2021 Annual Groundwater Monitoring Report

Monroe Power Plant Fly Ash Basin and Vertical Extension Landfill Coal Combustion Residual Units

January 2022

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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) Monroe Power Plant (MONPP) Coal Combustion Residual Fly Ash Basin and Vertical Extension Landfill (FAB & VEL) CCR units. 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 MONPP FAB & VEL CCR units.

DTE Electric remained in detection monitoring at the MONPP FAB & VEL CCR Units 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.

Potential SSIs over prediction limits were noted for several Appendix III constituents in one or more downgradient wells during the April and October 2021 monitoring events. However, these potential SSIs were not confirmed in verification sampling. Therefore, no SSIs were recorded for the 2021 monitoring period and detection monitoring will be continued at the MONPP FAB & VEL CCR units in accordance with §257.94. In addition, based on the artesian conditions, the low permeability of the underlying natural soils, and the calculated time of travel for groundwater to flow vertically from the MONPP FAB & VEL to the uppermost aquifer, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from FAB & VEL operations that began in 1975.

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) Monroe Power Plant (MONPP) Coal Combustion Residual Fly Ash Basin and Vertical Extension Landfill (FAB & VEL) CCR units. Pursuant to the CCR Rule, no later than January 31, 2018, and annually thereafter, the owner or operator of a CCR unit must prepare an annual groundwater monitoring and corrective action report for the CCR unit documenting the status of groundwater monitoring and corrective action for the preceding year in accordance with §257.90(e). On behalf of DTE Electric, TRC Engineers Michigan, Inc., the engineering entity of TRC, has prepared this 2021 Annual Groundwater Monitoring Report for calendar year 2021 activities at the MONPP FAB & VEL CCR units (2021 Annual Report).

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 MONPP FAB & VEL CCR units. Detection monitoring for these events continued to be performed in accordance with the *CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company Monroe Power Plant Coal Combustion Residual Fly Ash Basin* (QAPP) (TRC, August 2016; revised March 2017) and statistically evaluated per the *Groundwater Statistical Evaluation Plan –Monroe Power Plant Coal Combustion Residual Fly Ash Basin* (Stats Plan) (TRC, October 2017). As part of the statistical evaluation, the data collected during detection monitoring events are evaluated to identify SSIs of detection monitoring parameters compared to background levels.

Additional site characterization was completed in late 2020 and 2021, including additional soil borings, Cone Penetrometer Testing (CPT), soil sample collection for additional clay-rich soil laboratory hydraulic conductivity testing and additional slug testing (to measure the hydraulic conductivity of the uppermost aquifer in wells not previously tested) in support of the Preliminary Alternative Liner Demonstration (PALD) that was submitted to EPA on November 30, 2021 (Geosyntec 2021). The PALD concludes that there is no reasonable probability that water from FAB will cause releases to groundwater throughout the active life of the CCR unit at concentrations that will exceed the groundwater protection standard at the waste boundary.

1.2 Site Overview

The MONPP FAB & VEL is located about one mile southwest of the MONPP in Section 16, Township 7 South, Range 9 East at 7955 East Dunbar Road, Monroe, Monroe County, Michigan (Figure 1). The MONPP FAB & VEL is bounded by Dunbar Road and Plum Creek to the north and northeast, Interstate 75 to the northwest, a 200-acre peninsula into Lake Erie to the east and southeast, Lake Erie to the south, and a large open field to the southwest (Figure 2).

The property has been used continuously for the operation of the MONPP FAB & VEL since approximately 1975 and is constructed over a natural clay-rich soil base. The MONPP FAB & VEL are owned by DTE Electric, and currently receive coal ash from DTE Electric's MONPP. The MONPP FAB & VEL are operated in accordance with Michigan Part 115 of the Natural Resources and Environmental Protection Act (NREPA), PA 451 of 1994, as amended, and are licensed as a Coal Ash Surface Impoundment and a Coal Ash Landfill under the current operating license number 9579.

1.3 Geology/Hydrogeology

The MONPP FAB & VEL CCR units are located within 200 feet southwest of Plum Creek and immediately north of Lake Erie. The MONPP FAB & VEL CCR units uppermost aquifer consists of saturated limestone and a 5 to 10 foot thick layer of weathered limestone mixed with clay, sand, and/or gravel, both present beneath at least 14 to 34 feet of thick contiguous silty clay-rich soil that serves as a natural confining hydraulic barrier that isolates the underlying uppermost aquifer (TRC, 2017 and Geosyntec, 2021). The limestone bedrock aquifer is artesian in every location except MW-16-01, where the static water level was approximately 1 to 2 feet below ground surface (ft bgs).

Potentiometric groundwater elevation data from 2016 through 2021 suggest that there is horizontal groundwater flow potential within the upper aquifer unit generally to the northeast towards Plum Creek. The average hydraulic gradient to the northeast is on the order of 0.002 foot/foot along the eastern part of the MONPP FAB & VEL to 0.004 to 0.005 foot/foot in the center and northwestern part of the FAB & VEL, with an overall mean of 0.004 foot/foot.

2.0 Groundwater Monitoring

2.1 Monitoring Well Network

A groundwater monitoring system has been established for the MONPP FAB & VEL CCR units as detailed in the Groundwater Monitoring System Summary Report – Monroe Power Plant Coal Combustion Residual Fly Ash Basin (GWMS Report) (TRC, October 2017). The detection monitoring well network for the MONPP FAB & VEL CCR units currently consists of seven monitoring wells that are screened in the uppermost aquifer. Monitoring wells MW-16-01 through MW-16-07 are located around the perimeter of the MONPP FAB & VEL and provide data on both background and downgradient groundwater quality that has not been affected by the CCR units (total of seven background/downgradient monitoring wells). The monitoring well locations are shown on Figure 2.

2.2 Semiannual Groundwater Monitoring

The semiannual monitoring parameters for the detection 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, and total dissolved solids (TDS) and were analyzed in accordance with the sampling and analysis plan included within the QAPP. In addition to pH, the collected field parameters included dissolved oxygen, oxidation reduction potential, specific conductivity, temperature, and turbidity.

2.2.1 Data Summary

The first semiannual groundwater detection monitoring event for 2021 was performed April 5 and 6, 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 seven monitoring well locations. Groundwater samples were collected from the seven detection monitoring wells for the Appendix III indicator parameters and field parameters. A summary of the groundwater data collected during the April 2021 event is provided on Table 1 (static groundwater elevation data), Table 2 (field data), and Table 3 (analytical results).

The second semiannual groundwater detection monitoring event for 2021 was performed on October 6 and 7, 2021 by TRC personnel and samples were analyzed by Eurofins in accordance with the QAPP. Static water elevation data were collected at all seven monitoring well locations. Groundwater samples were collected from the seven detection monitoring wells for the Appendix III indicator parameters and field parameters. A summary of the groundwater data collected during the October 2021 event is provided on Table 1 (static groundwater elevation data), Table 2 (field data), and Table 4 (analytical results). The laboratory analytical reports are included in Appendix A.

2.2.2 Data Quality Review

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

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

2.2.3 Groundwater Flow Rate and Direction

Groundwater elevation data collected during the April and October 2021 sampling events continue to show that groundwater within the uppermost aquifer generally flows to the northeast across the Site. Groundwater potentiometric surface elevations measured across the Site during the April and October 2021 sampling events are provided on 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 gradients throughout the MONPP FAB/VEL CCR units during the April and October 2021 events was approximately 0.004 ft/ft. Using the average hydraulic conductivity of 14 feet/day (TRC, 2017 and Geosyntec, 2021) and an assumed effective porosity of 0.1, the estimated seepage velocity for the April and October 2021 events is 0.56 feet/day (approximately 205 feet/year).

