	Total Recoverable
Iron	720		100		ug/L	1		6020B	Total Recoverable
Chloride	420		10		mg/L	10		9056A	Total/NA
Fluoride	1.2		0.050		mg/L	1		9056A	Total/NA
Sulfate	390		10		mg/L	10		9056A	Total/NA
Total Dissolved Solids	1300		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-07 Lab Sample ID: 240-193874-9

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	630		100		ug/L	1		6010D	Total Recoverable
Calcium	51000		1000		ug/L	1		6020B	Total Recoverable
Iron	5500		100		ug/L	1		6020B	Total Recoverable
Chloride	200		1.0		mg/L	1		9056A	Total/NA
Fluoride	0.99		0.050		mg/L	1		9056A	Total/NA
Sulfate	15		1.0		mg/L	1		9056A	Total/NA
Total Dissolved Solids	520		10		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: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-01 Lab Sample ID: 240-193874-1

Date Collected: 10/16/23 11:14 **Matrix: Water**
Date Received: 10/19/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	710		100		ug/L		10/21/23 08:00	10/23/23 19:11	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	100000		1000		ug/L		10/21/23 08:00	10/23/23 14:39	1
Iron	1500		100		ug/L		10/21/23 08:00	10/23/23 14:39	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	590		10		mg/L			10/25/23 05:45	10
Fluoride (SW846 9056A)	0.78		0.050		mg/L			10/25/23 04:45	1
Sulfate (SW846 9056A)	340		10		mg/L			10/25/23 05:45	10
Total Dissolved Solids (SM 2540C)	1400		20		mg/L			10/23/23 11:13	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-02 Lab Sample ID: 240-193874-2

Date Collected: 10/16/23 12:00 **Matrix: Water**
Date Received: 10/19/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100		ug/L		10/21/23 08:00	10/23/23 19:24	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	21000		1000		ug/L		10/21/23 08:00	10/23/23 14:41	1
Iron	720		100		ug/L		10/21/23 08:00	10/23/23 14:41	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	670		10		mg/L			10/25/23 06:26	10
Fluoride (SW846 9056A)	2.1		0.050		mg/L			10/25/23 06:05	1
Sulfate (SW846 9056A)	1.0	U	1.0		mg/L			10/25/23 06:05	1
Total Dissolved Solids (SM 2540C)	1400		20		mg/L			10/23/23 11:13	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-03 Lab Sample ID: 240-193874-3

Date Collected: 10/16/23 13:15 **Matrix: Water**
Date Received: 10/19/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100		ug/L		10/21/23 08:00	10/23/23 19:29	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	18000		1000		ug/L		10/21/23 08:00	10/23/23 14:44	1
Iron	520		100		ug/L		10/21/23 08:00	10/23/23 14:44	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	530		5.0		mg/L			10/24/23 23:43	5
Fluoride (SW846 9056A)	2.2		0.050		mg/L			10/24/23 23:23	1
Sulfate (SW846 9056A)	1.0	U	1.0		mg/L			10/24/23 23:23	1
Total Dissolved Solids (SM 2540C)	970		20		mg/L			10/23/23 11:13	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: DUP-01 — Lab Sample ID: 240-193874-4

Date Collected: 10/16/23 00:00 — **Matrix: Water**
Date Received: 10/19/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100		ug/L		10/21/23 08:00	10/23/23 19:34	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	19000		1000		ug/L		10/21/23 08:00	10/23/23 14:46	1
Iron	540		100		ug/L		10/21/23 08:00	10/23/23 14:46	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	530		5.0		mg/L			10/25/23 00:23	5
Fluoride (SW846 9056A)	2.3		0.050		mg/L			10/25/23 00:03	1
Sulfate (SW846 9056A)	1.0	U	1.0		mg/L			10/25/23 00:03	1
Total Dissolved Solids (SM 2540C)	960		20		mg/L			10/23/23 09:49	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: EB-01 Lab Sample ID: 240-193874-5

Date Collected: 10/16/23 14:00 **Matrix: Water**
Date Received: 10/19/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100		ug/L		10/21/23 08:00	10/23/23 19:38	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000		ug/L		10/21/23 08:00	10/23/23 14:54	1
Iron	100	U	100		ug/L		10/21/23 08:00	10/23/23 14:54	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	1.0	U	1.0		mg/L			10/24/23 22:22	1
Fluoride (SW846 9056A)	0.050	U	0.050		mg/L			10/24/23 22:22	1
Sulfate (SW846 9056A)	1.0	U	1.0		mg/L			10/24/23 22:22	1
Total Dissolved Solids (SM 2540C)	10	U	10		mg/L			10/23/23 09:49	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-05 Lab Sample ID: 240-193874-6

Date Collected: 10/17/23 10:38 **Matrix: Water**
Date Received: 10/19/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1200		100		ug/L		10/21/23 08:00	10/23/23 19:43	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	21000		1000		ug/L		10/21/23 08:00	10/23/23 14:56	1
Iron	190		100		ug/L		10/21/23 08:00	10/23/23 14:56	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	520		5.0		mg/L			10/25/23 15:47	5
Fluoride (SW846 9056A)	1.8		0.050		mg/L			10/25/23 14:42	1
Sulfate (SW846 9056A)	30		1.0		mg/L			10/25/23 14:42	1
Total Dissolved Solids (SM 2540C)	1100		20		mg/L			10/23/23 11:13	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-04 Lab Sample ID: 240-193874-7

Date Collected: 10/17/23 11:37 **Matrix: Water**
Date Received: 10/19/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100		ug/L		10/21/23 08:00	10/23/23 19:47	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	63000		1000		ug/L		10/21/23 08:00	10/23/23 14:59	1
Iron	1400		100		ug/L		10/21/23 08:00	10/23/23 14:59	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	3300		25		mg/L			10/26/23 15:28	25
Fluoride (SW846 9056A)	1.5		0.25		mg/L			10/26/23 15:08	5
Sulfate (SW846 9056A)	5.0	U	5.0		mg/L			10/26/23 15:08	5
Total Dissolved Solids (SM 2540C)	5000		50		mg/L			10/23/23 11:13	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-06 Lab Sample ID: 240-193874-8

Date Collected: 10/17/23 12:35 **Matrix: Water**
Date Received: 10/19/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100		ug/L		10/21/23 08:00	10/23/23 19:52	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	78000		1000		ug/L		10/21/23 08:00	10/23/23 15:01	1
Iron	720		100		ug/L		10/21/23 08:00	10/23/23 15:01	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	420		10		mg/L			10/26/23 05:52	10
Fluoride (SW846 9056A)	1.2		0.050		mg/L			10/26/23 05:30	1
Sulfate (SW846 9056A)	390		10		mg/L			10/26/23 05:52	10
Total Dissolved Solids (SM 2540C)	1300		20		mg/L			10/24/23 09:58	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-07 Lab Sample ID: 240-193874-9

