2021 Annual Groundwater Monitoring Report

St. Clair Power Plant Bottom Ash Basins
4901 Pointe Drive
East China Township, Michigan

January 2022

Prepared For:

DTE Electric Company

Prepared By:

TRC
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Executive Summary

On April 17, 2015, the United States Environmental Protection Agency (USEPA) published the final rule for the regulation and management of Coal Combustion Residuals (CCR) under the Resource Conservation and Recovery Act (RCRA) (the CCR Rule), as amended. The CCR Rule, which became effective on October 19, 2015 (with amendments in 2018 and 2020), applies to the DTE Electric Company (DTE Electric) St. Clair Power Plant (SCPP) Bottom Ash Basins (BABs) CCR unit. Pursuant to the CCR Rule, no later than January 31, 2018, and annually thereafter, the owner or operator of a CCR unit must prepare an annual groundwater monitoring and corrective action report for the CCR unit documenting the status of groundwater monitoring and corrective action for the preceding year in accordance with §257.90(e). On behalf of DTE Electric, TRC Engineers Michigan, Inc., the engineering entity of TRC Environmental Corporation (TRC), has prepared this Annual Groundwater Monitoring Report for the calendar year 2021 activities at the SCPP BABs CCR Unit.

DTE Electric remained in detection monitoring at the SCPP BABs CCR unit in 2021. The semiannual detection monitoring events for 2021 were completed in April and October 2021 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 detection monitoring parameters to determine if concentrations in detection monitoring well samples exceed background levels. Detection monitoring data that has been collected and evaluated in 2021 are presented in this report.

No SSIs were recorded for the 2021 monitoring period and detection monitoring will be continued at the SCPP BABs CCR unit in accordance with §257.94. In addition, based on the hydrogeology at the Site, with the presence of the vertically and horizontally extensive clay-rich confining till beneath the SCPP BABs CCR unit, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from operations. Due to limitations on CCR Rule implementation timelines, the background data sets are of relatively short duration for capturing the occurrence of natural temporal changes in the aquifer.

1.0 Introduction

1.1 Program Summary

On April 17, 2015, the United States Environmental Protection Agency (USEPA) published the final rule for the regulation and management of Coal Combustion Residuals (CCR) under the Resource Conservation and Recovery Act (RCRA) (the CCR Rule), as amended. The CCR Rule, which became effective on October 19, 2015 (with amendments in 2018 and 2020), applies to the DTE Electric Company (DTE Electric) St. Clair Power Plant (SCPP) Bottom Ash Basins (BABs). 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 Environmental Corporation (TRC), has prepared this Annual Groundwater Monitoring Report for calendar year 2021 activities at the SCPP BABs CCR unit (2021 Annual Report).

In the *2020 Annual Groundwater Monitoring Report for the St. Clair Power Plant Bottom Ash Basins CCR Unit* (2020 Annual Report) (TRC, January 2021), DTE Electric reported no concentrations over the background limits for any of the Appendix III indicator parameters. Therefore, DTE Electric continued detection monitoring at the SCPP BABs CCR unit in 2021 pursuant to §257.94 of the CCR Rule. This 2021 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 2021 semiannual groundwater monitoring events for the SCPP BABs CCR unit. Detection monitoring for these events continued to be performed in accordance with the *CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company St. Clair Power Plant Bottom Ash Basins* (QAPP) (TRC, July 2016; revised August 2017) and statistically evaluated per the *Groundwater Statistical Evaluation Plan – St. Clair Power Plant Coal Combustion Residual Bottom Ash Basins* (Stats Plan) (TRC, October 2017). As part of the statistical evaluation, the data collected during detection monitoring events are evaluated to identify statistically significant increases (SSIs) of detection monitoring parameters compared to background levels.

1.2 Site Overview

The SCPP BABs are located in Section 19, Township 4 North, Range 17 East, at 4901 Pointe Drive, East China Township in St. Clair County, Michigan. The SCPP including the east BAB was constructed in the early 1950s and the west BAB was constructed in 1996, just south of the DTE Electric SCPP main building. The power plant is located on the peninsula formed by the St. Clair and Belle Rivers, approximately three miles south of St. Clair, Michigan immediately to the west of the St. Clair River.

The property has been used continuously as a coal fired power plant since Detroit Edison Company (now DTE Electric) began power plant operations at SCPP in 1953 and is constructed over a natural continuous clay-rich soil base as shown in historical soil borings performed at the SCPP property. The BABs are designed to manage sluiced bottom ash and other waste streams. The BABs are routinely cleaned out and CCR is disposed at the Range Road Landfill

(RRLF).

The SCPP BABs are two adjacent sedimentation basins that are incised CCR surface impoundments. The impoundments are sheet piled around the perimeters to approximately 13 feet below ground surface (ft bgs) into the native clay-rich soil. The BABs are located south of the SCPP and adjacent to the St. Clair River and are used for receiving bottom ash and other process flow water from the power plant, which is first sent to the East BAB then to the West BAB through a connecting concrete canal. Discharge water from the basins flows with other site wastewater into the Overflow Canal in accordance with a National Pollution Discharge Elimination System (NPDES) permit.

1.3 Geology/Hydrogeology

The SCPP BABs CCR unit is located immediately adjacent to the west edge of the St. Clair River. The SCPP CCR unit is underlain by glacial silty-clay till, with a few isolated sand lenses, and a silt and clay-rich hardpan base directly overlying the shale bedrock (likely the Bedford Shale). The shale bedrock lower confining unit is generally encountered at depths greater than 130 ft bgs. No significant soil or gravel intervals were encountered at any of the groundwater monitoring system well locations. However, during soil boring advancement for the groundwater monitoring system well locations, some signs of saturation were observed throughout a 5-foot interval along the interface between the overlying till/hardpan and the underlying shale bedrock. The underlying shale does not yield groundwater, rather it is an aquiclude that prevents groundwater flow (i.e., is not an aquifer).

Although the encountered zone of saturation along the interface did not yield significant groundwater, it was conservatively interpreted as the first underlying saturated zone that would presumably become affected with CCR constituents, since it was saturated, and although the hydraulic conductivity was low, exhibited a much higher conductivity than the clay-rich soils between the bottom of the basin and the monitored zone. Therefore, the potential uppermost aquifer as described above was present beneath at least 120 feet of vertically contiguous silty clay-rich till that serves as a natural confining hydraulic barrier that isolates the underlying uppermost potential aquifer. The first underlying saturated zone (the potential uppermost aquifer) that would presumably become affected with CCR constituents is located at the silty clay hardpan/shale bedrock interface (130.5 to 132 ft bgs) and is limited to no more than 4 feet thick.

A definitive groundwater flow direction to the east-southeast with a mean gradient of approximately 0.003 to 0.004 feet/feet within the uppermost aquifer is evident around the SCPP CCR BABs CCR unit, however potential groundwater flow within this uppermost aquifer is very low (less than 0.05 feet per year).

In addition, the elevation of CCR-affected water maintained within the SCPP BABs is very similar to the potentiometric surface elevations in the uppermost aquifer at the BABs CCR unit area. This suggests that if the CCR affected surface water in the BABs were able to penetrate the silty clay-rich underlying confining unit, the head on that release likely would travel radially away from the BABs within the uppermost aquifer. However, with the very thick continuous silty

clay-rich confining unit beneath the SCPP, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from SCPP operations that began in the 1950s.

2.0 Groundwater Monitoring

2.1 Monitoring Well Network

A groundwater monitoring system has been established for the SCPP BABs CCR unit as detailed in the *Groundwater Monitoring System Summary Report – DTE Electric Company St. Clair Power Plant Bottom Ash Basins Coal Combustion Residual Unit* (GWMS Report) (TRC, October 2017). The detection monitoring well network for the BABs CCR unit currently consists of four monitoring wells that are screened in the uppermost aquifer. Monitoring wells MW-16-01 through MW-16-04 are located around the east and west perimeter of the BABs and provide data on both background and downgradient groundwater quality that has not been affected by the CCR unit (total of four 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 groundwater 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, 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 groundwater monitoring event for 2021 was performed on April 8th and 9th, 2021 by TRC personnel and samples were analyzed by Eurofins TestAmerica (Eurofins) in accordance with the QAPP. Static water elevation data were collected at all four monitoring well locations. Groundwater samples were collected from the four detection monitoring wells for the Appendix III indicator parameters and field parameters. A summary of the groundwater data collected during the April 2021 event is provided in Table 1 (static groundwater elevation data), Table 2 (field data), and Table 3 (analytical results).

The second semiannual groundwater monitoring event for 2021 was performed on October 14th and 15th, 2021 by TRC personnel and samples were analyzed by Eurofins in accordance with the QAPP. Static water elevation data were collected at all four monitoring well locations. Groundwater samples were collected from the four detection monitoring wells for the Appendix III indicator parameters and field parameters. A summary of the groundwater data collected during the October 2021 event is provided in Table 1 (static groundwater elevation data), Table 2 (field data), and Table 4 (analytical results). The laboratory analytical reports for both the April 2021 and October 2021 events are included in Appendix A.