The general flow rate and direction from both events are similar to that identified in previous monitoring rounds and continues to demonstrate that the downgradient wells are appropriately positioned to detect the presence of Appendix III parameters that could potentially migrate from the MONPP FAB & VEL CCR units.

3.0 Statistical Evaluation

3.1 Establishing Background Limits

As discussed in the Stats Plan, intrawell statistical methods for MONPP FAB & VEL were selected based on the geology and hydrogeology at the Site (primarily the presence of clay/hydraulic barrier and the hydraulic separation between the CCR units and underlying uppermost aquifer), in addition to other supporting lines of evidence that the aquifer is unaffected by the CCR units (such as the consistency in concentrations of water quality data). An intrawell statistical approach requires that each downgradient well doubles as a background and compliance well, where data from each individual well during a detection monitoring event is compared to a statistical limit developed using the background dataset from that same well.

Per the Stats Plan, background limits were established for the Appendix III indicator parameters following the collection of at least eight background monitoring events using data collected from each of the seven established detection monitoring wells (MW-16-01 through MW-16-07). The initial statistical evaluation of the background data is presented in the 2017 Annual Report (TRC, January 2018). 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 MONPP FAB & VEL CCR units by comparing concentrations in the detection monitoring wells to their respective background limits for each Appendix III indicator parameter. Prediction limits are periodically updated to reflect the additional data and additional temporal variability observed over time. The Appendix III prediction limits at MONPP FAB & VEL were updated in December 2021 to incorporate additional data since 2017 as presented in the December 15, 2021 Technical Memorandum, *Prediction Limit Update – DTE Electric Company, Monroe Power Plant Fly Ash Basin and Vertical Extension Landfill* included as Appendix C. The updated prediction limits were used to statistically evaluate the Appendix III indicator parameter data for the second semiannual 2021 detection monitoring event.

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

The concentrations of the indicator parameters in each of the detection monitoring wells (MW-16-01 through MW-16-07) were compared to their respective statistical background limits calculated from the background data collected from each individual well (i.e., monitoring data from MW-16-01 is compared to the background limit developed using the background dataset from MW-16-01, and so forth). The comparisons for the April detection monitoring event are presented on Table 3. The statistical evaluation of the April 2021 Appendix III indicator parameters showed a potential SSI over background for:

- Total dissolved solids (TDS) at MW-16-03.

3.3 Verification Resampling for the First 2021 Semiannual Event

Verification resampling is performed per the Stats Plan and the *USEPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (Unified Guidance, USEPA, 2009) to achieve performance standards as specified by §257.93(g) in the CCR rules. Per the

Stats Plan, if there is an exceedance of a prediction limit for one or more of the parameters, the well(s) of concern will be resampled within 30 days of the completion of the initial statistical analysis. Constituents that have been addressed through an alternative source demonstration (ASD) will not be analyzed for verification purposes.

Verification resampling was conducted on June 9, 2021, by TRC personnel. A groundwater sample was collected for TDS at monitoring well MW-16-03 in accordance with the QAPP. A summary of the groundwater data collected during the verification event is provided on Table 3. The associated data quality review is included in Appendix B.

The verification result for TDS at MW-16-03 is within the prediction limits, consequently the initial potential SSI for the April 2021 detection monitoring event is not confirmed. Therefore, in accordance with the Stats Plan and the Unified Guidance, the initial exceedances are not statistically significant, and there are no SSIs for the April 2021 detection monitoring event.

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

The concentrations of the indicator parameters in each of the detection monitoring wells (MW 16-01 through MW-16-07) were compared to their respective statistical background limits 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 data comparisons for the October 2021 groundwater monitoring event are presented on Table 4. The statistical evaluation of the October 2021 Appendix III indicator parameters showed potential initial SSIs over background for:

- Calcium at MW-16-02, MW-16-04, and MW-16-07.

3.5 Verification Resampling for the Second 2021 Semiannual Event

Verification resampling was conducted on December 8, 2021, by TRC personnel. Groundwater samples were collected for calcium at monitoring wells MW-16-02, MW-16-04, and MW-16-07 in accordance with the QAPP. A summary of the groundwater data collected during the verification resampling event is provided on Table 4. The associated data quality review is included in Appendix B.

The verification results for calcium at MW-16-02, MW-16-04, and MW-16-07 are below the prediction limits, consequently the initial potential SSIs for the October 2021 detection monitoring event are not confirmed. Therefore, in accordance with the Stats Plan and the Unified Guidance, the initial exceedances are not statistically significant, and there are no SSIs for the October 2021 detection monitoring event. Detection monitoring will be continued at the MONPP FAB & VEL CCR units in accordance with §257.94 of the CCR Rule.

4.0 Conclusions and Recommendations

Potential SSIs over background limits were noted for TDS (in one well during the April 2021 sampling event) and calcium (in three wells during the October 2021 sampling event) in one or more groundwater monitoring wells during the 2021 semiannual groundwater monitoring events. However, these potential SSIs were not confirmed in verification sampling. Therefore, there are no SSIs for the 2021 monitoring period and detection monitoring will be continued at the MONPP FAB & VEL in accordance with §257.94.

In addition, as discussed above, and in the GWMS Report, based on the artesian conditions, the low permeability of the underlying natural soils, and the calculated time of travel for groundwater to flow vertically from the MONPP FAB & VEL to the uppermost aquifer, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from FAB & VEL operations that began in 1975.

No corrective actions were performed in 2021. The next semiannual monitoring event at the MONPP FAB & VEL CCR units is scheduled for the second calendar quarter of 2022.

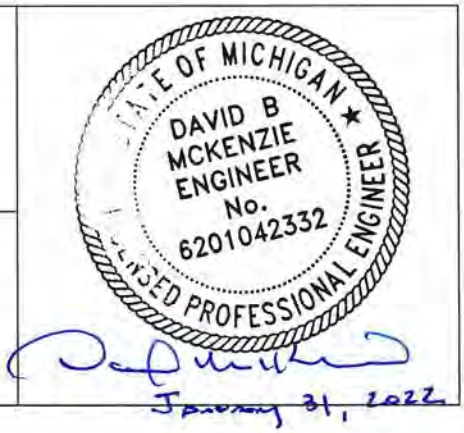
5.0 Groundwater Monitoring Report Certification

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
Monroe Power Plant Fly Ash Basin and Vertical Extension Landfill
Monroe, Michigan

CERTIFICATION

I hereby certify that the annual groundwater and corrective action report presented within this document for the MONPP FAB & VEL CCR units 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	

6.0 References

Geosyntec Consultants (Geosyntec). November 2021. Preliminary Alternative Liner Demonstration Fly Ash Basin Monroe Power Plant, DTE Electric Company Monroe Power Plant Fly Ash Basin and vertical Extension Landfill Coal Combustion Residuals Unit, 7955 East Dunbar Road, Monroe, Michigan.

TRC. August 2016; Revised March 2017. CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company Monroe Power Plant Coal Combustion Residual Fly Ash Basin, 7955 East Dunbar Road, Monroe, Michigan. Prepared for DTE Electric Company.