Date Collected: 10/17/23 14:16 **Matrix: Water**
Date Received: 10/19/23 08:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	630		100		ug/L		10/21/23 08:00	10/23/23 19:56	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	51000		1000		ug/L		10/21/23 08:00	10/23/23 15:04	1
Iron	5500		100		ug/L		10/21/23 08:00	10/23/23 15:04	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	200		1.0		mg/L			10/25/23 13:58	1
Fluoride (SW846 9056A)	0.99		0.050		mg/L			10/25/23 13:58	1
Sulfate (SW846 9056A)	15		1.0		mg/L			10/25/23 13:58	1
Total Dissolved Solids (SM 2540C)	520		10		mg/L			10/24/23 09:58	1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-591656/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 591955 — **Prep Batch: 591656**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100		ug/L		10/21/23 08:00	10/23/23 17:51	1

Lab Sample ID: LCS 240-591656/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 591955 — **Prep Batch: 591656**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			1000	987		ug/L		99	80 - 120		

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 240-591656/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 592010 — **Prep Batch: 591656**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000		ug/L		10/21/23 08:00	10/23/23 13:53	1
Iron	100	U	100		ug/L		10/21/23 08:00	10/23/23 13:53	1

Lab Sample ID: LCS 240-591656/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 592010 — **Prep Batch: 591656**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium			25000	23600		ug/L		94	80 - 120		
Iron			5000	4930		ug/L		99	80 - 120		

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-592036/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 592036

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			10/24/23 21:42	1
Fluoride	0.050	U	0.050		mg/L			10/24/23 21:42	1
Sulfate	1.0	U	1.0		mg/L			10/24/23 21:42	1

Lab Sample ID: LCS 240-592036/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 592036

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	51.5		mg/L		103	90 - 110		
Fluoride			2.50	2.70		mg/L		108	90 - 110		
Sulfate			50.0	54.3		mg/L		109	90 - 110		

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

Lab Sample ID: 240-193874-5 MS — **Client Sample ID: EB-01**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 592036

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	1.0	U	50.0	53.2		mg/L		106	80 - 120
Fluoride	0.050	U	2.50	2.79		mg/L		111	80 - 120
Sulfate	1.0	U	50.0	55.2		mg/L		110	80 - 120

Lab Sample ID: 240-193874-5 MSD — **Client Sample ID: EB-01**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 592036

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1.0	U	50.0	51.7		mg/L		103	80 - 120	3	15
Fluoride	0.050	U	2.50	2.70		mg/L		108	80 - 120	3	15
Sulfate	1.0	U	50.0	53.7		mg/L		107	80 - 120	3	15

Lab Sample ID: MB 240-592107/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 592107

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			10/26/23 09:05	1
Fluoride	0.050	U	0.050		mg/L			10/26/23 09:05	1
Sulfate	1.0	U	1.0		mg/L			10/26/23 09:05	1

Lab Sample ID: LCS 240-592107/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 592107

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride			50.0	51.9		mg/L		104	90 - 110
Fluoride			2.50	2.75		mg/L		110	90 - 110
Sulfate			50.0	54.6		mg/L		109	90 - 110

Lab Sample ID: MB 240-592110/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 592110

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			10/25/23 11:26	1
Fluoride	0.050	U	0.050		mg/L			10/25/23 11:26	1
Sulfate	1.0	U	1.0		mg/L			10/25/23 11:26	1

Lab Sample ID: LCS 240-592110/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 592110

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride			50.0	49.0		mg/L		98	90 - 110
Fluoride			2.50	2.56		mg/L		102	90 - 110
Sulfate			50.0	50.2		mg/L		100	90 - 110

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

Lab Sample ID: MB 240-591830/1
Matrix: Water
Analysis Batch: 591830

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			10/23/23 09:49	1

Lab Sample ID: LCS 240-591830/2
Matrix: Water
Analysis Batch: 591830

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			336	307		mg/L		91	80 - 120		

Lab Sample ID: MB 240-591849/1
Matrix: Water
Analysis Batch: 591849

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			10/23/23 11:13	1
Total Dissolved Solids	10	U	10		mg/L			10/23/23 11:13	1

Lab Sample ID: LCS 240-591849/2
Matrix: Water
Analysis Batch: 591849

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			336	320		mg/L		95	80 - 120		
Total Dissolved Solids			336	320		mg/L		95	80 - 120		

Lab Sample ID: MB 240-592018/1
Matrix: Water
Analysis Batch: 592018

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			10/24/23 09:58	1
Total Dissolved Solids	10	U	10		mg/L			10/24/23 09:58	1

Lab Sample ID: LCS 240-592018/2
Matrix: Water
Analysis Batch: 592018

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			336	312		mg/L		93	80 - 120		
Total Dissolved Solids			336	312		mg/L		93	80 - 120		

Lab Sample ID: 240-193874-9 DU
Matrix: Water
Analysis Batch: 592018

Client Sample ID: MW-16-07
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	520			481		mg/L				7	20
Total Dissolved Solids	520			481		mg/L				7	20

Metals

Prep Batch: 591656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-193874-1	MW-16-01	Total Recoverable	Water	3005A	
240-193874-2	MW-16-02	Total Recoverable	Water	3005A	
240-193874-3	MW-16-03	Total Recoverable	Water	3005A	
240-193874-4	DUP-01	Total Recoverable	Water	3005A	
240-193874-5	EB-01	Total Recoverable	Water	3005A	
240-193874-6	MW-16-05	Total Recoverable	Water	3005A	
240-193874-7	MW-16-04	Total Recoverable	Water	3005A	
240-193874-8	MW-16-06	Total Recoverable	Water	3005A	
240-193874-9	MW-16-07	Total Recoverable	Water	3005A	
MB 240-591656/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-591656/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-591656/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 591955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-193874-1	MW-16-01	Total Recoverable	Water	6010D	591656
240-193874-2	MW-16-02	Total Recoverable	Water	6010D	591656
240-193874-3	MW-16-03	Total Recoverable	Water	6010D	591656
240-193874-4	DUP-01	Total Recoverable	Water	6010D	591656
240-193874-5	EB-01	Total Recoverable	Water	6010D	591656
240-193874-6	MW-16-05	Total Recoverable	Water	6010D	591656
240-193874-7	MW-16-04	Total Recoverable	Water	6010D	591656
240-193874-8	MW-16-06	Total Recoverable	Water	6010D	591656
240-193874-9	MW-16-07	Total Recoverable	Water	6010D	591656
MB 240-591656/1-A	Method Blank	Total Recoverable	Water	6010D	591656
LCS 240-591656/2-A	Lab Control Sample	Total Recoverable	Water	6010D	591656