2.2.2 Data Quality Review

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

program. Data quality reviews are summarized in Appendix B.

2.2.3 Groundwater Flow Rate and Direction

Groundwater elevation data collected during the April and October 2021 sampling events show that groundwater within the uppermost aquifer generally flows to the east-southeast across the SCPP BABs CCR unit. Groundwater potentiometric surface elevations measured across the SCPP BABs during the April and October 2021 sampling events are provided in Table 1 and were used to construct the groundwater potentiometric surface maps shown on Figure 3 and Figure 4, respectively. The groundwater flow rate and direction is consistent with previous monitoring events. The average hydraulic gradient throughout the SCPP BABs during the first and second semiannual 2021 monitoring event is estimated at 0.004 feet/feet with an estimated average seepage velocity of approximately 0.00013 ft/day or 0.047 ft/year (approximately 0.57 inches/year), using the average hydraulic conductivity of 0.013 ft/day (TRC, 2017) and an assumed effective porosity of 0.4.

As presented in the GWMS Report, there is a horizontally expansive clay with substantial vertical thickness that isolates the uppermost aquifer from the SCPP BABs CCR unit. The general flow rate and direction in the uppermost aquifer from both events are similar to that identified in previous monitoring rounds and continues to demonstrate that groundwater flows at a low rate and the compliance wells are appropriately positioned to detect the presence of Appendix III parameters that could potentially migrate from the SCPP BABs CCR unit.

3.0 Statistical Evaluation

3.1 Establishing Background Limits

As discussed in the Stats Plan, intrawell statistical methods for the BABs CCR unit were selected based on the geology and hydrogeology at the Site (primarily the presence of clay/hydraulic barrier, the relatively small footprint of the BABs, and the low vertical and horizontal groundwater flow velocity), 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 of the downgradient wells 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 four established detection monitoring wells (MW-16-01 through MW-16-04). The 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 SCPP BABs CCR unit by comparing concentrations in the detection monitoring wells to their respective background limits for each Appendix III indicator parameter.

3.2 Data Comparison to Background Limits – First Semiannual Event (April 2021)

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

The statistical evaluation of the April 2021 Appendix III indicator parameter data shows that there were no concentrations above background limits for any Appendix III indicator parameters during the first 2021 semiannual detection monitoring event. The data comparisons of the April 2021 data to background limits are presented in Table 3.

3.3 Data Comparison to Background Limits – Second Semiannual Event (October 2021)

As done with the April 2021 data, the concentrations of the indicator parameters in each of the detection monitoring wells (MW-16-01 through MW-16-04) were compared to their respective statistical background limits calculated from the background data collected from each individual well.

The statistical evaluation of the October 2021 Appendix III indicator parameters shows that there were no concentrations above background limits for any Appendix III indicator parameter. The comparisons of the October 2021 data to background limits are presented on Table 4.

4.0 Conclusions and Recommendations

No SSIs were recorded for the 2021 monitoring period and detection monitoring will be continued at the SCPP BABs CCR unit in accordance with §257.94. As discussed above, and in the GWMS Report, with the very thick continuous silty clay-rich confining unit beneath the SCPP BABs CCR unit, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from SCPP operations.

No corrective actions were performed in 2021. The next semiannual monitoring event is scheduled for the second calendar quarter of 2022.

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
St. Clair Power Plant Bottom Ash Basins
East China Township, Michigan

CERTIFICATION

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

Name: David B. McKenzie, P.E.	Expiration Date: December 17, 2023	
Company: TRC Engineers Michigan, Inc.	Date: January 31, 2022	

January 31, 2022

6.0 References

TRC. July 2016; Revised March and August. CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company St. Clair Power Plant Bottom Ash Basins, 4901 Pointe Drive, East China Township, Michigan. Prepared for DTE Electric Company.

TRC. October 2017. Groundwater Monitoring System Summary Report – DTE Electric Company St. Clair Power Plant Bottom Ash Basins Coal Combustion Residual Unit, 4901 Pointe Drive, East China Township, Michigan. Prepared for DTE Electric Company.

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

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

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

Tables

Table 1
Summary of Groundwater Elevation Data - April and October 2021
St. Clair Power Plant Bottom Ash Basins – RCRA CCR Monitoring Program
East China Township, Michigan

	MP-01		MW-16-01		MW-16-02		MW-16-03		MW-16-04	
Date Installed	3/23/2016		3/31/2016		3/29/2016		3/25/2016		3/23/2016	
TOC Elevation	580.84[(1)]		584.74		581.43		581.39		580.95	
Geologic Unit of Screened Interval	NA		Silty Clay Shale Interface		Silty Clay Shale Interface		Silty Clay/Hardpan Shale Interface		Silty Clay/Hardpan Shale Interface	
Screened Interval Elevation	NA		458.1 to 453.1		456.2 to 451.2		455.1 to 450.1		455.0 to 450.0	
Unit	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft
Measurement Date	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation
04/08/2021	4.05	576.79	2.93	581.81	1.26	580.17	1.45	579.94	1.30	579.65
10/14/2021	3.90	576.94	2.98	581.76	1.52	579.91	1.40	579.99	1.78	579.17

Notes:

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

ft BTOC - feet below top of casing

NA - not applicable

NM - not measured.

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

Table 2
Summary of Field Data – April and October 2021
St. Clair Power Plant Bottom Ash Basins – RCRA CCR Monitoring Program
East China Township, Michigan

Sample Location	Sample Date	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	pH (SU)	Specific Conductivity (umhos/cm)	Temperature (deg C)	Turbidity (NTU)
MW-16-01	4/9/2021	1.99	49.5	8.0	4,549	12.80	9.90
	10/15/2021	0.90	-127.5	7.9	4,300	14.90	20.10
MW-16-02	4/9/2021	1.66	-55.3	7.9	6,595	12.10	8.95
	10/15/2021	1.06	-149.3	7.8	6,260	17.60	11.20
MW-16-03	4/9/2021	1.65	-79.5	7.8	6,990	14.20	10.30
	10/15/2021	0.70	-140.1	7.8	6,713	15.60	19.65
MW-16-04	4/9/2021	1.95	11.7	7.3	8,518	14.80	4.95
	10/15/2021	0.72	-163.0	8.1	7,987	15.60	139.75

Notes:

mg/L - milligrams per liter.

mV - milliVolt.

SU - standard unit.

umhos/cm - micro-mhos per centimeter.

deg C - degrees celcius.

NTU - nephelometric turbidity units.

Table 3
Comparison of Appendix III Parameter Results to Background Limits – April 2021
St. Clair Power Plant Bottom Ash Basins – RCRA CCR Monitoring Program
East China Township, Michigan

Sample Location:		MW-16-01		MW-16-02		MW-16-03		MW-16-04	
Sample Date:		4/9/2021	PL	4/9/2021	PL	4/9/2021	PL	4/9/2021	PL
Constituent	Unit	Data		Data		Data		Data	
Appendix III									
Boron	ug/L	2,200	2,600	2,100	2,400	2,200	2,300	2,500	2,600
Calcium	ug/L	18,000	24,000	34,000	69,000	48,000	61,000	39,000	57,000
Chloride	mg/L	1,200	1,400	1,900	2,100	2,200	2,200	2,500	2,800
Fluoride	mg/L	1.9	2.1	1.6	1.6	1.4	1.6	1.7	1.7
pH, Field	SU	8.0	7.2 - 8.6	7.9	7.5 - 8.3	7.8	7.3 - 8.5	7.3	7.3 - 8.4
Sulfate	mg/L	< 2.0	62	< 2.0	25	< 5.0	25	< 5.0	25
Total Dissolved Solids	mg/L	2,300	2,500	3,400	3,600	3,300	4,000	4,400	4,400

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).

Table 4
Comparison of Appendix III Parameter Results to Background Limits – October 2021
St. Clair Power Plant Bottom Ash Basins – RCRA CCR Monitoring Program
East China Township, Michigan

Sample Location:		MW-16-01		MW-16-02		MW-16-03		MW-16-04	
Sample Date:		10/15/2021	PL	10/15/2021	PL	10/15/2021	PL	10/15/2021	PL
Constituent	Unit	Data		Data		Data		Data	
Appendix III									
Boron	ug/L	2,200	2,600	2,000	2,400	2,000	2,300	2,300	2,600
Calcium	ug/L	20,000	24,000	39,000	69,000	48,000	61,000	41,000	57,000
Chloride	mg/L	1,300	1,400	2,000	2,100	2,100	2,200	2,600	2,800
Fluoride	mg/L	1.8	2.1	1.5	1.6	1.4	1.6	1.6	1.7
pH, Field	SU	7.9	7.2 - 8.6	7.8	7.5 - 8.3	7.8	7.3 - 8.5	8.1	7.3 - 8.4
Sulfate	mg/L	< 5.0	62	< 5.0	25	< 5.0	25	< 5.0	25
Total Dissolved Solids	mg/L	2,200	2,500	3,200	3,600	3,100	4,000	3,400	4,400

Notes:

ug/L - micrograms per liter.