TRC. October 2017. Groundwater Monitoring System Summary Report – Monroe Power Plant Coal Combustion Residual Fly Ash Basin, 7955 East Dunbar Road, Monroe, Michigan. Prepared for DTE Electric Company.

TRC. October 2017. Groundwater Statistical Evaluation Plan –Monroe Power Plant Coal Combustion Residual Fly Ash Basin, 7955 East Dunbar Road, Monroe, Michigan. Prepared for DTE Electric Company.

TRC. January 2018. Annual Groundwater Monitoring Report – DTE Electric Company Monroe Power Plant Fly Ash Basin Coal Combustion Residual Unit, 7955 East Dunbar Road, Monroe, Michigan. Prepared for DTE Electric Company.

TRC. January 2020. 2019 Annual Groundwater Monitoring Report – DTE Electric Company, Monroe Power Plant Fly Ash Basin and Vertical Extension Landfill, Coal Combustion Residual Unit. Prepared for DTE Electric Company

TRC. December 15, 2021. Prediction Limit Update – DTE Electric Company, Monroe Power Plant Fly Ash Basin and Vertical Extension Landfill. Prepared for DTE Electric Company

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

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

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

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

Tables

Table 1
Groundwater Elevation Summary – April and October 2021
Monroe Power Plant Fly Ash Basin and Vertical Extension Landfill – RCRA CCR Monitoring Program
Monroe, Michigan

Well ID	MW-16-01		MW-16-02		MW-16-03		MW-16-04		MW-16-05		MW-16-06		MW-16-07	
Date Installed	2/17/2016		2/18/2016		2/16/2016		2/15/2016		4/13/2016		4/13/2016		4/14/2016	
TOC Elevation	581.74		581.81		579.95		585.54		580.42		581.94		578.40	
Geologic Unit of Screened Interval	Silt/Limestone Interface		Silt/Limestone Interface		Sand & Silty Clay Limestone Interface		Silty Sand and Gravel		Limestone		Gravel and Cobbles		Silt/Limestone Interface	
Screened Interval Elevation	530.9 to 525.9		526.4 to 521.4		540.3 to 535.3		541.6 to 536.6		540.5 to 535.5		534.2 to 529.2		540.4 to 535.4	
Unit	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft
Measurement Date	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation
04/05/2021	4.73	577.01	-2.10	583.91	-9.79	589.74	-13.44	598.98	-14.04	594.46	0.32	581.62	-5.66	584.06
10/06/2021	4.45	577.29	-2.77	584.58	-10.51	590.46	-14.46	600.00	-15.29	595.71	-0.15	582.09	-7.30	585.70

Notes:

Negative depth to water measurement indicates artesian conditions, actual measured water level is above the top of casing.

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

ft BTOC - feet below top of casing

Table 2
Summary of Field Parameters – April and October 2021
Monroe Power Plant Fly Ash Basin and Vertical Extension Landfill – RCRA CCR Monitoring Program
Monroe, 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	4/6/2021	1.87	82.2	6.9	1,839	10.9	2.87
	10/7/2021	0.55	-3.7	7.1	2,230	13.5	1.06
MW-16-02	4/6/2021	1.46	56.7	6.9	1,875	10.4	11.70
	10/6/2021	0.20	-66.7	7.0	1,288	11.8	13.50
	12/8/2021[(2)]	0.88	-22.5	7.2	1,700	10.7	2.38
MW-16-03	4/5/2021	1.49	21.1	6.9	1,925	11.5	19.40
	6/9/2021[(1)]	1.59	-2.1	6.9	2,454	12.6	11.40
	10/6/2021	0.30	-53.5	7.0	2,452	12.5	9.91
MW-16-04	4/5/2021	1.68	28.3	7.1	1,827	11.0	2.15
	10/6/2021	0.25	-249.6	7.0	2,327	11.1	1.99
	12/8/2021[(2)]	0.95	-110.0	7.3	1,673	10.8	1.16
MW-16-05	4/5/2021	1.55	21.6	6.9	1,825	11.7	7.14
	10/6/2021	0.30	-134.6	7.0	2,298	11.8	4.55
MW-16-06	4/6/2021	1.81	3.0	7.1	2,476	12.3	0.11
	10/7/2021	0.47	-15.0	7.0	2,360	15.2	44.60
MW-16-07	4/5/2021	1.57	24.1	6.9	1,821	11.8	3.14
	10/6/2021	0.29	-117.2	7.0	2,252	12.4	4.29
	12/8/2021[(2)]	2.24	-13.3	7.0	1,819	11.6	17.75

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.

(1) Results shown for verification sampling performed on 6/9/2021.

(2) Results shown for verification sampling performed on 12/8/2021.

Table 3
Comparison of Appendix III Parameter Results to Background Limits – April 2021
Monroe Power Plant Fly Ash Basin and Vertical Extension Landfill – RCRA CCR Monitoring Program
Monroe, Michigan

Sample Location:		MW-16-01		MW-16-02		MW-16-03			MW-16-04		MW-16-05		MW-16-06		MW-16-07	
Sample Date:		4/6/2021	PL	4/6/2021	PL	4/5/2021	6/9/2021	PL	4/5/2021	PL	4/5/2021	PL	4/6/2021	PL	4/5/2021	PL
Constituent	Unit	Data		Data		Data			Data		Data		Data		Data	
Appendix III																
Boron	ug/L	230	310	360	470	400	--	510	140	210	190	280	320	400	160	280
Calcium	ug/L	390,000	450,000	390,000	430,000	420,000	--	490,000	540,000	610,000	380,000	440,000	380,000	420,000	380,000	440,000
Chloride	mg/L	10	14	13	15	18	--	20	34	39	11	12	12	12	7.7	13
Fluoride	mg/L	1.7	2.1	1.5	1.8	1.5	--	1.8	0.98	1.1	1.4	1.7	1.5	1.8	1.4	1.8
pH, Field	SU	6.9	6.3 - 9.0	6.9	6.9 - 7.3	6.9	6.9	6.7 - 7.3	7.1	7.0 - 7.5	6.9	6.6 - 7.7	7.1	7.0 - 7.3	6.9	6.9 - 7.4
Sulfate	mg/L	1,400	1,500	1,400	1,700	1,500	--	1,700	1,300	1,500	1,300	1,600	1,400	1,600	1,400	1,600
Total Dissolved Solids	mg/L	2,100	2,200	2,100	2,300	**2,400**	2,300	2,300	2,000	2,200	2,200	2,200	2,200	2,300	2,000	2,200

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
Monroe Power Plant Fly Ash Basin and Vertical Extension Landfill – RCRA CCR Monitoring Program
Monroe, Michigan

Sample Location:		MW-16-01		MW-16-02			MW-16-03		MW-16-04			MW-16-05		MW-16-06		MW-16-07		
Sample Date:		10/7/2021	PL[1]	10/6/2021	12/8/2021[2]	PL[1]	10/6/2021	PL[1]	10/6/2021	12/8/2021[2]	PL[1]	10/6/2021	PL[1]	10/7/2021	PL[1]	10/6/2021	12/8/2021[2]	PL[1]
Constituent	Unit	Data		Data			Data		Data			Data		Data		Data		
Appendix III																		
Boron	ug/L	230	300	360	--	450	370	500	140	--	210	190	270	280	390	150	--	250
Calcium	ug/L	430,000	440,000	**450,000**	390,000	430,000	450,000	470,000	**620,000**	530,000	600,000	440,000	440,000	420,000	420,000	**450,000**	390,000	440,000
Chloride	mg/L	11	12	14	--	15	19	20	36	--	36	12	12	8.2	12	12	--	12
Fluoride	mg/L	1.8	1.8	1.6	--	1.7	1.6	1.7	1.0	--	1.1	1.5	1.6	1.5	1.7	1.6	--	1.7
pH, Field	SU	7.1	6.9 - 8.6	7.0	--	6.9 - 7.3	7.0	6.7 - 7.3	7.0	--	7.0 - 7.5	7.0	6.9 - 7.7	7.0	7.0 - 7.3	7.0	--	6.9 - 7.4
Sulfate	mg/L	1,600	1,600	1,600	--	1,700	1,700	1,700	1,400	--	1,500	1,600	1,600	1,600	1,600	1,600	--	1,600
Total Dissolved Solids	mg/L	2,200	2,200	2,200	--	2,300	2,300	2,400	2,100	--	2,300	2,000	2,200	2,100	2,300	2,200	--	2,200

Notes:

ug/L - micrograms per liter.

mg/L - milligrams per liter.