Analysis Batch: 592010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-193874-1	MW-16-01	Total Recoverable	Water	6020B	591656
240-193874-2	MW-16-02	Total Recoverable	Water	6020B	591656
240-193874-3	MW-16-03	Total Recoverable	Water	6020B	591656
240-193874-4	DUP-01	Total Recoverable	Water	6020B	591656
240-193874-5	EB-01	Total Recoverable	Water	6020B	591656
240-193874-6	MW-16-05	Total Recoverable	Water	6020B	591656
240-193874-7	MW-16-04	Total Recoverable	Water	6020B	591656
240-193874-8	MW-16-06	Total Recoverable	Water	6020B	591656
240-193874-9	MW-16-07	Total Recoverable	Water	6020B	591656
MB 240-591656/1-A	Method Blank	Total Recoverable	Water	6020B	591656
LCS 240-591656/3-A	Lab Control Sample	Total Recoverable	Water	6020B	591656

General Chemistry

Analysis Batch: 591830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-193874-4	DUP-01	Total/NA	Water	SM 2540C	
240-193874-5	EB-01	Total/NA	Water	SM 2540C	
MB 240-591830/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-591830/2	Lab Control Sample	Total/NA	Water	SM 2540C	

General Chemistry

Analysis Batch: 591849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-193874-1	MW-16-01	Total/NA	Water	SM 2540C	
240-193874-2	MW-16-02	Total/NA	Water	SM 2540C	
240-193874-3	MW-16-03	Total/NA	Water	SM 2540C	
240-193874-6	MW-16-05	Total/NA	Water	SM 2540C	
240-193874-7	MW-16-04	Total/NA	Water	SM 2540C	
MB 240-591849/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-591849/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 592018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-193874-8	MW-16-06	Total/NA	Water	SM 2540C	
240-193874-9	MW-16-07	Total/NA	Water	SM 2540C	
MB 240-592018/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-592018/2	Lab Control Sample	Total/NA	Water	SM 2540C	
240-193874-9 DU	MW-16-07	Total/NA	Water	SM 2540C	

Analysis Batch: 592036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-193874-1	MW-16-01	Total/NA	Water	9056A	
240-193874-1	MW-16-01	Total/NA	Water	9056A	
240-193874-2	MW-16-02	Total/NA	Water	9056A	
240-193874-2	MW-16-02	Total/NA	Water	9056A	
240-193874-3	MW-16-03	Total/NA	Water	9056A	
240-193874-3	MW-16-03	Total/NA	Water	9056A	
240-193874-4	DUP-01	Total/NA	Water	9056A	
240-193874-4	DUP-01	Total/NA	Water	9056A	
240-193874-5	EB-01	Total/NA	Water	9056A	
MB 240-592036/3	Method Blank	Total/NA	Water	9056A	
LCS 240-592036/4	Lab Control Sample	Total/NA	Water	9056A	
240-193874-5 MS	EB-01	Total/NA	Water	9056A	
240-193874-5 MSD	EB-01	Total/NA	Water	9056A	

Analysis Batch: 592107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-193874-7	MW-16-04	Total/NA	Water	9056A	
240-193874-7	MW-16-04	Total/NA	Water	9056A	
MB 240-592107/3	Method Blank	Total/NA	Water	9056A	
LCS 240-592107/4	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 592110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-193874-6	MW-16-05	Total/NA	Water	9056A	
240-193874-6	MW-16-05	Total/NA	Water	9056A	
240-193874-8	MW-16-06	Total/NA	Water	9056A	
240-193874-8	MW-16-06	Total/NA	Water	9056A	
240-193874-9	MW-16-07	Total/NA	Water	9056A	
MB 240-592110/3	Method Blank	Total/NA	Water	9056A	
LCS 240-592110/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-01 — Lab Sample ID: 240-193874-1

Date Collected: 10/16/23 11:14 — **Matrix: Water**
Date Received: 10/19/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6010D		1	591955	KLC	EET CLE	10/23/23 19:11
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6020B		1	592010	RKT	EET CLE	10/23/23 14:39
Total/NA	Analysis	9056A		1	592036	JWW	EET CLE	10/25/23 04:45
Total/NA	Analysis	9056A		10	592036	JWW	EET CLE	10/25/23 05:45
Total/NA	Analysis	SM 2540C		1	591849	QUY8	EET CLE	10/23/23 11:13

Client Sample ID: MW-16-02 — Lab Sample ID: 240-193874-2

Date Collected: 10/16/23 12:00 — **Matrix: Water**
Date Received: 10/19/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6010D		1	591955	KLC	EET CLE	10/23/23 19:24
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6020B		1	592010	RKT	EET CLE	10/23/23 14:41
Total/NA	Analysis	9056A		1	592036	JWW	EET CLE	10/25/23 06:05
Total/NA	Analysis	9056A		10	592036	JWW	EET CLE	10/25/23 06:26
Total/NA	Analysis	SM 2540C		1	591849	QUY8	EET CLE	10/23/23 11:13

Client Sample ID: MW-16-03 — Lab Sample ID: 240-193874-3

Date Collected: 10/16/23 13:15 — **Matrix: Water**
Date Received: 10/19/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6010D		1	591955	KLC	EET CLE	10/23/23 19:29
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6020B		1	592010	RKT	EET CLE	10/23/23 14:44
Total/NA	Analysis	9056A		1	592036	JWW	EET CLE	10/24/23 23:23
Total/NA	Analysis	9056A		5	592036	JWW	EET CLE	10/24/23 23:43
Total/NA	Analysis	SM 2540C		1	591849	QUY8	EET CLE	10/23/23 11:13

Client Sample ID: DUP-01 — Lab Sample ID: 240-193874-4

Date Collected: 10/16/23 00:00 — **Matrix: Water**
Date Received: 10/19/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6010D		1	591955	KLC	EET CLE	10/23/23 19:34
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6020B		1	592010	RKT	EET CLE	10/23/23 14:46
Total/NA	Analysis	9056A		1	592036	JWW	EET CLE	10/25/23 00:03

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: DUP-01 — Lab Sample ID: 240-193874-4

Date Collected: 10/16/23 00:00 — **Matrix: Water**
Date Received: 10/19/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	592036	JWW	EET CLE	10/25/23 00:23
Total/NA	Analysis	SM 2540C		1	591830	QUY8	EET CLE	10/23/23 09:49