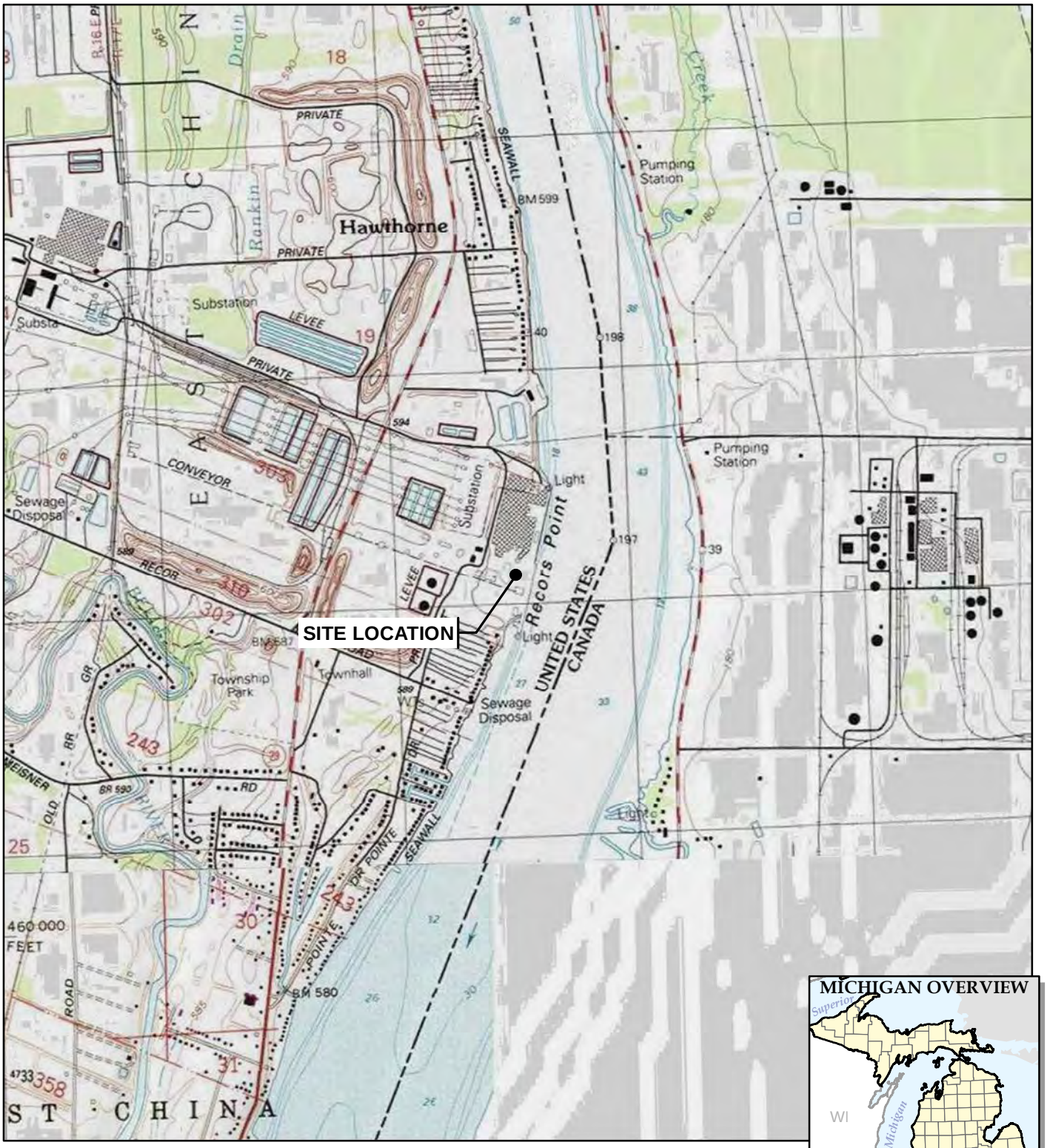
mg/L - milligrams per liter.

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).

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

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TRC - GIS

PROJECT:

DTE ELECTRIC COMPANY
ST. CLAIR POWER PLANT
4901 POINTE DRIVE
EAST CHINA TOWNSHIP, MICHIGAN

TITLE:

SITE LOCATION MAP

DRAWN BY:	A. FOJTIK
CHECKED BY:	J. KRENZ
APPROVED BY:	V. BUENING
DATE:	JANUARY 2022
PROJ. NO.:	413591.0004.0000
FILE:	413591-0004-001slmMB.mxd

FIGURE 1

S:\1-PROJECTS\DTE_Energy\320511_StClair\413591-0004-001slmMB.mxd -- Saved By: AFOJTIK on 11/24/2021, 15:10:09 PM

LEGEND

- MONITORING WELLS
- SURFACE WATER MEASURING POINT

NOTES

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

0 100 200 Feet

1 " = 100 '

1:1,200

PROJECT:
DTE ELECTRIC COMPANY
ST. CLAIR POWER PLANT BOTTOM ASH BASINS
4901 POINTE DRIVE
EAST CHINA TOWNSHIP, MICHIGAN

TITLE:
SITE PLAN

DRAWN BY:	A. FOJTIK	PROJ NO.:	413591.0004.0000
CHECKED BY:	J. KRENZ		FIGURE 2
APPROVED BY:	V. BUENING		
DATE:	JANUARY 2022		

TRC

FILE NO.: 413591-0004-002_20211129.mxd

Plot Date: 1/6/2022, 17:47:00 PM by AFOJTIK – LAYOUT: ANSI B(11"x17")
Path: S:\1-PROJECTS\DTE_Energy\320511_StClair\413591-0004-002_20211129.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

TRC - GIS

LEGEND

- MONITORING WELLS
- SURFACE WATER MEASURING POINT
- (579.85) GROUNDWATER ELEVATION (FT NAVD88)
- GROUNDWATER ELEVATION CONTOUR (0.5-FT INTERVAL, DASHED WHERE INFERRED)

NOTES

1. BASE MAP IMAGERY FROM ESRI WORLD IMAGERY, (08/13/2021).
2. WELL LOCATIONS SURVEYED BY BMJ ENGINEERS AND SURVEYORS INC. IN APRIL 2016.
3. GROUNDWATER ELEVATIONS DISPLAYED IN FEET RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988.

0 100 200 Feet

1 " = 100 '

1:1,200

PROJECT:
DTE ELECTRIC COMPANY
ST. CLAIR POWER PLANT
4901 POINTE DRIVE
EAST CHINA TOWNSHIP, MICHIGAN

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE MAP
APRIL 2021

DRAWN BY:	B. TRACY	PROJ NO.:	413591.0004.0000
CHECKED BY:	J. KRENZ		FIGURE 3
APPROVED BY:	V. BUENING		
DATE:	JANUARY 2022		

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

FILE NO.: 413591-0004-003.mxd

TRC - GIS
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0
Plot Date: 1/6/2022, 22:28:45 PM by AFOJTIK -- LAYOUT: ANSI B (11"x17")
Path: S:\1-PROJECTS\DTE_Energy\320511_StClair\413591-0004-003.mxd

LEGEND

- MONITORING WELLS
- SURFACE WATER MEASURING POINT *MEASURES WATER ELEVATION IN ST. CLAIR RIVER
- (579.85) GROUNDWATER ELEVATION (FT NAVD88)
- GROUNDWATER ELEVATION CONTOUR (0.5-FT INTERVAL, DASHED WHERE INFERRED)

NOTES

1. BASE MAP IMAGERY FROM ESRI WORLD IMAGERY, (08/13/2021)
2. WELL LOCATIONS SURVEYED BY BMJ ENGINEERS AND SURVEYORS INC. IN APRIL 2016.
3. GROUNDWATER ELEVATIONS DISPLAYED IN FEET RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988.

N

0 100 200 Feet

1 " = 100 '

1:1,200

PROJECT:
DTE ELECTRIC COMPANY
ST. CLAIR POWER PLANT BOTTOM ASH BASINS
4901 POINTE DRIVE
EAST CHINA TOWNSHIP, MICHIGAN

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE MAP OCTOBER 2021

DRAWN BY:	A. FOJTIK	PROJ NO.:	413591.0004
CHECKED BY:	J. KRENZ		
APPROVED BY:	V. BUENING		**FIGURE 4**
DATE:	JANUARY 2022		

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

FILE NO.: 413591-0004-004_20211129.mxd

Plot Date: 1/6/2022, 22:46:17 PM by AFOJTIK -- LAYOUT: ANSI B (11"x17")
Path: S:\1-PROJECTS\DTE_Energy\320511_StClair\413591-0004-004_20211129.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

TRC - GIS

Appendix A
Laboratory Reports

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-147490-1
Client Project/Site: CCR DTE St. Clair Power

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

Attn: Mr. Vincent Buening

Authorized for release by:
4/22/2021 2:28:14 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

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: 240-147490-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-147490-1

Comments
No additional comments.