SU - standard units; pH is a field parameter.

-- = not analyzed

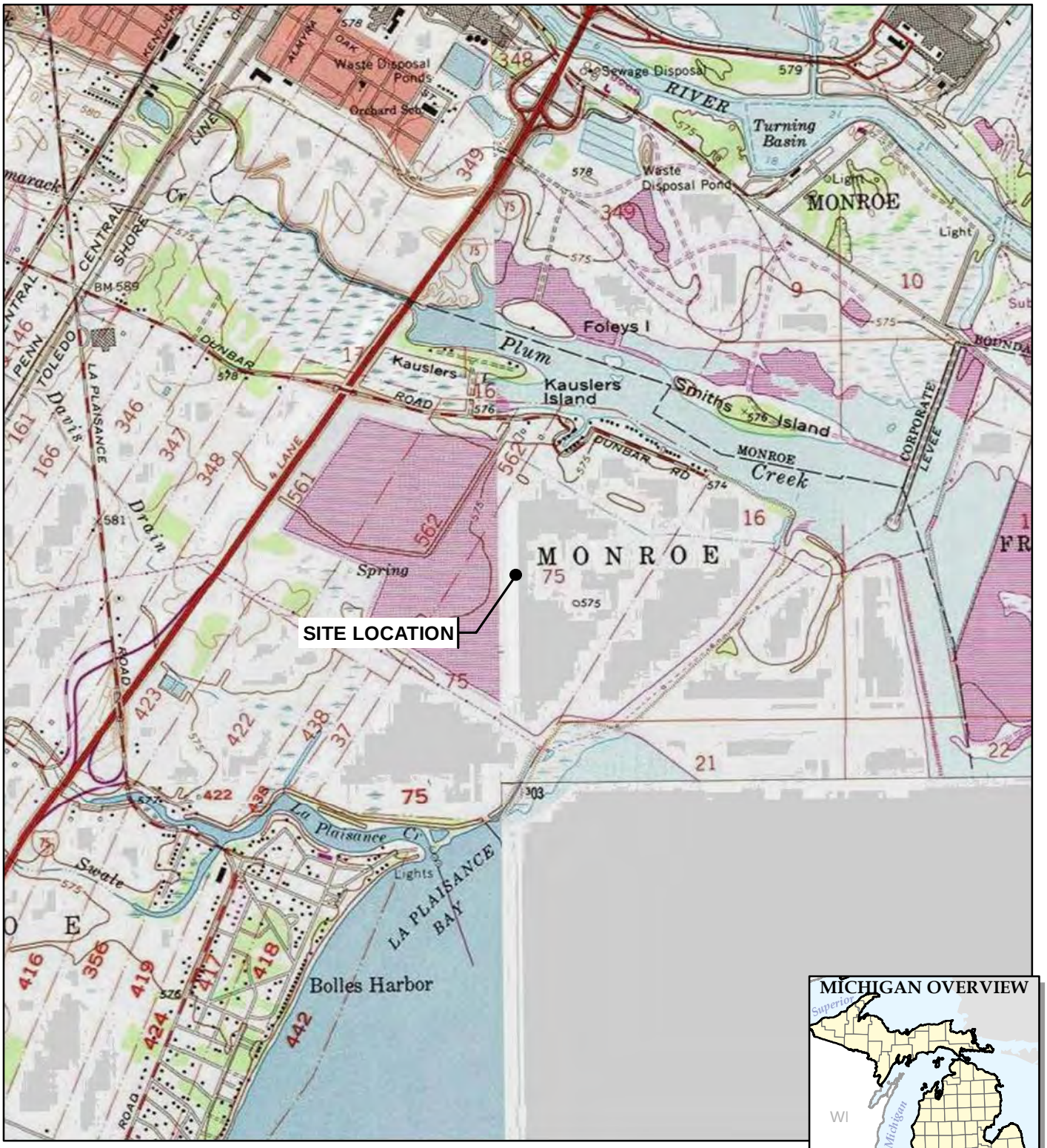
All metals were analyzed as total unless otherwise specified.

Bold font indicates an exceedance of the Prediction Limit (PL).

(1) Prediction limits updated December 15, 2021.

(2) Results shown for verification sampling performed on December 8, 2021.

Figures



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

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

0 2,000 4,000
FEET

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

PROJECT:
DTE ELECTRIC COMPANY
MONROE POWER PLANT
FLY ASH BASIN AND VERTICAL EXTENSION LANDFILL
7955 EAST DUNBAR ROAD
MONROE, MICHIGAN

TITLE:
SITE LOCATION MAP

DRAWN BY:	A. FOJTIK
CHECKED BY:	B. YELEN
APPROVED BY:	V. BUENING
DATE:	JANUARY 2022
PROJ. NO.:	413591.0001
FILE:	413591-0001-004SLM.mxd

FIGURE 1

E:\Projects\DTE\CCR_Sites\2017_265996\413591-0001-004SLM.mxd -- Saved By: AFOJTIK on 11/11/2021, 10:57:32 AM

LEGEND

- MONITORING WELLS
- APPROXIMATE BOUNDARY OF FLY ASH BASIN
- APPROXIMATE BOUNDARY OF VERTICAL EXTENSION LANDFILL

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, 2021.
2. WELL LOCATIONS SURVEYED BY BMJ ENGINEERS AND SURVEYORS INC. IN MARCH AND MAY 2016.

0 600 1,200 Feet

1 " = 600 '

1:7,200

PROJECT:
DTE ELECTRIC COMPANY
MONROE POWER PLANT
FLY ASH BASIN AND VERTICAL EXTENSION LANDFILL
7955 EAST DUNBAR ROAD
MONROE, MICHIGAN

TITLE:
MONITORING NETWORK AND SITE PLAN

DRAWN BY:	A. FOJTIK	PROJ NO.:	413591.0001
CHECKED BY:	B. YELEN		
APPROVED BY:	V. BUENING		**FIGURE 2**
DATE:	JANUARY 2022		

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

FILE NO.: 413591-0001-002fd_20211111.mxd

TRC - GIS
Coordinate System: NAD 1983 UTM Zone 17N (Meter)
Map Rotation: 0
Plot Date: 1/21/2022, 18:14:41 PM by AFOJTIK -- LAYOUT:ANSI B(11"x17")
Path: E:\Projects\DTE\CCR_Sites\2017_265996\413591-0001-002fd_20211111.mxd

LEGEND

- MONITORING WELL
- APPROXIMATE BOUNDARY OF FLY ASH BASIN
- APPROXIMATE BOUNDARY OF VERTICAL EXTENSION LANDFILL
- Dashed Line
- Solid Line
- (582.84) STATIC WATER ELEVATION IN FEET (NAVD, 1988)

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, 2021.
2. WELL LOCATIONS SURVEYED BY BMJ ENGINEERS AND SURVEYORS INC. IN MARCH AND MAY 2016.
3. GROUNDWATER ELEVATIONS DISPLAYED IN FEET RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988.