Client Sample ID: EB-01 — Lab Sample ID: 240-193874-5

Date Collected: 10/16/23 14:00 — **Matrix: Water**
Date Received: 10/19/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6010D		1	591955	KLC	EET CLE	10/23/23 19:38
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6020B		1	592010	RKT	EET CLE	10/23/23 14:54
Total/NA	Analysis	9056A		1	592036	JWW	EET CLE	10/24/23 22:22
Total/NA	Analysis	SM 2540C		1	591830	QUY8	EET CLE	10/23/23 09:49

Client Sample ID: MW-16-05 — Lab Sample ID: 240-193874-6

Date Collected: 10/17/23 10:38 — **Matrix: Water**
Date Received: 10/19/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6010D		1	591955	KLC	EET CLE	10/23/23 19:43
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6020B		1	592010	RKT	EET CLE	10/23/23 14:56
Total/NA	Analysis	9056A		1	592110	JWW	EET CLE	10/25/23 14:42
Total/NA	Analysis	9056A		5	592110	JWW	EET CLE	10/25/23 15:47
Total/NA	Analysis	SM 2540C		1	591849	QUY8	EET CLE	10/23/23 11:13

Client Sample ID: MW-16-04 — Lab Sample ID: 240-193874-7

Date Collected: 10/17/23 11:37 — **Matrix: Water**
Date Received: 10/19/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6010D		1	591955	KLC	EET CLE	10/23/23 19:47
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6020B		1	592010	RKT	EET CLE	10/23/23 14:59
Total/NA	Analysis	9056A		5	592107	JWW	EET CLE	10/26/23 15:08
Total/NA	Analysis	9056A		25	592107	JWW	EET CLE	10/26/23 15:28
Total/NA	Analysis	SM 2540C		1	591849	QUY8	EET CLE	10/23/23 11:13

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-06 Lab Sample ID: 240-193874-8

Date Collected: 10/17/23 12:35 **Matrix: Water**
Date Received: 10/19/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6010D		1	591955	KLC	EET CLE	10/23/23 19:52
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6020B		1	592010	RKT	EET CLE	10/23/23 15:01
Total/NA	Analysis	9056A		1	592110	JWW	EET CLE	10/26/23 05:30
Total/NA	Analysis	9056A		10	592110	JWW	EET CLE	10/26/23 05:52
Total/NA	Analysis	SM 2540C		1	592018	QUY8	EET CLE	10/24/23 09:58

Client Sample ID: MW-16-07 Lab Sample ID: 240-193874-9

Date Collected: 10/17/23 14:16 **Matrix: Water**
Date Received: 10/19/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6010D		1	591955	KLC	EET CLE	10/23/23 19:56
Total Recoverable	Prep	3005A			591656	S4FJ	EET CLE	10/21/23 08:00
Total Recoverable	Analysis	6020B		1	592010	RKT	EET CLE	10/23/23 15:04
Total/NA	Analysis	9056A		1	592110	JWW	EET CLE	10/25/23 13:58
Total/NA	Analysis	SM 2540C		1	592018	QUY8	EET CLE	10/24/23 09:58

Laboratory References:

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

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-193874-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

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

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

MICHIGAN 190

Chain of Custody Record

02/04

MICHIGAN 190

eurofins | Environment Testing

Client Information	Sampler: Jake Krenz	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-106957-31929.1
Client Contact: Mr. Vincent Buening	Phone:	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page of
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 #: 199485			
Email: vbuening@trccompanies.com	WO #: 518728.0000			
Project Name: CCR DTE RRLF HMP Uppermost Aquifer	Project #: 24016807			
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)	6010 Bo, 6020 Ca, Fe	2540C_Calcd - TDS	9056A_28D - Chloride, Fluoride and Sulfate	Dissolved Bo, Ca, Fe	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N			
MW-16-01	10-16-23	1114	G	Water	N	N	X	X	X		3	
MW-16-02		1200	G	Water			X	X	X			
MW-16-03		1315	G	Water			X	X	X			
DUP-01		—	G	Water			X	X	X			
EB-01		1400	G	Water			X	X	X			
MW-16-05	10-17-23	1038	G	Water			X	X	X			
MW-16-04		1137	G	Water			X	X	X			
MW-16-06		1235	G	Water			X	X	X		4	
MW-16-07		1416	G	Water			X	X	X	X		
				Water								

240-193874 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		10-18-23 / 1304	TRC		10/18/23 1304	ETA
2		10/18/23 1510	ETA		10/19/23 0820	ETC
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 01/16/2019

10/31/2023

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :** 193874
Barberton Facility

Client TRC Site Name _____ Cooler unpacked by: Rachelle Haidet

Cooler Received on 10/9/23 Opened on 10/9/23

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

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

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

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

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 22 (CF -0.1 °C) Observed Cooler Temp. 0.2 °C Corrected Cooler Temp. 0.1 °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# HC316719
14. Were VOAs on the COC?	Yes (No)
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes No (NA)
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes (No)
17. Was a LL Hg or Me Hg trip blank present? _____	Yes (No)

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

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

Concerning _____

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

Samples processed by:

19. SAMPLE CONDITION

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

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

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-01	240-193874-B-1	Plastic 250ml - with Nitric Acid	<2			
MW-16-02	240-193874-B-2	Plastic 250ml - with Nitric Acid	<2			
MW-16-03	240-193874-B-3	Plastic 250ml - with Nitric Acid	<2			
DUP-01	240-193874-B-4	Plastic 250ml - with Nitric Acid	<2			
EB-01	240-193874-B-5	Plastic 250ml - with Nitric Acid	<2			
MW-16-05	240-193874-B-6	Plastic 250ml - with Nitric Acid	<2			
MW-16-04	240-193874-B-7	Plastic 250ml - with Nitric Acid	<2			
MW-16-06	240-193874-B-8	Plastic 250ml - with Nitric Acid	<2			
MW-16-07	240-193874-B-9	Plastic 250ml - with Nitric Acid	<2			
MW-16-07	240-193874-C-9	Plastic 250ml - w/nitric - dis	<2			

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 12/26/2023 6:04:53 PM

JOB DESCRIPTION

CCR DTE Range Road Landfill

JOB NUMBER

240-196741-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization

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12/26/2023 6:04:53 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-196741-1
Project/Site: CCR DTE Range Road Landfill

Qualifiers

General Chemistry

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

Glossary

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

Job ID: 240-196741-1 Eurofins Cleveland

Job Narrative
240-196741-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/9/2023 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.2°C