Receipt
The samples were received on 4/14/2021 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 was 0.9º C.

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

General Chemistry
Method 9056A: The following samples were diluted due to the nature of the sample matrix: MW-16-01 (240-147490-1), MW-16-02 (240-147490-2), MW-16-03 (240-147490-3), MW-16-04 (240-147490-4) and DUP-01 (240-147490-5). 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.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

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

Protocol References:

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

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

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-147490-1	MW-16-01	Water	04/09/21 08:47	04/14/21 08:00	
240-147490-2	MW-16-02	Water	04/09/21 09:59	04/14/21 08:00	
240-147490-3	MW-16-03	Water	04/09/21 11:02	04/14/21 08:00	
240-147490-4	MW-16-04	Water	04/09/21 11:39	04/14/21 08:00	
240-147490-5	DUP-01	Water	04/09/21 00:00	04/14/21 08:00	
240-147490-6	EB-01	Water	04/08/21 11:36	04/14/21 08:00	

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

Client Sample ID: MW-16-01 — Lab Sample ID: 240-147490-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2200		100	23	ug/L	1		6010B	Total Recoverable
Calcium	18000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	860		100	100	ug/L	1		6020	Total Recoverable
Chloride	1200		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.9		0.10	0.10	mg/L	2		9056A	Total/NA
Total Dissolved Solids	2300		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02 — Lab Sample ID: 240-147490-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2100		100	23	ug/L	1		6010B	Total Recoverable
Calcium	34000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	950		100	100	ug/L	1		6020	Total Recoverable
Chloride	1900		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.6		0.10	0.10	mg/L	2		9056A	Total/NA
Total Dissolved Solids	3400		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03 — Lab Sample ID: 240-147490-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2200		100	23	ug/L	1		6010B	Total Recoverable
Calcium	48000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	1200		100	100	ug/L	1		6020	Total Recoverable
Chloride	2200		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.4		0.25	0.25	mg/L	5		9056A	Total/NA
Total Dissolved Solids	3300		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-04 — Lab Sample ID: 240-147490-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2500		100	23	ug/L	1		6010B	Total Recoverable
Calcium	39000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	6000		100	100	ug/L	1		6020	Total Recoverable
Chloride	2500		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.7		0.25	0.25	mg/L	5		9056A	Total/NA
Total Dissolved Solids	4400		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01 — Lab Sample ID: 240-147490-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2200		100	23	ug/L	1		6010B	Total Recoverable
Calcium	18000		1000	1000	ug/L	1		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

Client Sample ID: DUP-01 (Continued)

Lab Sample ID: 240-147490-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	870		100	100	ug/L	1		6020	Total Recoverable
Chloride	1200		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.9		0.10	0.10	mg/L	2		9056A	Total/NA
Total Dissolved Solids	2300		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: EB-01

Lab Sample ID: 240-147490-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

Client Sample ID: MW-16-01

Date Collected: 04/09/21 08:47
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147490-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2200		100	23	ug/L		04/15/21 14:00	04/16/21 20:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	18000		1000	1000	ug/L		04/15/21 14:00	04/16/21 15:09	1
Iron	860		100	100	ug/L		04/15/21 14:00	04/16/21 15:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1200		20	20	mg/L			04/20/21 23:28	20
Fluoride	1.9		0.10	0.10	mg/L			04/20/21 23:08	2
Sulfate	2.0	U	2.0	2.0	mg/L			04/20/21 23:08	2
Total Dissolved Solids	2300		40	40	mg/L			04/15/21 12:36	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

Client Sample ID: MW-16-02

Date Collected: 04/09/21 09:59
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147490-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2100		100	23	ug/L		04/15/21 14:00	04/16/21 20:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	34000		1000	1000	ug/L		04/15/21 14:00	04/16/21 15:12	1
Iron	950		100	100	ug/L		04/15/21 14:00	04/16/21 15:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1900		20	20	mg/L			04/21/21 00:48	20
Fluoride	1.6		0.10	0.10	mg/L			04/21/21 00:28	2
Sulfate	2.0	U	2.0	2.0	mg/L			04/21/21 00:28	2
Total Dissolved Solids	3400		50	50	mg/L			04/15/21 12:36	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

Client Sample ID: MW-16-03

Date Collected: 04/09/21 11:02
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147490-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2200		100	23	ug/L		04/15/21 14:00	04/16/21 20:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	48000		1000	1000	ug/L		04/15/21 14:00	04/16/21 15:14	1
Iron	1200		100	100	ug/L		04/15/21 14:00	04/16/21 15:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2200		20	20	mg/L			04/21/21 01:29	20
Fluoride	1.4		0.25	0.25	mg/L			04/21/21 01:08	5
Sulfate	5.0	U	5.0	5.0	mg/L			04/21/21 01:08	5
Total Dissolved Solids	3300		50	50	mg/L			04/15/21 12:36	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

Client Sample ID: MW-16-04

Date Collected: 04/09/21 11:39
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147490-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2500		100	23	ug/L		04/15/21 14:00	04/16/21 21:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	39000		1000	1000	ug/L		04/15/21 14:00	04/16/21 15:22	1
Iron	6000		100	100	ug/L		04/15/21 14:00	04/16/21 15:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2500		20	20	mg/L			04/21/21 02:09	20
Fluoride	1.7		0.25	0.25	mg/L			04/21/21 01:49	5
Sulfate	5.0	U	5.0	5.0	mg/L			04/21/21 01:49	5
Total Dissolved Solids	4400		50	50	mg/L			04/15/21 12:36	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

Client Sample ID: DUP-01

Date Collected: 04/09/21 00:00
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147490-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2200		100	23	ug/L		04/15/21 14:00	04/16/21 21:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	18000		1000	1000	ug/L		04/15/21 14:00	04/16/21 15:24	1
Iron	870		100	100	ug/L		04/15/21 14:00	04/16/21 15:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1200		20	20	mg/L			04/21/21 02:49	20
Fluoride	1.9		0.10	0.10	mg/L			04/21/21 02:29	2
Sulfate	2.0	U	2.0	2.0	mg/L			04/21/21 02:29	2
Total Dissolved Solids	2300		50	50	mg/L			04/16/21 08:45	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

Client Sample ID: EB-01

Date Collected: 04/08/21 11:36
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147490-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	23	ug/L		04/15/21 14:00	04/16/21 21:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	1000	ug/L		04/15/21 14:00	04/16/21 15:27	1
Iron	100	U	100	100	ug/L		04/15/21 14:00	04/16/21 15:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			04/21/21 03:09	1
Fluoride	0.050	U	0.050	0.050	mg/L			04/21/21 03:09	1
Sulfate	1.0	U	1.0	1.0	mg/L			04/21/21 03:09	1
Total Dissolved Solids	10	U	10	10	mg/L			04/15/21 12:36	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-481288/1-A
Matrix: Water
Analysis Batch: 481543

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 481288

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	23	ug/L		04/15/21 14:00	04/16/21 19:23	1

Lab Sample ID: LCS 240-481288/2-A
Matrix: Water
Analysis Batch: 481543

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 481288

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

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-481288/1-A
Matrix: Water
Analysis Batch: 481675

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 481288

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	1000	ug/L		04/15/21 14:00	04/16/21 14:23	1
Iron	100	U	100	100	ug/L		04/15/21 14:00	04/16/21 14:23	1

Lab Sample ID: LCS 240-481288/3-A
Matrix: Water
Analysis Batch: 481675

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 481288

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	25000	23900		ug/L		96	80 - 120
Iron	5000	4910		ug/L		98	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-481955/3
Matrix: Water
Analysis Batch: 481955

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			04/20/21 12:24	1
Fluoride	0.050	U	0.050	0.050	mg/L			04/20/21 12:24	1
Sulfate	1.0	U	1.0	1.0	mg/L			04/20/21 12:24	1

Lab Sample ID: LCS 240-481955/4
Matrix: Water
Analysis Batch: 481955

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.9		mg/L		102	90 - 110
Fluoride	2.50	2.59		mg/L		104	90 - 110
Sulfate	50.0	51.0		mg/L		102	90 - 110

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

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

Lab Sample ID: MB 240-481338/1
Matrix: Water
Analysis Batch: 481338

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			04/15/21 12:36	1

Lab Sample ID: LCS 240-481338/2
Matrix: Water
Analysis Batch: 481338

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	683	689		mg/L		101	80 - 120