0 600 1,200 Feet

1 " = 600 '

1:7,200

PROJECT:
DTE ELECTRIC COMPANY
MONROE POWER PLANT
FLY ASH BASIN AND VERTICAL EXTENSION LANDFILL
7955 EAST DUNBAR ROAD
MONROE, MICHIGAN

TITLE:
POTENTIOMETRIC SURFACE MAP
APRIL 2021

DRAWN BY:	A. FOJTIK	PROJ NO.:	413591.0001
CHECKED BY:	B. YELEN		
APPROVED BY:	V. BUENING		FIGURE 3
DATE:	JANUARY 2022		

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

FILE NO.: 413591-0001-003fd_20211111.mxd

Plot Date: 1/21/2022, 18:19:56 PM by AFOJTIK -- LAYOUT: ANSI B(11"x17")
Path: E:\Projects\DTE\CCR_Sites\2017_265996\413591-0001-003fd_20211111.mxd
Coordinate System: NAD 1983 UTM Zone 17N (Meter)
Map Rotation: 0

TRC - GIS

LEGEND

- MONITORING WELL
- APPROXIMATE BOUNDARY OF FLY ASH BASIN
- APPROXIMATE BOUNDARY OF VERTICAL EXTENSION LANDFILL
- Dashed Line
- Solid Line
- (582.84) STATIC WATER ELEVATION IN FEET (NAVD, 1988)

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, 2021.
2. WELL LOCATIONS SURVEYED BY BMJ ENGINEERS AND SURVEYORS INC. IN MARCH AND MAY 2016.
3. GROUNDWATER ELEVATIONS DISPLAYED IN FEET RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988.
4. SURFACE WATER SAMPLE LOCATION IS APPROXIMATE.

0 600 1,200 Feet

1 " = 600 '

1:7,200

PROJECT:
DTE ELECTRIC COMPANY
MONROE POWER PLANT
FLY ASH BASIN AND VERTICAL EXTENSION LANDFILL
7955 EAST DUNBAR ROAD
MONROE, MICHIGAN

TITLE:
POTENTIOMETRIC SURFACE MAP
OCTOBER 2021

DRAWN BY:	A. FOJTIK	PROJ NO.:	413591.0001
CHECKED BY:	B. YELEN		
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.: 413591-0001-004fdt_20211111.mxd

Plot Date: 1/21/2022, 18:17:04 PM by AFOJTIK -- LAYOUT: ANSI B(11"x17")
Path: E:\Projects\DTE\CCR_Sites\2017_265996\413591-0001-004fdt_20211111.mxd
Coordinate System: NAD 1983 UTM Zone 17N (Meter)
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: 240-147159-1
Client Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

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

Attn: Mr. Vincent Buening

Authorized for release by:
4/16/2021 7:38:02 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

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: 240-147159-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-147159-1

Comments
No additional comments.

Receipt
The samples were received on 4/8/2021 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
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: TRC Environmental Corporation. Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

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.
Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-147159-1	MW-16-01	Water	04/06/21 09:08	04/08/21 08:00	
240-147159-2	MW-16-02	Water	04/06/21 09:59	04/08/21 08:00	
240-147159-3	MW-16-03	Water	04/05/21 16:12	04/08/21 08:00	
240-147159-4	MW-16-04	Water	04/05/21 15:00	04/08/21 08:00	
240-147159-5	MW-16-05	Water	04/05/21 15:23	04/08/21 08:00	
240-147159-6	MW-16-06	Water	04/06/21 13:44	04/08/21 08:00	
240-147159-7	MW-16-07	Water	04/05/21 14:07	04/08/21 08:00	
240-147159-8	DUP-01	Water	04/05/21 00:00	04/08/21 08:00	
240-147159-9	MP-001F	Water	04/06/21 09:39	04/08/21 08:00	

Detection Summary

Client: TRC Environmental Corporation.
Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: MW-16-01 — Lab Sample ID: 240-147159-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	230		100	100	ug/L	1		6010B	Total Recoverable
Calcium	390000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	150		100	100	ug/L	1		6020	Total Recoverable
Chloride	10		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.7		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1400		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2100		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02 — Lab Sample ID: 240-147159-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	360		100	100	ug/L	1		6010B	Total Recoverable
Calcium	390000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	490		100	100	ug/L	1		6020	Total Recoverable
Chloride	13		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.5		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1400		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2100		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03 — Lab Sample ID: 240-147159-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	400		100	100	ug/L	1		6010B	Total Recoverable
Calcium	420000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	1100		100	100	ug/L	1		6020	Total Recoverable
Chloride	18		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.5		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1500		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2400		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-04 — Lab Sample ID: 240-147159-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	140		100	100	ug/L	1		6010B	Total Recoverable
Calcium	540000		1000	1000	ug/L	1		6020	Total Recoverable
Chloride	34		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.98		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1300		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2000		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-05 — Lab Sample ID: 240-147159-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	190		100	100	ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: MW-16-05 (Continued) — Lab Sample ID: 240-147159-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	380000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	1100		100	100	ug/L	1		6020	Total Recoverable
Chloride	11		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.4		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1300		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2200		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-06 — Lab Sample ID: 240-147159-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	320		100	100	ug/L	1		6010B	Total Recoverable
Calcium	380000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	530		100	100	ug/L	1		6020	Total Recoverable
Chloride	12		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.5		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1400		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2200		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-07 — Lab Sample ID: 240-147159-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	160		100	100	ug/L	1		6010B	Total Recoverable
Calcium	380000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	770		100	100	ug/L	1		6020	Total Recoverable
Chloride	7.7		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.4		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1400		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2000		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01 — Lab Sample ID: 240-147159-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	160		100	100	ug/L	1		6010B	Total Recoverable
Calcium	390000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	800		100	100	ug/L	1		6020	Total Recoverable
Chloride	7.7		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.4		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1400		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2200		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MP-001F — Lab Sample ID: 240-147159-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100	100	ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: MP-001F (Continued) Lab Sample ID: 240-147159-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	150000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	390		100	100	ug/L	1		6020	Total Recoverable
Chloride	34		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.68		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	360		5.0	5.0	mg/L	5		9056A	Total/NA
Total Dissolved Solids	700		10	10	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: MW-16-01 Lab Sample ID: 240-147159-1

Date Collected: 04/06/21 09:08 **Matrix: Water**
Date Received: 04/08/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	230		100	100	ug/L		04/09/21 14:00	04/13/21 13:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	390000		1000	1000	ug/L		04/09/21 14:00	04/12/21 21:39	1
Iron	150		100	100	ug/L		04/09/21 14:00	04/12/21 21:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10		1.0	1.0	mg/L			04/14/21 04:13	1
Fluoride	1.7		0.050	0.050	mg/L			04/14/21 04:13	1
Sulfate	1400		10	10	mg/L			04/14/21 04:33	10
Total Dissolved Solids	2100		20	20	mg/L			04/13/21 08:49	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: MW-16-02 Lab Sample ID: 240-147159-2