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

Method Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-196741-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CLE
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CLE

Protocol References:

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

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

Laboratory References:

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

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-196741-1
Project/Site: CCR DTE Range Road Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-196741-1	MW-16-01	Water	12/07/23 08:58	12/09/23 08:00
240-196741-2	MW-16-05	Water	12/07/23 10:48	12/09/23 08:00
240-196741-3	DUP-01	Water	12/07/23 00:00	12/09/23 08:00
240-196741-4	DUP-02	Water	12/07/23 00:00	12/09/23 08:00

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-196741-1

Client Sample ID: MW-16-01 — Lab Sample ID: 240-196741-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	1400		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-05 — Lab Sample ID: 240-196741-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Sulfate	32		10		mg/L	10		9056A	Total/NA

Client Sample ID: DUP-01 — Lab Sample ID: 240-196741-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	1400		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-02 — Lab Sample ID: 240-196741-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Sulfate	32		10		mg/L	10		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client: TRC Environmental Corporation.
Job ID: 240-196741-1
Project/Site: CCR DTE Range Road Landfill

Client Sample ID: MW-16-01
Lab Sample ID: 240-196741-1
Date Collected: 12/07/23 08:58
Matrix: Water
Date Received: 12/09/23 08:00

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1400		20		mg/L			12/14/23 09:39	1

Client: TRC Environmental Corporation.
Job ID: 240-196741-1
Project/Site: CCR DTE Range Road Landfill

Client Sample ID: MW-16-05
Lab Sample ID: 240-196741-2
Date Collected: 12/07/23 10:48
Matrix: Water
Date Received: 12/09/23 08:00

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate (SW846 9056A)	32		10		mg/L			12/22/23 07:17	10

Client: TRC Environmental Corporation.
Job ID: 240-196741-1
Project/Site: CCR DTE Range Road Landfill

Client Sample ID: DUP-01
Lab Sample ID: 240-196741-3
Date Collected: 12/07/23 00:00
Matrix: Water
Date Received: 12/09/23 08:00

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1400		20		mg/L			12/14/23 11:30	1

Client: TRC Environmental Corporation.
Job ID: 240-196741-1
Project/Site: CCR DTE Range Road Landfill

Client Sample ID: DUP-02
Lab Sample ID: 240-196741-4
Date Collected: 12/07/23 00:00
Matrix: Water
Date Received: 12/09/23 08:00

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate (SW846 9056A)	32		10		mg/L			12/22/23 08:38	10

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-598454/3
Matrix: Water
Analysis Batch: 598454

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.0	U	1.0		mg/L			12/22/23 04:16	1

Lab Sample ID: LCS 240-598454/4
Matrix: Water
Analysis Batch: 598454

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			50.0	53.8		mg/L		108	90 - 110		

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

Lab Sample ID: MB 240-597605/1
Matrix: Water
Analysis Batch: 597605

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			12/14/23 09:39	1

Lab Sample ID: LCS 240-597605/2
Matrix: Water
Analysis Batch: 597605

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			564	536		mg/L		95	80 - 120		

Lab Sample ID: MB 240-597637/1
Matrix: Water
Analysis Batch: 597637

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			12/14/23 11:30	1

Lab Sample ID: LCS 240-597637/2
Matrix: Water
Analysis Batch: 597637

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			564	538		mg/L		95	80 - 120		

QC Association Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-196741-1

General Chemistry

Analysis Batch: 597605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-196741-1	MW-16-01	Total/NA	Water	SM 2540C	
MB 240-597605/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-597605/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 597637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-196741-3	DUP-01	Total/NA	Water	SM 2540C	
MB 240-597637/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-597637/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 598454

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-196741-2	MW-16-05	Total/NA	Water	9056A	
240-196741-4	DUP-02	Total/NA	Water	9056A	
MB 240-598454/3	Method Blank	Total/NA	Water	9056A	
LCS 240-598454/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation.
Job ID: 240-196741-1
Project/Site: CCR DTE Range Road Landfill

Client Sample ID: MW-16-01
Lab Sample ID: 240-196741-1
Date Collected: 12/07/23 08:58
Matrix: Water
Date Received: 12/09/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2540C		1	597605	C5SV	EET CLE	12/14/23 09:39

Client Sample ID: MW-16-05
Lab Sample ID: 240-196741-2
Date Collected: 12/07/23 10:48
Matrix: Water
Date Received: 12/09/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	598454	JWW	EET CLE	12/22/23 07:17

Client Sample ID: DUP-01
Lab Sample ID: 240-196741-3
Date Collected: 12/07/23 00:00
Matrix: Water
Date Received: 12/09/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2540C		1	597637	C5SV	EET CLE	12/14/23 11:30

Client Sample ID: DUP-02
Lab Sample ID: 240-196741-4
Date Collected: 12/07/23 00:00
Matrix: Water
Date Received: 12/09/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	598454	JWW	EET CLE	12/22/23 08:38

Laboratory References:

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

Accreditation/Certification Summary

Client: TRC Environmental Corporation.
Job ID: 240-196741-1
Project/Site: CCR DTE Range Road Landfill

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

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

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

MICHIGAN 190

Chain of Custody Record

2-1 | 3-2 MICHIGAN 190

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Client Information	Sampler:	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-114844-40725.1
Client Contact: Mr. Vincent Buening	Phone:	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: TRC Environmental Corporation.	PWSID:			Job #:
Address: 1540 Eisenhower Place	Due Date Requested:			
City: Ann Arbor	TAT Requested (days):			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: 199485			
Email: vbuening@trccompanies.com	WO #: 518728.0000			
Project Name: CCR DTE Range Road Landfill	Project #: 24016807			
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	9056A_28D - Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N		
MW-16-01	12-7-23	0858	G	Water	N	N	X			
MW-16-05	↓	1048	G	Water	N	N		X		
DUP-01		—	G	Water	N	N	X			
DUP-02	↓	—	G	Water	N	N		X		

240-196741 Chain of Custody

MICHIGAN 190

Possible Hazard Identification

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

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

Special Instructions/QC Requirements:

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

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	12-8-23/0923	TRC		12/8/23 9130	ETA
Relinquished by:	12/8/23 9130	ETA		12-9-23 8am	
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