Lab Sample ID: MB 240-481477/1
Matrix: Water
Analysis Batch: 481477

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			04/16/21 08:45	1

Lab Sample ID: LCS 240-481477/2
Matrix: Water
Analysis Batch: 481477

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	683	647		mg/L		95	80 - 120

QC Association Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

Metals

Prep Batch: 481288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147490-1	MW-16-01	Total Recoverable	Water	3005A	
240-147490-2	MW-16-02	Total Recoverable	Water	3005A	
240-147490-3	MW-16-03	Total Recoverable	Water	3005A	
240-147490-4	MW-16-04	Total Recoverable	Water	3005A	
240-147490-5	DUP-01	Total Recoverable	Water	3005A	
240-147490-6	EB-01	Total Recoverable	Water	3005A	
MB 240-481288/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-481288/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-481288/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 481543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147490-1	MW-16-01	Total Recoverable	Water	6010B	481288
240-147490-2	MW-16-02	Total Recoverable	Water	6010B	481288
240-147490-3	MW-16-03	Total Recoverable	Water	6010B	481288
240-147490-4	MW-16-04	Total Recoverable	Water	6010B	481288
240-147490-5	DUP-01	Total Recoverable	Water	6010B	481288
240-147490-6	EB-01	Total Recoverable	Water	6010B	481288
MB 240-481288/1-A	Method Blank	Total Recoverable	Water	6010B	481288
LCS 240-481288/2-A	Lab Control Sample	Total Recoverable	Water	6010B	481288

Analysis Batch: 481675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147490-1	MW-16-01	Total Recoverable	Water	6020	481288
240-147490-2	MW-16-02	Total Recoverable	Water	6020	481288
240-147490-3	MW-16-03	Total Recoverable	Water	6020	481288
240-147490-4	MW-16-04	Total Recoverable	Water	6020	481288
240-147490-5	DUP-01	Total Recoverable	Water	6020	481288
240-147490-6	EB-01	Total Recoverable	Water	6020	481288
MB 240-481288/1-A	Method Blank	Total Recoverable	Water	6020	481288
LCS 240-481288/3-A	Lab Control Sample	Total Recoverable	Water	6020	481288

General Chemistry

Analysis Batch: 481338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147490-1	MW-16-01	Total/NA	Water	SM 2540C	
240-147490-2	MW-16-02	Total/NA	Water	SM 2540C	
240-147490-3	MW-16-03	Total/NA	Water	SM 2540C	
240-147490-4	MW-16-04	Total/NA	Water	SM 2540C	
240-147490-6	EB-01	Total/NA	Water	SM 2540C	
MB 240-481338/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-481338/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 481477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147490-5	DUP-01	Total/NA	Water	SM 2540C	
MB 240-481477/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-481477/2	Lab Control Sample	Total/NA	Water	SM 2540C	

General Chemistry

Analysis Batch: 481955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147490-1	MW-16-01	Total/NA	Water	9056A	
240-147490-1	MW-16-01	Total/NA	Water	9056A	
240-147490-2	MW-16-02	Total/NA	Water	9056A	
240-147490-2	MW-16-02	Total/NA	Water	9056A	
240-147490-3	MW-16-03	Total/NA	Water	9056A	
240-147490-3	MW-16-03	Total/NA	Water	9056A	
240-147490-4	MW-16-04	Total/NA	Water	9056A	
240-147490-4	MW-16-04	Total/NA	Water	9056A	
240-147490-5	DUP-01	Total/NA	Water	9056A	
240-147490-5	DUP-01	Total/NA	Water	9056A	
240-147490-6	EB-01	Total/NA	Water	9056A	
MB 240-481955/3	Method Blank	Total/NA	Water	9056A	
LCS 240-481955/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

Client Sample ID: MW-16-01

Lab Sample ID: 240-147490-1

Date Collected: 04/09/21 08:47

Matrix: Water

Date Received: 04/14/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481288	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 20:49	DSH	TAL CAN
Total Recoverable	Prep	3005A			481288	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481675	04/16/21 15:09	DTN	TAL CAN
Total/NA	Analysis	9056A		2	481955	04/20/21 23:08	AGC	TAL CAN
Total/NA	Analysis	9056A		20	481955	04/20/21 23:28	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: MW-16-02

Lab Sample ID: 240-147490-2

Date Collected: 04/09/21 09:59

Matrix: Water

Date Received: 04/14/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481288	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 20:53	DSH	TAL CAN
Total Recoverable	Prep	3005A			481288	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481675	04/16/21 15:12	DTN	TAL CAN
Total/NA	Analysis	9056A		2	481955	04/21/21 00:28	AGC	TAL CAN
Total/NA	Analysis	9056A		20	481955	04/21/21 00:48	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: MW-16-03

Lab Sample ID: 240-147490-3

Date Collected: 04/09/21 11:02

Matrix: Water

Date Received: 04/14/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481288	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 20:58	DSH	TAL CAN
Total Recoverable	Prep	3005A			481288	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481675	04/16/21 15:14	DTN	TAL CAN
Total/NA	Analysis	9056A		5	481955	04/21/21 01:08	AGC	TAL CAN
Total/NA	Analysis	9056A		20	481955	04/21/21 01:29	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: MW-16-04

Lab Sample ID: 240-147490-4

Date Collected: 04/09/21 11:39

Matrix: Water

Date Received: 04/14/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481288	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 21:02	DSH	TAL CAN
Total Recoverable	Prep	3005A			481288	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481675	04/16/21 15:22	DTN	TAL CAN
Total/NA	Analysis	9056A		5	481955	04/21/21 01:49	AGC	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-147490-1

Client Sample ID: MW-16-04

Lab Sample ID: 240-147490-4

Date Collected: 04/09/21 11:39

Matrix: Water

Date Received: 04/14/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		20	481955	04/21/21 02:09	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: DUP-01

Lab Sample ID: 240-147490-5

Date Collected: 04/09/21 00:00

Matrix: Water

Date Received: 04/14/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481288	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 21:07	DSH	TAL CAN
Total Recoverable	Prep	3005A			481288	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481675	04/16/21 15:24	DTN	TAL CAN
Total/NA	Analysis	9056A		2	481955	04/21/21 02:29	AGC	TAL CAN
Total/NA	Analysis	9056A		20	481955	04/21/21 02:49	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481477	04/16/21 08:45	JR	TAL CAN

Client Sample ID: EB-01

Lab Sample ID: 240-147490-6

Date Collected: 04/08/21 11:36

Matrix: Water

Date Received: 04/14/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481288	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 21:20	DSH	TAL CAN
Total Recoverable	Prep	3005A			481288	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481675	04/16/21 15:27	DTN	TAL CAN
Total/NA	Analysis	9056A		1	481955	04/21/21 03:09	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-147490-1
Project/Site: CCR DTE St. Clair Power

Laboratory: Eurofins TestAmerica, Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-22
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21 *
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

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

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Phone: 330-497-9396 Fax: 330-497-0772

MICHIGAN 190

Chain of Custody Record

0.8/0.9

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Client Information	Sampler: JAVIER JASSE	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-81503-21483.1
Client Contact: Chris Scieszka	Phone: 734 904 3316	E-Mail: Kris.Brooks@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: TRC Environmental Corporation.	PWSID:	Analysis Requested		Job #:
Address: 1540 Eisenhower Place	Due Date Requested:			Preservation Codes:
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 #: 164687			
Email: CScieszka@trccompanies.com	WO #: 370029.0004 P1 T2			
Project Name: CCR DTE St. Clair Power	Project #: 24016804			
Site: Michigan	SSOW#:			Other:

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

240-147490 Chain of Custody

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, 9056A_28D	6010B, 6020	Total Number of containers	Special Instructions/Note:
				Preservation Code:			N	D		
MW-16-01	4/9/21	0847	G	Water	N	N	X	X	2	
MW-16-02	" "	0959	G	Water	N	N	X	X	2	
MW-16-03	" "	1103	G	Water	N	N	X	X	2	
MW-16-04	" "	1139	G	Water	N	N	X	X	2	
DUP-01	" "	—	—	Water	N	N	X	X	2	
EB-01	4/8/21	1130	G	Water	N	N	X	X	2	
				Water						

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4/9/21 1700	TRC	TRC Staff	4/9/21 1700	TRC
[signature]	4/12/21 1:40		[signature]	4/12/21 1340	ETA
[signature]	4/12/21 1600	ETA	COLD STORAGE	4/12/21 16:18	

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

[signature] 4/13/21 1402 ETA [signature] 4-14-21 800 ETA

Ver: 11/01/2020

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 147490
Canton Facility

Client IRC Site Name _____ Cooler unpacked by: Colm G.