Date Collected: 04/06/21 09:59 **Matrix: Water**
Date Received: 04/08/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	360		100	100	ug/L		04/09/21 14:00	04/13/21 13:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	390000		1000	1000	ug/L		04/09/21 14:00	04/12/21 21:41	1
Iron	490		100	100	ug/L		04/09/21 14:00	04/12/21 21:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13		1.0	1.0	mg/L			04/14/21 04:53	1
Fluoride	1.5		0.050	0.050	mg/L			04/14/21 04:53	1
Sulfate	1400		10	10	mg/L			04/14/21 05:13	10
Total Dissolved Solids	2100		20	20	mg/L			04/13/21 08:49	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: MW-16-03 — Lab Sample ID: 240-147159-3

Date Collected: 04/05/21 16:12 — **Matrix: Water**
Date Received: 04/08/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	400		100	100	ug/L		04/09/21 14:00	04/13/21 13:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	420000		1000	1000	ug/L		04/09/21 14:00	04/12/21 21:44	1
Iron	1100		100	100	ug/L		04/09/21 14:00	04/12/21 21:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	18		1.0	1.0	mg/L			04/14/21 06:14	1
Fluoride	1.5		0.050	0.050	mg/L			04/14/21 06:14	1
Sulfate	1500		10	10	mg/L			04/14/21 06:34	10
Total Dissolved Solids	2400		20	20	mg/L			04/09/21 13:17	1

Client: TRC Environmental Corporation.
Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: MW-16-04
Lab Sample ID: 240-147159-4
Date Collected: 04/05/21 15:00
Matrix: Water
Date Received: 04/08/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	140		100	100	ug/L		04/09/21 14:00	04/13/21 13:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	540000		1000	1000	ug/L		04/09/21 14:00	04/12/21 21:46	1
Iron	100	U	100	100	ug/L		04/09/21 14:00	04/12/21 21:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34		1.0	1.0	mg/L			04/14/21 06:54	1
Fluoride	0.98		0.050	0.050	mg/L			04/14/21 06:54	1
Sulfate	1300		10	10	mg/L			04/14/21 07:14	10
Total Dissolved Solids	2000		20	20	mg/L			04/09/21 13:17	1

Client: TRC Environmental Corporation.
Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: MW-16-05
Lab Sample ID: 240-147159-5
Date Collected: 04/05/21 15:23
Matrix: Water
Date Received: 04/08/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	190		100	100	ug/L		04/09/21 14:00	04/13/21 13:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	380000		1000	1000	ug/L		04/09/21 14:00	04/12/21 21:49	1
Iron	1100		100	100	ug/L		04/09/21 14:00	04/12/21 21:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11		1.0	1.0	mg/L			04/14/21 07:34	1
Fluoride	1.4		0.050	0.050	mg/L			04/14/21 07:34	1
Sulfate	1300		10	10	mg/L			04/14/21 07:54	10
Total Dissolved Solids	2200		20	20	mg/L			04/12/21 11:32	1

Client: TRC Environmental Corporation.
Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: MW-16-06
Lab Sample ID: 240-147159-6
Date Collected: 04/06/21 13:44
Matrix: Water
Date Received: 04/08/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	320		100	100	ug/L		04/09/21 14:00	04/13/21 12:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	380000		1000	1000	ug/L		04/09/21 14:00	04/12/21 20:06	1
Iron	530		100	100	ug/L		04/09/21 14:00	04/12/21 20:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12		1.0	1.0	mg/L			04/14/21 08:14	1
Fluoride	1.5		0.050	0.050	mg/L			04/14/21 08:14	1
Sulfate	1400		10	10	mg/L			04/14/21 08:34	10
Total Dissolved Solids	2200		20	20	mg/L			04/13/21 08:49	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: MW-16-07 Lab Sample ID: 240-147159-7

Date Collected: 04/05/21 14:07 **Matrix: Water**
Date Received: 04/08/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	160		100	100	ug/L		04/09/21 14:00	04/13/21 14:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	380000		1000	1000	ug/L		04/09/21 14:00	04/12/21 21:51	1
Iron	770		100	100	ug/L		04/09/21 14:00	04/12/21 21:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.7		1.0	1.0	mg/L			04/14/21 08:55	1
Fluoride	1.4		0.050	0.050	mg/L			04/14/21 08:55	1
Sulfate	1400		10	10	mg/L			04/14/21 09:15	10
Total Dissolved Solids	2000		20	20	mg/L			04/12/21 11:32	1

Client: TRC Environmental Corporation.
Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: DUP-01
Lab Sample ID: 240-147159-8
Date Collected: 04/05/21 00:00
Matrix: Water
Date Received: 04/08/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	160		100	100	ug/L		04/09/21 14:00	04/13/21 14:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	390000		1000	1000	ug/L		04/09/21 14:00	04/12/21 21:54	1
Iron	800		100	100	ug/L		04/09/21 14:00	04/12/21 21:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.7		1.0	1.0	mg/L			04/14/21 10:55	1
Fluoride	1.4		0.050	0.050	mg/L			04/14/21 10:55	1
Sulfate	1400		10	10	mg/L			04/14/21 11:56	10
Total Dissolved Solids	2200		20	20	mg/L			04/12/21 11:32	1

Client: TRC Environmental Corporation.
Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: MP-001F
Lab Sample ID: 240-147159-9
Date Collected: 04/06/21 09:39
Matrix: Water
Date Received: 04/08/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100	100	ug/L		04/09/21 14:00	04/13/21 14:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	150000		1000	1000	ug/L		04/09/21 14:00	04/12/21 21:56	1
Iron	390		100	100	ug/L		04/09/21 14:00	04/12/21 21:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34		1.0	1.0	mg/L			04/14/21 12:56	1
Fluoride	0.68		0.050	0.050	mg/L			04/14/21 12:56	1
Sulfate	360		5.0	5.0	mg/L			04/14/21 13:16	5
Total Dissolved Solids	700		10	10	mg/L			04/13/21 08:49	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-480507/1-A
Matrix: Water
Analysis Batch: 481083

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 480507

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	100	ug/L		04/09/21 14:00	04/13/21 12:02	1

Lab Sample ID: LCS 240-480507/2-A
Matrix: Water
Analysis Batch: 481083

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 480507

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

Lab Sample ID: 240-147159-6 MS
Matrix: Water
Analysis Batch: 481083

Client Sample ID: MW-16-06
Prep Type: Total Recoverable
Prep Batch: 480507

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	320		1000	1290		ug/L		96	75 - 125

Lab Sample ID: 240-147159-6 MSD
Matrix: Water
Analysis Batch: 481083

Client Sample ID: MW-16-06
Prep Type: Total Recoverable
Prep Batch: 480507

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	320		1000	1260		ug/L		93	75 - 125	2	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-480507/1-A
Matrix: Water
Analysis Batch: 480887

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 480507

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	1000	ug/L		04/09/21 14:00	04/12/21 20:01	1
Iron	100	U	100	100	ug/L		04/09/21 14:00	04/12/21 20:01	1

Lab Sample ID: LCS 240-480507/3-A
Matrix: Water
Analysis Batch: 480887

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 480507

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	25000	25800		ug/L		103	80 - 120
Iron	5000	4720		ug/L		94	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-480833/3
Matrix: Water
Analysis Batch: 480833