12/26/2023

Eurofins – Cleveland Sample Receipt Form/Narrative
Barberton Facility

Login # :_____

Client TRC Site Name

Cooler unpacked by: M. Koll

Cooler Received on 12.9.23 Opened on 12.9.23

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

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

Eurofins Cooler # 22 Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 22 (CF +0.1 °C) Observed Cooler Temp. 2.1 °C Corrected Cooler Temp. 3.2 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity_____	Yes No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes No
-Were tamper/custody seals intact and uncompromised?	Yes No NA
3. Shippers' packing slip attached to the cooler(s)?	Yes No
4. Did custody papers accompany the sample(s)?	Yes No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes No
7. Did all bottles arrive in good condition (Unbroken)?	Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?	
10. Were correct bottle(s) used for the test(s) indicated?	Yes No
11. Sufficient quantity received to perform indicated analyses?	Yes No
12. Are these work share samples and all listed on the COC?	Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.	
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes No NA pH Strip Lot# HC316719
14. Were VOAs on the COC?	Yes No
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____	Yes No
17. Was a LL Hg or Me Hg trip blank present? _____	Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

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

Concerning _____

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

Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 1/10/2024 6:42:19 PM

JOB DESCRIPTION

CCR DTE Range Road Landfill

JOB NUMBER

240-196741-2

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization

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1/10/2024 6:42:19 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-196741-2
Project/Site: CCR DTE Range Road Landfill

Qualifiers

Metals

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: 240-196741-2 Eurofins Cleveland

Job Narrative
240-196741-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/9/2023 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.2°C

Metals
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: 240-196741-2
Project/Site: CCR DTE Range Road Landfill

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CLE

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-196741-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-196741-2	MW-16-05	Water	12/07/23 10:48	12/09/23 08:00

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-196741-2

Client Sample ID: MW-16-05

Lab Sample ID: 240-196741-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Calcium	20000		1000		ug/L	1		6020B	Total Recoverable
Manganese	7.8		5.0		ug/L	1		6020B	Total Recoverable
Molybdenum	57		5.0		ug/L	1		6020B	Total Recoverable
Lithium	22		8.0		ug/L	1		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-196741-2

Client Sample ID: MW-16-05
Date Collected: 12/07/23 10:48
Date Received: 12/09/23 08:00

Lab Sample ID: 240-196741-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**20000**		1000		ug/L		01/08/24 14:00	01/09/24 14:42	1
Iron	100	U	100		ug/L		01/08/24 14:00	01/09/24 14:42	1
Manganese	**7.8**		5.0		ug/L		01/08/24 14:00	01/09/24 14:42	1
Molybdenum	**57**		5.0		ug/L		01/08/24 14:00	01/09/24 14:42	1
Lithium	**22**		8.0		ug/L		01/08/24 14:00	01/09/24 14:42	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-196741-2

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 240-599637/1-A
Matrix: Water
Analysis Batch: 599776

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 599637

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000		ug/L		01/08/24 14:00	01/09/24 13:07	1
Iron	100	U	100		ug/L		01/08/24 14:00	01/09/24 13:07	1
Manganese	5.0	U	5.0		ug/L		01/08/24 14:00	01/09/24 13:07	1
Molybdenum	5.0	U	5.0		ug/L		01/08/24 14:00	01/09/24 13:07	1
Lithium	8.0	U	8.0		ug/L		01/08/24 14:00	01/09/24 13:07	1

Lab Sample ID: LCS 240-599637/3-A
Matrix: Water
Analysis Batch: 599776

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 599637

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium			25000	25100		ug/L		100	80 - 120		
Iron			5000	5640		ug/L		113	80 - 120		
Manganese			500	504		ug/L		101	80 - 120		
Molybdenum			500	497		ug/L		99	80 - 120		
Lithium			500	501		ug/L		100	80 - 120		

QC Association Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-196741-2

Metals

Prep Batch: 599637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-196741-2	MW-16-05	Total Recoverable	Water	3005A	
MB 240-599637/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-599637/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 599776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-196741-2	MW-16-05	Total Recoverable	Water	6020B	599637
MB 240-599637/1-A	Method Blank	Total Recoverable	Water	6020B	599637
LCS 240-599637/3-A	Lab Control Sample	Total Recoverable	Water	6020B	599637

Lab Chronicle

Client: TRC Environmental Corporation.
Job ID: 240-196741-2
Project/Site: CCR DTE Range Road Landfill

Client Sample ID: MW-16-05
Lab Sample ID: 240-196741-2
Date Collected: 12/07/23 10:48
Matrix: Water
Date Received: 12/09/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			599637	BN	EET CLE	01/08/24 14:00
Total Recoverable	Analysis	6020B		1	599776	RKT	EET CLE	01/09/24 14:42

Laboratory References:

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

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-196741-2
Project/Site: CCR DTE Range Road Landfill

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-30-24
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-01-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 1/10/2024 6:47:45 PM

JOB DESCRIPTION

CCR DTE Range Road Landfill

JOB NUMBER

240-197852-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization

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1/10/2024 6:47:45 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-197852-1
Project/Site: CCR DTE Range Road Landfill

Qualifiers

General Chemistry

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

Glossary

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

Job ID: 240-197852-1 Eurofins Cleveland

Job Narrative
240-197852-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 1/9/2024 9:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.7°C

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

Method Summary

Client: TRC Environmental Corporation.
Job ID: 240-197852-1
Project/Site: CCR DTE Range Road Landfill

Method	Method Description	Protocol	Laboratory
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CLE

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-197852-1
Project/Site: CCR DTE Range Road Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-197852-1	MW-16-02	Water	01/08/24 10:14	01/09/24 09:00
240-197852-2	DUP-01	Water	01/08/24 00:00	01/09/24 09:00

Detection Summary

Client: TRC Environmental Corporation.
Job ID: 240-197852-1
Project/Site: CCR DTE Range Road Landfill

Client Sample ID: MW-16-02
Lab Sample ID: 240-197852-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	1100		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01
Lab Sample ID: 240-197852-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	1100		20		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 Range Road Landfill

Job ID: 240-197852-1

Client Sample ID: MW-16-02
Date Collected: 01/08/24 10:14
Date Received: 01/09/24 09:00

Lab Sample ID: 240-197852-1
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1100		20		mg/L			01/09/24 09:31	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-197852-1

Client Sample ID: DUP-01
Date Collected: 01/08/24 00:00
Date Received: 01/09/24 09:00

Lab Sample ID: 240-197852-2
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1100		20		mg/L			01/09/24 09:31	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-197852-1

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

Lab Sample ID: MB 240-599737/1
Matrix: Water
Analysis Batch: 599737

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			01/09/24 09:31	1

Lab Sample ID: LCS 240-599737/2
Matrix: Water
Analysis Batch: 599737

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			564	556		mg/L		99	80 - 120		

Lab Sample ID: 240-197852-2 DU
Matrix: Water
Analysis Batch: 599737

Client Sample ID: DUP-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1100			1100		mg/L				1	20