Cooler Received on 4-14-21 Opened on 4-14-21

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

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

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____

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

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

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-11 (CF +0.1 °C) Observed Cooler Temp. 1.8 °C Corrected Cooler Temp. 1.9 °C
   IR GUN #IR-12 (CF +0.2°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 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# **HC022887**
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: Ryan C

_____

_____

_____

_____

19. SAMPLE CONDITION

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

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

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

20. SAMPLE PRESERVATION

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

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

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-01	240-147490-B-1	Plastic 250ml - with Nitric Acid	<2			
MW-16-02	240-147490-B-2	Plastic 250ml - with Nitric Acid	<2			
MW-16-03	240-147490-B-3	Plastic 250ml - with Nitric Acid	<2			
MW-16-04	240-147490-B-4	Plastic 250ml - with Nitric Acid	<2			
DUP-01	240-147490-B-5	Plastic 250ml - with Nitric Acid	<2			
EB-01	240-147490-B-6	Plastic 250ml - with Nitric Acid	<2			

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ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-158353-1
Client Project/Site: CCR DTE St. Clair Power

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

Attn: Mr. Vincent Buening

Authorized for release by:
11/3/2021 6:21:08 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-158353-1

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: 240-158353-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-158353-1

Comments
No additional comments.

Receipt
The samples were received on 10/20/2021 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 was 0.8º C.

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

General Chemistry
Method SM 2540C: Sample out of temp due to being placed on S-shelf instead of walk in over night

Method 9056A: The following samples were diluted due to the nature of the sample matrix: MW-16-01 (240-158353-1), MW-16-02 (240-158353-2), MW-16-03 (240-158353-3), MW-16-04 (240-158353-4) and DUP-01 (240-158353-5). 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.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-158353-1

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

Protocol References:

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

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

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-158353-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-158353-1	MW-16-01	Water	10/15/21 09:05	10/20/21 08:00
240-158353-2	MW-16-02	Water	10/15/21 13:12	10/20/21 08:00
240-158353-3	MW-16-03	Water	10/15/21 12:30	10/20/21 08:00
240-158353-4	MW-16-04	Water	10/15/21 11:30	10/20/21 08:00
240-158353-5	DUP-01	Water	10/15/21 00:00	10/20/21 08:00
240-158353-6	EB-01	Water	10/14/21 11:00	10/20/21 08:00

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-158353-1

Client Sample ID: MW-16-01 — Lab Sample ID: 240-158353-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2200		100	57	ug/L	1		6010B	Total Recoverable
Calcium	20000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	1500		100	100	ug/L	1		6020	Total Recoverable
Chloride	1300		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.8		0.25	0.25	mg/L	5		9056A	Total/NA
Total Dissolved Solids	2200		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02 — Lab Sample ID: 240-158353-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2000		100	57	ug/L	1		6010B	Total Recoverable
Calcium	39000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	1800		100	100	ug/L	1		6020	Total Recoverable
Chloride	2000		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.5		0.25	0.25	mg/L	5		9056A	Total/NA
Total Dissolved Solids	3200		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03 — Lab Sample ID: 240-158353-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2000		100	57	ug/L	1		6010B	Total Recoverable
Calcium	48000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	1100		100	100	ug/L	1		6020	Total Recoverable
Chloride	2100		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.4		0.25	0.25	mg/L	5		9056A	Total/NA
Total Dissolved Solids	3100		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-04 — Lab Sample ID: 240-158353-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2300		100	57	ug/L	1		6010B	Total Recoverable
Calcium	41000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	6400		100	100	ug/L	1		6020	Total Recoverable
Chloride	2600		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.6		0.25	0.25	mg/L	5		9056A	Total/NA
Total Dissolved Solids	3400		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01 — Lab Sample ID: 240-158353-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2200		100	57	ug/L	1		6010B	Total Recoverable
Calcium	20000		1000	1000	ug/L	1		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-158353-1

Client Sample ID: DUP-01 (Continued)

Lab Sample ID: 240-158353-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	1400		100	100	ug/L	1		6020	Total Recoverable
Chloride	1300		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.9		0.25	0.25	mg/L	5		9056A	Total/NA
Total Dissolved Solids	2000		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: EB-01

Lab Sample ID: 240-158353-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-158353-1

Client Sample ID: MW-16-01

Lab Sample ID: 240-158353-1

Date Collected: 10/15/21 09:05

Matrix: Water

Date Received: 10/20/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2200		100	57	ug/L		10/21/21 14:00	10/23/21 02:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	20000		1000	1000	ug/L		10/21/21 14:00	10/25/21 12:28	1
Iron	1500		100	100	ug/L		10/21/21 14:00	10/25/21 12:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1300		20	20	mg/L			11/02/21 14:06	20
Fluoride	1.8		0.25	0.25	mg/L			11/02/21 13:46	5
Sulfate	5.0	U	5.0	5.0	mg/L			11/02/21 13:46	5
Total Dissolved Solids	2200		40	40	mg/L			10/21/21 07:57	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-158353-1

Client Sample ID: MW-16-02

Date Collected: 10/15/21 13:12
Date Received: 10/20/21 08:00

Lab Sample ID: 240-158353-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2000		100	57	ug/L		10/21/21 14:00	10/23/21 02:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	39000		1000	1000	ug/L		10/21/21 14:00	10/25/21 12:31	1
Iron	1800		100	100	ug/L		10/21/21 14:00	10/25/21 12:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000		20	20	mg/L			11/02/21 14:46	20
Fluoride	1.5		0.25	0.25	mg/L			11/02/21 14:26	5
Sulfate	5.0	U	5.0	5.0	mg/L			11/02/21 14:26	5
Total Dissolved Solids	3200		50	50	mg/L			10/21/21 07:57	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-158353-1

Client Sample ID: MW-16-03

Date Collected: 10/15/21 12:30
Date Received: 10/20/21 08:00

Lab Sample ID: 240-158353-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2000		100	57	ug/L		10/21/21 14:00	10/23/21 02:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	48000		1000	1000	ug/L		10/21/21 14:00	10/25/21 12:33	1
Iron	1100		100	100	ug/L		10/21/21 14:00	10/25/21 12:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2100		20	20	mg/L			11/02/21 16:07	20
Fluoride	1.4		0.25	0.25	mg/L			11/02/21 15:06	5
Sulfate	5.0	U	5.0	5.0	mg/L			11/02/21 15:06	5
Total Dissolved Solids	3100		50	50	mg/L			10/21/21 07:57	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-158353-1

Client Sample ID: MW-16-04

Date Collected: 10/15/21 11:30
Date Received: 10/20/21 08:00

Lab Sample ID: 240-158353-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2300		100	57	ug/L		10/21/21 14:00	10/23/21 02:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	41000		1000	1000	ug/L		10/21/21 14:00	10/25/21 12:36	1
Iron	6400		100	100	ug/L		10/21/21 14:00	10/25/21 12:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2600		20	20	mg/L			11/02/21 16:47	20
Fluoride	1.6		0.25	0.25	mg/L			11/02/21 16:27	5
Sulfate	5.0	U	5.0	5.0	mg/L			11/02/21 16:27	5
Total Dissolved Solids	3400		50	50	mg/L			10/21/21 07:57	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-158353-1

Client Sample ID: DUP-01

Date Collected: 10/15/21 00:00
Date Received: 10/20/21 08:00

Lab Sample ID: 240-158353-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2200		100	57	ug/L		10/21/21 14:00	10/23/21 02:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	20000		1000	1000	ug/L		10/21/21 14:00	10/25/21 12:38	1
Iron	1400		100	100	ug/L		10/21/21 14:00	10/25/21 12:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1300		20	20	mg/L			11/02/21 17:27	20
Fluoride	1.9		0.25	0.25	mg/L			11/02/21 17:07	5
Sulfate	5.0	U	5.0	5.0	mg/L			11/02/21 17:07	5
Total Dissolved Solids	2000		40	40	mg/L			10/21/21 07:57	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-158353-1

Client Sample ID: EB-01

Date Collected: 10/14/21 11:00
Date Received: 10/20/21 08:00

Lab Sample ID: 240-158353-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	57	ug/L		10/21/21 14:00	10/23/21 02:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	1000	ug/L		10/21/21 14:00	10/25/21 12:41	1
Iron	100	U	100	100	ug/L		10/21/21 14:00	10/25/21 12:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			11/02/21 17:47	1
Fluoride	0.050	U	0.050	0.050	mg/L			11/02/21 17:47	1
Sulfate	1.0	U	1.0	1.0	mg/L			11/02/21 17:47	1
Total Dissolved Solids	10	U	10	10	mg/L			10/21/21 07:57	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-509273/1-A
Matrix: Water
Analysis Batch: 509522

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 509273

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	57	ug/L		10/21/21 14:00	10/23/21 01:46	1

Lab Sample ID: LCS 240-509273/25-A
Matrix: Water
Analysis Batch: 509522

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 509273

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	1040		ug/L		104	80 - 120

Lab Sample ID: 240-158353-1 MS
Matrix: Water
Analysis Batch: 509522

Client Sample ID: MW-16-01
Prep Type: Total Recoverable
Prep Batch: 509273

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	2200		1000	3140		ug/L		92	75 - 125

Lab Sample ID: 240-158353-1 MSD
Matrix: Water
Analysis Batch: 509522

Client Sample ID: MW-16-01
Prep Type: Total Recoverable
Prep Batch: 509273

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	2200		1000	3240		ug/L		103	75 - 125	3	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-509273/1-A
Matrix: Water
Analysis Batch: 509863