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			04/13/21 14:07	1
Fluoride	0.050	U	0.050	0.050	mg/L			04/13/21 14:07	1

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

Lab Sample ID: MB 240-480833/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 480833

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	mg/L			04/13/21 14:07	1

Lab Sample ID: MB 240-480833/63 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 480833

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			04/14/21 10:15	1
Fluoride	0.050	U	0.050	0.050	mg/L			04/14/21 10:15	1
Sulfate	1.0	U	1.0	1.0	mg/L			04/14/21 10:15	1

Lab Sample ID: LCS 240-480833/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 480833

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	49.6		mg/L		99	90 - 110
Fluoride	2.50	2.54		mg/L		102	90 - 110
Sulfate	50.0	49.8		mg/L		100	90 - 110

Lab Sample ID: LCS 240-480833/64 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 480833

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	49.2		mg/L		98	90 - 110
Fluoride	2.50	2.53		mg/L		101	90 - 110
Sulfate	50.0	49.5		mg/L		99	90 - 110

Lab Sample ID: 240-147159-8 MS — **Client Sample ID: DUP-01**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 480833

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	7.7		50.0	59.4		mg/L		103	80 - 120
Fluoride	1.4		2.50	3.82		mg/L		95	80 - 120

Lab Sample ID: 240-147159-8 MS — **Client Sample ID: DUP-01**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 480833

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1400		500	1860		mg/L		95	80 - 120

Lab Sample ID: 240-147159-8 MSD — **Client Sample ID: DUP-01**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 480833

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	7.7		50.0	59.6		mg/L		104	80 - 120	0	15

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

Lab Sample ID: 240-147159-8 MSD — **Client Sample ID: DUP-01**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 480833

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.4		2.50	3.80		mg/L		95	80 - 120	0	15

Lab Sample ID: 240-147159-8 MSD — **Client Sample ID: DUP-01**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 480833

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	1400		500	1940		mg/L		111	80 - 120	4	15

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

Lab Sample ID: MB 240-480550/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 480550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			04/09/21 13:17	1

Lab Sample ID: LCS 240-480550/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 480550

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	245	251		mg/L		102	80 - 120

Lab Sample ID: MB 240-480761/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 480761

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			04/12/21 11:32	1

Lab Sample ID: LCS 240-480761/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 480761

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	245	257		mg/L		105	80 - 120

Lab Sample ID: MB 240-480900/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 480900

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			04/13/21 08:49	1

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

Lab Sample ID: LCS 240-480900/2
Matrix: Water
Analysis Batch: 480900

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	245	250		mg/L		102	80 - 120

Metals

Prep Batch: 480507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147159-1	MW-16-01	Total Recoverable	Water	3005A	
240-147159-2	MW-16-02	Total Recoverable	Water	3005A	
240-147159-3	MW-16-03	Total Recoverable	Water	3005A	
240-147159-4	MW-16-04	Total Recoverable	Water	3005A	
240-147159-5	MW-16-05	Total Recoverable	Water	3005A	
240-147159-6	MW-16-06	Total Recoverable	Water	3005A	
240-147159-7	MW-16-07	Total Recoverable	Water	3005A	
240-147159-8	DUP-01	Total Recoverable	Water	3005A	
240-147159-9	MP-001F	Total Recoverable	Water	3005A	
MB 240-480507/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-480507/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-480507/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-147159-6 MS	MW-16-06	Total Recoverable	Water	3005A	
240-147159-6 MSD	MW-16-06	Total Recoverable	Water	3005A	

Analysis Batch: 480887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147159-1	MW-16-01	Total Recoverable	Water	6020	480507
240-147159-2	MW-16-02	Total Recoverable	Water	6020	480507
240-147159-3	MW-16-03	Total Recoverable	Water	6020	480507
240-147159-4	MW-16-04	Total Recoverable	Water	6020	480507
240-147159-5	MW-16-05	Total Recoverable	Water	6020	480507
240-147159-6	MW-16-06	Total Recoverable	Water	6020	480507
240-147159-7	MW-16-07	Total Recoverable	Water	6020	480507
240-147159-8	DUP-01	Total Recoverable	Water	6020	480507
240-147159-9	MP-001F	Total Recoverable	Water	6020	480507
MB 240-480507/1-A	Method Blank	Total Recoverable	Water	6020	480507
LCS 240-480507/3-A	Lab Control Sample	Total Recoverable	Water	6020	480507

Analysis Batch: 481083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147159-1	MW-16-01	Total Recoverable	Water	6010B	480507
240-147159-2	MW-16-02	Total Recoverable	Water	6010B	480507
240-147159-3	MW-16-03	Total Recoverable	Water	6010B	480507
240-147159-4	MW-16-04	Total Recoverable	Water	6010B	480507
240-147159-5	MW-16-05	Total Recoverable	Water	6010B	480507
240-147159-6	MW-16-06	Total Recoverable	Water	6010B	480507
240-147159-7	MW-16-07	Total Recoverable	Water	6010B	480507
240-147159-8	DUP-01	Total Recoverable	Water	6010B	480507
240-147159-9	MP-001F	Total Recoverable	Water	6010B	480507
MB 240-480507/1-A	Method Blank	Total Recoverable	Water	6010B	480507
LCS 240-480507/2-A	Lab Control Sample	Total Recoverable	Water	6010B	480507
240-147159-6 MS	MW-16-06	Total Recoverable	Water	6010B	480507
240-147159-6 MSD	MW-16-06	Total Recoverable	Water	6010B	480507

General Chemistry

Analysis Batch: 480550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147159-3	MW-16-03	Total/NA	Water	SM 2540C	
240-147159-4	MW-16-04	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 480550 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-480550/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-480550/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 480761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147159-5	MW-16-05	Total/NA	Water	SM 2540C	
240-147159-7	MW-16-07	Total/NA	Water	SM 2540C	
240-147159-8	DUP-01	Total/NA	Water	SM 2540C	
MB 240-480761/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-480761/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 480833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147159-1	MW-16-01	Total/NA	Water	9056A	
240-147159-1	MW-16-01	Total/NA	Water	9056A	
240-147159-2	MW-16-02	Total/NA	Water	9056A	
240-147159-2	MW-16-02	Total/NA	Water	9056A	
240-147159-3	MW-16-03	Total/NA	Water	9056A	
240-147159-3	MW-16-03	Total/NA	Water	9056A	
240-147159-4	MW-16-04	Total/NA	Water	9056A	
240-147159-4	MW-16-04	Total/NA	Water	9056A	
240-147159-5	MW-16-05	Total/NA	Water	9056A	
240-147159-5	MW-16-05	Total/NA	Water	9056A	
240-147159-6	MW-16-06	Total/NA	Water	9056A	
240-147159-6	MW-16-06	Total/NA	Water	9056A	
240-147159-7	MW-16-07	Total/NA	Water	9056A	
240-147159-7	MW-16-07	Total/NA	Water	9056A	
240-147159-8	DUP-01	Total/NA	Water	9056A	
240-147159-8	DUP-01	Total/NA	Water	9056A	
240-147159-9	MP-001F	Total/NA	Water	9056A	
240-147159-9	MP-001F	Total/NA	Water	9056A	
MB 240-480833/3	Method Blank	Total/NA	Water	9056A	
MB 240-480833/63	Method Blank	Total/NA	Water	9056A	
LCS 240-480833/4	Lab Control Sample	Total/NA	Water	9056A	
LCS 240-480833/64	Lab Control Sample	Total/NA	Water	9056A	
240-147159-8 MS	DUP-01	Total/NA	Water	9056A	
240-147159-8 MS	DUP-01	Total/NA	Water	9056A	
240-147159-8 MSD	DUP-01	Total/NA	Water	9056A	
240-147159-8 MSD	DUP-01	Total/NA	Water	9056A	