QC Association Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-197852-1

General Chemistry

Analysis Batch: 599737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-197852-1	MW-16-02	Total/NA	Water	SM 2540C	
240-197852-2	DUP-01	Total/NA	Water	SM 2540C	
MB 240-599737/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-599737/2	Lab Control Sample	Total/NA	Water	SM 2540C	
240-197852-2 DU	DUP-01	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: TRC Environmental Corporation.
Job ID: 240-197852-1
Project/Site: CCR DTE Range Road Landfill

Client Sample ID: MW-16-02
Lab Sample ID: 240-197852-1

Date Collected: 01/08/24 10:14
Matrix: Water
Date Received: 01/09/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2540C		1	599737	C5SV	EET CLE	01/09/24 09:31

Client Sample ID: DUP-01
Lab Sample ID: 240-197852-2

Date Collected: 01/08/24 00:00
Matrix: Water
Date Received: 01/09/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2540C		1	599737	C5SV	EET CLE	01/09/24 09:31

Laboratory References:

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

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-197852-1
Project/Site: CCR DTE Range Road Landfill

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-30-24
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-01-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

2-7/27

Chain of Custody Record

Eurofins Canton
180 S. Van Buren Ave

Barberton, OH 44203-3543
phone 330.497.9396 fax 330.497.0772

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other:

Eurofins Environment Testing America

Client Contact	Project Manager: Vince Buening	Site Contact:	Date:	COC No:
TRC	Email: Vbuening@trccompanies.com	Lab Contact:	Carrier:	_____ of _____ COCs
1540 Eisenhower Place	Tel/Fax:			TALS Project #:
Ann Arbor/MI/48108	**Analysis Turnaround Time**			Sampler:
(xxx) xxx-xxxx Phone	☐ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below _____			Walk-in Client:
Project Name: DTE CCR: RRLF GW Sampling & Reporting	☐ 2 weeks			Lab Sampling:
Site: Range Road Landfill	☐ 1 week			
P O # 199485	☐ 2 days			Job / SDG No.:
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Total Dissolved Solids	Sample Specific Notes:
MW-16-02	1-8-24	1014	G	W	1	N	N	X	
DUP-01	1-8-24	—	G	W	1	N	N	X	

240-197852 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

	Company	Date/Time		Company	Date/Time
Relinquished by:	TRC	1-8-24/1400	Received by: UPS	UPS	1-8-24/1400
Relinquished by:			Received by:	EETNC	1-9-24 800
Relinquished by:			Received in Laboratory by:		

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1/10/2024

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client IRC Site Name _____ Cooler unpacked by: Jenny Boyle

Cooler Received on 1-9-24 Opened on 1-9-24

FedEx: 1st Grd Exp (UPS) FAS Waypoint Client Drop Off Eurofins Courier Other

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

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

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

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 22 (CF +0.0 °C) Observed Cooler Temp. 2.7 °C Corrected Cooler Temp. 2.7 °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)?	(Yes)	No
10. Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11. Sufficient quantity received to perform indicated analyses?	(Yes)	No
12. Are these work share samples and all listed on the COC?	Yes	(No)
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes No	(NA) pH Strip Lot# HC316719
14. Were VOAs on the COC?	Yes	(No)
15. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes (No)	(NA)
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____	Yes	(No)
17. Was a LL Hg or Me Hg trip blank present? _____	Yes	(No)

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

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

Concerning _____

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

Samples processed by:

19. SAMPLE CONDITION

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

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

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

JACOB KRENZ
(517) 212-0763
THE UPS STORE #7738
25680 PONTIAC TRL
SOUTH LYON MI 48178-8046

14 LBS 1 OF 1
SHP WT: 14 LBS
DWT: 16,14,13
DATE: 08 JAN 2024
AM

SHIP SAMPLE RECEIVING
TO: 180 S VAN BUREN AVE

BARBERTON OH 44203-3543

OH 442 3-10

UPS EARLY 1+

TRACKING #: 1Z B8F 080 15 0161 7795

BILLING: P/P

ISH 13.00F 22P 450 50.5U 12/2023

Appendix C
Data Quality Reviews

Laboratory Data Quality Review
Groundwater Monitoring Event April 2023
DTE Electric Company Range Road Landfill (DTE RRLF)

Groundwater samples were collected by TRC for the April 2023 sampling event. Samples were analyzed for anions, total metals, and total dissolved solids by Eurofins-Test America Laboratories, Inc. (Eurofins-TA), located in Barberton, Ohio. The laboratory analytical results are reported in laboratory report 240-184179-1.

During the April 2023 sampling event, a groundwater sample was collected from each of the following wells:

- MW-16-01
- MW-16-02
- MW-16-03
- MW-16-04
- MW-16-05
- MW-16-06
- MW-16-07

Each sample was analyzed for the following constituents:

Analyte Group	Method
Anions (Chloride, Fluoride, Sulfate)	SW846 9056A
Total Boron	SW846 3005A/6010B
Total Calcium and Iron	SW846 3005A/6020
Total Dissolved Solids	SM 2540C

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2020). The following items were included in the evaluation of the data:

- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;
- Data for method blanks and equipment blanks, where applicable. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures. Equipment blanks are used to assess potential contamination arising from field procedures;
- Data for laboratory control samples (LCSs). The LCSs are used to assess the accuracy of the analytical method using a clean matrix;
- Data for matrix spike and matrix spike duplicate samples (MS/MSDs), where applicable. The MS/MSDs are used to assess the accuracy and precision of the analytical method using a sample from the dataset;
- Data for laboratory duplicates, where applicable. The laboratory duplicates are used to assess the precision of the analytical method using a sample from the dataset;

- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes; and
- Overall usability of the data.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

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 constituents will be utilized for the purposes of an assessment monitoring program.
- Data are usable for the purposes of the detection 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 equipment blank (EB-01).
- Target analytes were not detected in the method blanks.
- LCS recoveries for all target analytes were within laboratory control limits.
- MS/MSD analyses were performed on sample MW-16-03 for calcium and iron, and sample EB-01 for anions; all criteria were met.
- Laboratory duplicates were not performed for the TDS analysis.
- DUP-01 corresponds with MW-16-06; relative percent differences (RPDs) between the parent and duplicate sample were within the QC limits.
- The nondetect RL for sulfate in sample MW-16-04 (5.0 mg/L) was above the QAPP requested RL (1.0 mg/L) likely due the 5-fold dilution required as a result of the elevated chloride concentration in this sample.