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 509273

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	1000	ug/L		10/21/21 14:00	10/25/21 11:30	1
Iron	100	U	100	100	ug/L		10/21/21 14:00	10/25/21 11:30	1

Lab Sample ID: LCS 240-509273/2-A
Matrix: Water
Analysis Batch: 509863

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 509273

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	25000	27300		ug/L		109	80 - 120
Iron	5000	5540		ug/L		111	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-510882/45
Matrix: Water
Analysis Batch: 510882

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			11/02/21 10:05	1
Fluoride	0.050	U	0.050	0.050	mg/L			11/02/21 10:05	1

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

Lab Sample ID: MB 240-510882/45
Matrix: Water
Analysis Batch: 510882

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	mg/L			11/02/21 10:05	1

Lab Sample ID: LCS 240-510882/46
Matrix: Water
Analysis Batch: 510882

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.2		mg/L		102	90 - 110
Fluoride	2.50	2.60		mg/L		104	90 - 110
Sulfate	50.0	51.7		mg/L		103	90 - 110

Lab Sample ID: 240-158353-6 MS
Matrix: Water
Analysis Batch: 510882

Client Sample ID: EB-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1.0	U	50.0	54.0		mg/L		108	80 - 120
Fluoride	0.050	U	2.50	2.73		mg/L		109	80 - 120
Sulfate	1.0	U	50.0	54.5		mg/L		109	80 - 120

Lab Sample ID: 240-158353-6 MSD
Matrix: Water
Analysis Batch: 510882

Client Sample ID: EB-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1.0	U	50.0	56.1		mg/L		112	80 - 120	4	15
Fluoride	0.050	U	2.50	2.86		mg/L		114	80 - 120	5	15
Sulfate	1.0	U	50.0	56.7		mg/L		113	80 - 120	4	15

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

Lab Sample ID: MB 240-509202/1
Matrix: Water
Analysis Batch: 509202

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			10/21/21 07:57	1

Lab Sample ID: LCS 240-509202/2
Matrix: Water
Analysis Batch: 509202

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	500	511		mg/L		102	80 - 120

QC Association Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-158353-1

Metals

Prep Batch: 509273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158353-1	MW-16-01	Total Recoverable	Water	3005A	
240-158353-2	MW-16-02	Total Recoverable	Water	3005A	
240-158353-3	MW-16-03	Total Recoverable	Water	3005A	
240-158353-4	MW-16-04	Total Recoverable	Water	3005A	
240-158353-5	DUP-01	Total Recoverable	Water	3005A	
240-158353-6	EB-01	Total Recoverable	Water	3005A	
MB 240-509273/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-509273/25-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-509273/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-158353-1 MS	MW-16-01	Total Recoverable	Water	3005A	
240-158353-1 MSD	MW-16-01	Total Recoverable	Water	3005A	

Analysis Batch: 509522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158353-1	MW-16-01	Total Recoverable	Water	6010B	509273
240-158353-2	MW-16-02	Total Recoverable	Water	6010B	509273
240-158353-3	MW-16-03	Total Recoverable	Water	6010B	509273
240-158353-4	MW-16-04	Total Recoverable	Water	6010B	509273
240-158353-5	DUP-01	Total Recoverable	Water	6010B	509273
240-158353-6	EB-01	Total Recoverable	Water	6010B	509273
MB 240-509273/1-A	Method Blank	Total Recoverable	Water	6010B	509273
LCS 240-509273/25-A	Lab Control Sample	Total Recoverable	Water	6010B	509273
240-158353-1 MS	MW-16-01	Total Recoverable	Water	6010B	509273
240-158353-1 MSD	MW-16-01	Total Recoverable	Water	6010B	509273

Analysis Batch: 509863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158353-1	MW-16-01	Total Recoverable	Water	6020	509273
240-158353-2	MW-16-02	Total Recoverable	Water	6020	509273
240-158353-3	MW-16-03	Total Recoverable	Water	6020	509273
240-158353-4	MW-16-04	Total Recoverable	Water	6020	509273
240-158353-5	DUP-01	Total Recoverable	Water	6020	509273
240-158353-6	EB-01	Total Recoverable	Water	6020	509273
MB 240-509273/1-A	Method Blank	Total Recoverable	Water	6020	509273
LCS 240-509273/2-A	Lab Control Sample	Total Recoverable	Water	6020	509273

General Chemistry

Analysis Batch: 509202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158353-1	MW-16-01	Total/NA	Water	SM 2540C	
240-158353-2	MW-16-02	Total/NA	Water	SM 2540C	
240-158353-3	MW-16-03	Total/NA	Water	SM 2540C	
240-158353-4	MW-16-04	Total/NA	Water	SM 2540C	
240-158353-5	DUP-01	Total/NA	Water	SM 2540C	
240-158353-6	EB-01	Total/NA	Water	SM 2540C	
MB 240-509202/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-509202/2	Lab Control Sample	Total/NA	Water	SM 2540C	

General Chemistry

Analysis Batch: 510882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158353-1	MW-16-01	Total/NA	Water	9056A	
240-158353-1	MW-16-01	Total/NA	Water	9056A	
240-158353-2	MW-16-02	Total/NA	Water	9056A	
240-158353-2	MW-16-02	Total/NA	Water	9056A	
240-158353-3	MW-16-03	Total/NA	Water	9056A	
240-158353-3	MW-16-03	Total/NA	Water	9056A	
240-158353-4	MW-16-04	Total/NA	Water	9056A	
240-158353-4	MW-16-04	Total/NA	Water	9056A	
240-158353-5	DUP-01	Total/NA	Water	9056A	
240-158353-5	DUP-01	Total/NA	Water	9056A	
240-158353-6	EB-01	Total/NA	Water	9056A	
MB 240-510882/45	Method Blank	Total/NA	Water	9056A	
LCS 240-510882/46	Lab Control Sample	Total/NA	Water	9056A	
240-158353-6 MS	EB-01	Total/NA	Water	9056A	
240-158353-6 MSD	EB-01	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-158353-1

Client Sample ID: MW-16-01

Lab Sample ID: 240-158353-1

Date Collected: 10/15/21 09:05

Matrix: Water

Date Received: 10/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509273	10/21/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509522	10/23/21 02:02	RKT	TAL CAN
Total Recoverable	Prep	3005A			509273	10/21/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509863	10/25/21 12:28	AJC	TAL CAN
Total/NA	Analysis	9056A		5	510882	11/02/21 13:46	JWW	TAL CAN
Total/NA	Analysis	9056A		20	510882	11/02/21 14:06	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	509202	10/21/21 07:57	AJ	TAL CAN

Client Sample ID: MW-16-02

Lab Sample ID: 240-158353-2

Date Collected: 10/15/21 13:12

Matrix: Water

Date Received: 10/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509273	10/21/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509522	10/23/21 02:20	RKT	TAL CAN
Total Recoverable	Prep	3005A			509273	10/21/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509863	10/25/21 12:31	AJC	TAL CAN
Total/NA	Analysis	9056A		5	510882	11/02/21 14:26	JWW	TAL CAN
Total/NA	Analysis	9056A		20	510882	11/02/21 14:46	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	509202	10/21/21 07:57	AJ	TAL CAN

Client Sample ID: MW-16-03

Lab Sample ID: 240-158353-3

Date Collected: 10/15/21 12:30

Matrix: Water

Date Received: 10/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509273	10/21/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509522	10/23/21 02:24	RKT	TAL CAN
Total Recoverable	Prep	3005A			509273	10/21/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509863	10/25/21 12:33	AJC	TAL CAN
Total/NA	Analysis	9056A		5	510882	11/02/21 15:06	JWW	TAL CAN
Total/NA	Analysis	9056A		20	510882	11/02/21 16:07	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	509202	10/21/21 07:57	AJ	TAL CAN

Client Sample ID: MW-16-04

Lab Sample ID: 240-158353-4

Date Collected: 10/15/21 11:30

Matrix: Water

Date Received: 10/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509273	10/21/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509522	10/23/21 02:28	RKT	TAL CAN
Total Recoverable	Prep	3005A			509273	10/21/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509863	10/25/21 12:36	AJC	TAL CAN
Total/NA	Analysis	9056A		5	510882	11/02/21 16:27	JWW	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE St. Clair Power

Job ID: 240-158353-1

Client Sample ID: MW-16-04

Lab Sample ID: 240-158353-4

Date Collected: 10/15/21 11:30

Matrix: Water

Date Received: 10/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		20	510882	11/02/21 16:47	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	509202	10/21/21 07:57	AJ	TAL CAN