Laboratory Data Quality Review
Groundwater Verification Event June 2023
DTE Electric Company Range Road Landfill (DTE RRLF)

Groundwater samples were collected by TRC for the June 2023 sampling event. Samples were analyzed for sulfate and/or total dissolved solids by Eurofins-Test America Laboratories, Inc. (Eurofins-TA), located in Barberton, Ohio. The laboratory analytical results are reported in laboratory report 240-187147-1.

During the June 2023 sampling event, a groundwater sample was collected from each of the following wells:

- MW-16-01
- MW-16-05

Each sample was analyzed for one or more of the following constituents:

Analyte Group	Method
Sulfate	SW846 9056A
Total Dissolved Solids	SM 2540C

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2020). The following items were included in the evaluation of the data:

- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;
- Data for method blanks and equipment blanks, where applicable. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures. Equipment blanks are used to assess potential contamination arising from field procedures;
- Data for laboratory control samples (LCSs). The LCSs are used to assess the accuracy of the analytical method using a clean matrix;
- Data for matrix spike and matrix spike duplicate samples (MS/MSDs), where applicable. The MS/MSDs are used to assess the accuracy and precision of the analytical method using a sample from the dataset;
- Data for laboratory duplicates, where applicable. The laboratory duplicates are used to assess the precision of the analytical method using a sample from the dataset;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes; and
- Overall usability of the data.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

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 constituents will be utilized for the purposes of an assessment monitoring program.
- Data are usable for the purposes of the detection 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.
- An equipment blank and field blank were not submitted with this data set.
- LCS recoveries for all target analytes were within laboratory control limits.
- MS/MSD and laboratory duplicate analyses were not performed on a sample from this data set.
- DUP-01 corresponds with MW-16-01 and DUP-02 corresponds with MW-16-05; relative percent differences (RPDs) between the parent and duplicate sample were within the QC limits.

Laboratory Data Quality Review
Groundwater Monitoring Event October 2023
DTE Electric Company Range Road Landfill (DTE RRLF)

Groundwater samples were collected by TRC for the October 2023 sampling event. Samples were analyzed for anions, total metals, and total dissolved solids by Eurofins Environment Testing, located in Barberton, Ohio. The laboratory analytical results are reported in laboratory report 240-193874-1.

During the October 2023 sampling event, a groundwater sample was collected from each of the following wells:

- MW-16-01
- MW-16-02
- MW-16-03
- MW-16-04
- MW-16-05
- MW-16-06
- MW-16-07

Each sample was analyzed for the following constituents:

Analyte Group	Method
Anions (Chloride, Fluoride, Sulfate)	SW846 9056A
Total Boron	SW846 3005A/6010D
Total Calcium and Iron	SW846 3005A/6020B
Total Dissolved Solids	SM 2540C

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2020). The following items were included in the evaluation of the data:

- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;
- Data for method blanks and equipment blanks, where applicable. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures. Equipment blanks are used to assess potential contamination arising from field procedures;
- Data for laboratory control samples (LCSs). The LCSs are used to assess the accuracy of the analytical method using a clean matrix;
- Data for matrix spike and matrix spike duplicate samples (MS/MSDs), where applicable. The MS/MSDs are used to assess the accuracy and precision of the analytical method using a sample from the dataset;
- Data for laboratory duplicates, where applicable. The laboratory duplicates are used to assess the precision of the analytical method using a sample from the dataset;

- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes; and
- Overall usability of the data.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

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 constituents and iron will be utilized for the purposes of an assessment monitoring program.
- Data are usable for the purposes of the detection 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 equipment blank (EB-01).
- Target analytes were not detected in the method blanks.
- LCS recoveries for all target analytes were within laboratory control limits.
- MS/MSD analyses were performed on sample EB-01 for anions; all criteria were met.
- Laboratory duplicate analysis was performed on sample MW-16-07 for TDS; all criteria were met.
- Samples DUP-01 and MW-16-03 were submitted as the field duplicate pair with this data set; relative percent differences (RPDs) between the parent and duplicate sample were within the QC limits.
- The nondetect RL for sulfate in sample MW-16-04 (5.0 mg/L) was above the QAPP requested RL (1.0 mg/L) due to the 5-fold dilution required as a result of the elevated chloride concentration in this sample.

Laboratory Data Quality Review
Groundwater Monitoring Verification Events
December 2023 and January 2024
DTE Electric Company Range Road Landfill (DTE RRLF)

Groundwater samples were collected by TRC for the December 2023 and January 2024 verification sampling events. Samples were analyzed for total calcium, sulfate, and/or total dissolved solids by Eurofins Environment Testing, located in Barberton, Ohio. The laboratory analytical results are reported in laboratory report 240-196741-1 (Revised 01/16/2024) and 240-197852-1.

During the December 2023 verification sampling event, a groundwater sample was collected from each of the following wells:

- MW-16-01
- MW-16-05

During the January 2024 verification sampling event, a groundwater sample was collected from the following well:

- MW-16-02

Each sample was analyzed for one or more of the following constituents:

Analyte Group	Method
Sulfate	SW846 9056A
Total Calcium	SW846 3005A/6020B
Total Dissolved Solids (TDS)	SM 2540C

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2020). The following items were included in the evaluation of the data:

- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;
- Data for method blanks and equipment blanks, where applicable. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures. Equipment blanks are used to assess potential contamination arising from field procedures;

- Data for laboratory control samples (LCSs). The LCSs are used to assess the accuracy of the analytical method using a clean matrix;
- Data for matrix spike and matrix spike duplicate samples (MS/MSDs), when performed on project samples. The MS/MSDs are used to assess the accuracy and precision of the analytical method using a sample from the dataset;
- Data for laboratory duplicates, when performed on project samples. The laboratory duplicates are used to assess the precision of the analytical method using a sample from the dataset;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes; and
- Overall usability of the data.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

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 constituents will be utilized for the purposes of an assessment monitoring program.
- Data are usable for the purposes of the detection 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:

- TDS was analyzed slightly outside of the 7-day holding time for samples MW-16-01 and DUP-01 (12/7/2023); there is no impact on the data usability due to this issue since the samples were analyzed on the 7th day after collection.
- A field blank and equipment blank were not collected with this data set.
- No target analytes were detected in the associated method blanks.
- LCS recoveries for all target analytes were within laboratory control limits.
- MS/MSD analyses were not performed on a sample from this data set.
- A laboratory duplicate analysis was performed on sample DUP-01 (01/08/2024) for TDS. All criteria were met.
- Samples DUP-01 (12/07/2023)/MW-16-01, DUP-01 (01/08/2023)/MW-16-02, and DUP-02/MW-16-05 were submitted as the field duplicate pairs with this data set. All criteria were met.