Client Sample ID: DUP-01

Lab Sample ID: 240-158353-5

Date Collected: 10/15/21 00:00

Matrix: Water

Date Received: 10/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509273	10/21/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509522	10/23/21 02:33	RKT	TAL CAN
Total Recoverable	Prep	3005A			509273	10/21/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509863	10/25/21 12:38	AJC	TAL CAN
Total/NA	Analysis	9056A		5	510882	11/02/21 17:07	JWW	TAL CAN
Total/NA	Analysis	9056A		20	510882	11/02/21 17:27	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	509202	10/21/21 07:57	AJ	TAL CAN

Client Sample ID: EB-01

Lab Sample ID: 240-158353-6

Date Collected: 10/14/21 11:00

Matrix: Water

Date Received: 10/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509273	10/21/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509522	10/23/21 02:37	RKT	TAL CAN
Total Recoverable	Prep	3005A			509273	10/21/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509863	10/25/21 12:41	AJC	TAL CAN
Total/NA	Analysis	9056A		1	510882	11/02/21 17:47	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	509202	10/21/21 07:57	AJ	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation.
Job ID: 240-158353-1
Project/Site: CCR DTE St. Clair Power

Laboratory: Eurofins TestAmerica, Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Phone (330) 497-9396 Phone (330) 497-0772

0.7/0.8

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing America

Client Information	Sampler: JACOB JASSO	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-86591-33141.1
Client Contact: Jacob Krenz	Phone: 734 904 3310	E-Mail: Kris.Brooks@Eurofinset.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 #: TBD			
Email: JKrenz@trccompanies.com	WO #: 370029.0004 P1 T2			
Project Name: CCR DTE St. Clair Power	Project #: 24016804			
Site: Michigan	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C_Calcd TDS, 9056A_28D Chloride, Fluoride, Sulfate	6010B Bo, 6020 Ca, Fe	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D		
MW-16-01	10/13/21	0905	6	Water	N	N	T	T	2	
MW-16-02	11 11	1313	6	Water	N	N	T	T	2	
MW-16-03	11 11	1330	6	Water	N	N	T	T	2	
MW-16-04	11 11	1130	6	Water	N	N	T	T	2	
DUP-01	11 11	—	6	Water	N	N	T	T	2	
EB-01	10/14/21	1100	6	Water	N	N	T	T	2	
				Water						

240-158353 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		10/15/21 1530	TRC	TRC Storage	10/15/21 1530	TRC
2	TRC Storage	10-19-21/0600	TRC		10-19-21/0600	TRC
3		10-19-21/1415	TRC		10/19/21 1415	ETA

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

Cooler Temperature(s) °C and Other Remarks:

10-20-21 0800 ETA

Ver: 01/16/2019

11/3/2021

Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 15E3553

Client TRC Environmental Site Name _____

Cooler Received on 10-20-21 Opened on 10-20-21

Cooler unpacked by: JUSTIN H

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

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

TestAmerica Cooler # IA JMH 10-20-21 Foam Box Client Cooler Box Other _____

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

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

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-14 (CF +0.1 °C) Observed Cooler Temp. 0.7 °C Corrected Cooler Temp. 0.7 °C
   IR GUN #IR-15 (CF +0.2°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 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)? JMH 10-20-21	Yes	(No)
4. Did custody papers accompany the sample(s)?	(Yes)	No
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	(Yes)	No
7. Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes)	No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?		
10. Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11. Sufficient quantity received to perform indicated analyses?	(Yes)	No
12. Are these work share samples and all listed on the COC?	Yes	(No)
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	(Yes)	No NA pH Strip Lot# **HC157842**
14. Were VOAs on the COC?	Yes	(No)
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes	No (NA)
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes	(No)
17. Was a LL Hg or Me Hg trip blank present? _____	Yes	(No)

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

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

Concerning _____

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

Samples processed by: _____

19. SAMPLE CONDITION

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

20. SAMPLE PRESERVATION

Sample(s) _____ 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	240-158353-B-1	Plastic 500ml - with Nitric Acid	<2			
MW-16-02	240-158353-B-2	Plastic 500ml - with Nitric Acid	<2			
MW-16-03	240-158353-B-3	Plastic 500ml - with Nitric Acid	<2			
MW-16-04	240-158353-B-4	Plastic 500ml - with Nitric Acid	<2			
DUP-01	240-158353-B-5	Plastic 500ml - with Nitric Acid	<2			
EB-01	240-158353-B-6	Plastic 500ml - with Nitric Acid	<2			

Appendix B
Data Quality Reviews

Laboratory Data Quality Review
Groundwater Monitoring Event April 2021
DTE Electric Company St. Clair Power Plant (DTE SCPP)

Groundwater samples were collected by TRC for the April 2021 sampling event. Samples were analyzed for anions, total recoverable metals, and total dissolved solids by Eurofins-Test America Laboratories, Inc. (Eurofins-TA), located in North Canton, Ohio. The laboratory analytical results are reported in laboratory report 240-147490-1.

During the April 2021 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

Each sample was analyzed for the following constituents:

Analyte Group	Method
Anions (Chloride, Fluoride, Sulfate)	SW846 9056A
Total Recoverable Boron	SW846 3005A/6010B
Total Recoverable 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 Data Review (USEPA, 2017). 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.

Review Summary

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable for their intended purpose. A summary of the data quality review, including non-conformances and issues identified in this evaluation are noted below.

- Appendix III constituents and iron will be utilized for the purposes of a detection monitoring program.
- Data are usable for the purposes of the detection monitoring program.

QA/QC Sample Summary

- There was one equipment blank submitted with this dataset (EB-01). No target analytes were detected in the equipment blank.
- Target analytes were not detected in the method blanks.
- LCS recoveries for all target analytes were within laboratory control limits.
- MS/MSD analyses were not performed on a sample from this dataset.
- DUP-01 corresponds with MW-16-01; RPDs between the parent and duplicate sample were within the QC limits.
- The nondetect RL (2.0 mg/L) for sulfate in samples MW-16-01, MW-16-02, and DUP-01 was above the QAPP-specified RL (1.0 mg/L) due to a 2-fold dilution likely performed due to elevated concentrations of chloride. The nondetect RL (5.0 mg/L) for sulfate in samples MW-16-03 and MW-16-04 was above the QAPP-specified RL (1.0 mg/L) due to a 5-fold dilution likely performed due to elevated concentrations of chloride.

Laboratory Data Quality Review
Groundwater Monitoring Event October 2021
DTE Electric Company St. Clair Power Plant (DTE SCPP)

Groundwater samples were collected by TRC for the October 2021 sampling event. Samples were analyzed for anions, select total recoverable metals, and total dissolved solids by Eurofins-Test America Laboratories, Inc. (Eurofins-TA), located in North Canton, Ohio. The laboratory analytical results are reported in laboratory report 240-158353-1.

During the October 2021 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

Each sample was analyzed for the following constituents:

Analyte Group	Method
Anions (Chloride, Fluoride, Sulfate)	SW846 9056A
Total Recoverable Boron	SW846 3005A/6010B
Total Recoverable Calcium and Iron	SW846 3005A/6020
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 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. 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.

Review Summary

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable for their intended purpose. A summary of the data quality review, including non-conformances and issues identified in this evaluation are noted below.

- Appendix III constituents and iron will be utilized for the purposes of a detection monitoring program.
- Data are usable for the purposes of the detection monitoring program.

QA/QC Sample Summary

- The laboratory noted in the case narrative that the container for the TDS analysis of sample MW-16-02 was stored at room temperature overnight due to an oversight of the sample custodians. Therefore, potential low bias exists for the positive result for TDS in sample MW-16-02, as summarized in the attached table.
- There was one equipment blank submitted with this dataset (EB-01). No target analytes were detected in the equipment blank.
- Target analytes were not detected in the method blanks.
- LCS recoveries for all target analytes were within laboratory QC limits.
- MS/MSD analyses were performed on groundwater sample MW-16-01 for total recoverable boron and the equipment blank sample (EB-01) for anions. The percent recoveries (%Rs) and relative percent differences (RPDs) for the MS/MSD analyses met the method acceptance criteria.
- MS/MSD analyses were not performed on a groundwater sample for total recoverable calcium, total recoverable iron, and anions in this data set. Per the project quality assurance project plan (QAPP), MS/MSD analyses are required for total recoverable calcium and anions at a frequency of 1 per 20 samples. There is no MS/MSD QAPP requirement for total recoverable iron.
- Laboratory duplicate analyses were not performed on a groundwater sample for TDS. Per the project QAPP, laboratory duplicate analyses are required for TDS at a frequency of 1 per 20 samples.
- The field duplicate pair samples were MW-16-01 and DUP-01; RPDs between the parent and duplicate sample were within the QC limits.
- The RL for boron (100 µg/L) was below the RL specified in the QAPP of 200 µg/L. However, there is no impact on data usability due to this issue since all detected sample results for boron were > 200 µg/L.

- The nondetect RLs (5.0 mg/L) for sulfate in samples MW-16-01, MW-16-02, MW-16-03, and MW-16-04 were above the QAPP-specified RL (1.0 mg/L) due to a 5-fold dilution likely performed due to elevated concentrations of chloride.