Analysis Batch: 480900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147159-1	MW-16-01	Total/NA	Water	SM 2540C	
240-147159-2	MW-16-02	Total/NA	Water	SM 2540C	
240-147159-6	MW-16-06	Total/NA	Water	SM 2540C	
240-147159-9	MP-001F	Total/NA	Water	SM 2540C	
MB 240-480900/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-480900/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: MW-16-01 — Lab Sample ID: 240-147159-1

Date Collected: 04/06/21 09:08 **Matrix: Water**
Date Received: 04/08/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481083	04/13/21 13:29	DSH	TAL CAN
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	480887	04/12/21 21:39	DTN	TAL CAN
Total/NA	Analysis	9056A		1	480833	04/14/21 04:13	JWW	TAL CAN
Total/NA	Analysis	9056A		10	480833	04/14/21 04:33	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	480900	04/13/21 08:49	AJ	TAL CAN

Client Sample ID: MW-16-02 — Lab Sample ID: 240-147159-2

Date Collected: 04/06/21 09:59 **Matrix: Water**
Date Received: 04/08/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481083	04/13/21 13:33	DSH	TAL CAN
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	480887	04/12/21 21:41	DTN	TAL CAN
Total/NA	Analysis	9056A		1	480833	04/14/21 04:53	JWW	TAL CAN
Total/NA	Analysis	9056A		10	480833	04/14/21 05:13	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	480900	04/13/21 08:49	AJ	TAL CAN

Client Sample ID: MW-16-03 — Lab Sample ID: 240-147159-3

Date Collected: 04/05/21 16:12 **Matrix: Water**
Date Received: 04/08/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481083	04/13/21 13:46	DSH	TAL CAN
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	480887	04/12/21 21:44	DTN	TAL CAN
Total/NA	Analysis	9056A		1	480833	04/14/21 06:14	JWW	TAL CAN
Total/NA	Analysis	9056A		10	480833	04/14/21 06:34	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	480550	04/09/21 13:17	AJ	TAL CAN

Client Sample ID: MW-16-04 — Lab Sample ID: 240-147159-4

Date Collected: 04/05/21 15:00 **Matrix: Water**
Date Received: 04/08/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481083	04/13/21 13:51	DSH	TAL CAN
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	480887	04/12/21 21:46	DTN	TAL CAN
Total/NA	Analysis	9056A		1	480833	04/14/21 06:54	JWW	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: MW-16-04 — Lab Sample ID: 240-147159-4

Date Collected: 04/05/21 15:00 **Matrix: Water**
Date Received: 04/08/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		10	480833	04/14/21 07:14	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	480550	04/09/21 13:17	AJ	TAL CAN

Client Sample ID: MW-16-05 — Lab Sample ID: 240-147159-5

Date Collected: 04/05/21 15:23 **Matrix: Water**
Date Received: 04/08/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481083	04/13/21 13:55	DSH	TAL CAN
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	480887	04/12/21 21:49	DTN	TAL CAN
Total/NA	Analysis	9056A		1	480833	04/14/21 07:34	JWW	TAL CAN
Total/NA	Analysis	9056A		10	480833	04/14/21 07:54	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	480761	04/12/21 11:32	AJ	TAL CAN

Client Sample ID: MW-16-06 — Lab Sample ID: 240-147159-6

Date Collected: 04/06/21 13:44 **Matrix: Water**
Date Received: 04/08/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481083	04/13/21 12:10	DSH	TAL CAN
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	480887	04/12/21 20:06	DTN	TAL CAN
Total/NA	Analysis	9056A		1	480833	04/14/21 08:14	JWW	TAL CAN
Total/NA	Analysis	9056A		10	480833	04/14/21 08:34	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	480900	04/13/21 08:49	AJ	TAL CAN

Client Sample ID: MW-16-07 — Lab Sample ID: 240-147159-7

Date Collected: 04/05/21 14:07 **Matrix: Water**
Date Received: 04/08/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481083	04/13/21 14:00	DSH	TAL CAN
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	480887	04/12/21 21:51	DTN	TAL CAN
Total/NA	Analysis	9056A		1	480833	04/14/21 08:55	JWW	TAL CAN
Total/NA	Analysis	9056A		10	480833	04/14/21 09:15	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	480761	04/12/21 11:32	AJ	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

Client Sample ID: DUP-01 — Lab Sample ID: 240-147159-8

Date Collected: 04/05/21 00:00 — **Matrix: Water**
Date Received: 04/08/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481083	04/13/21 14:04	DSH	TAL CAN
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	480887	04/12/21 21:54	DTN	TAL CAN
Total/NA	Analysis	9056A		1	480833	04/14/21 10:55	JWW	TAL CAN
Total/NA	Analysis	9056A		10	480833	04/14/21 11:56	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	480761	04/12/21 11:32	AJ	TAL CAN

Client Sample ID: MP-001F — Lab Sample ID: 240-147159-9

Date Collected: 04/06/21 09:39 — **Matrix: Water**
Date Received: 04/08/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481083	04/13/21 14:09	DSH	TAL CAN
Total Recoverable	Prep	3005A			480507	04/09/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	480887	04/12/21 21:56	DTN	TAL CAN
Total/NA	Analysis	9056A		1	480833	04/14/21 12:56	JWW	TAL CAN
Total/NA	Analysis	9056A		5	480833	04/14/21 13:16	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	480900	04/13/21 08:49	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: 240-147159-1
Project/Site: CCR DTE Monroe Power Plant - FAB-VEL

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	02-23-21 *
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

07108

Chain of Custody Record

MICHIGAN 190

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Client Information	Sampler: Jake Krenz	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-81500-31715.1
Client Contact: ~~Chris Scieszka~~ Brian Yelen	Phone: 734-395-9804	E-Mail: Kris.Brooks@Eurofinset.com	State of Origin: MI	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 #: 164683			
Email: ~~CScieszka@trccompanies.com~~ BYelen@TRCcompanies.com	WO #: 254222.0001			
Project Name: CCR DTE Monroe FAB-UEL	Project #: 24016830			
Site: Monroe Power Plant FAB-WEL	SSOW#:			

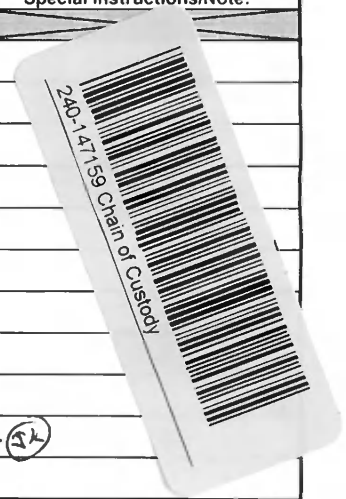
Analysis Requested

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, 9056A_28D	6010B, 6020	Total Number of containers	Special Instructions/Note:
				Preservation Code:			N	D		
MW-16-01	4-6-21	0908	G	Water	N	N	X	X	2	
MW-16-02	4-6-21	0959	G	Water	N	N	X	X	2	
MW-16-03	4-5-21	1612	G	Water	N	N	X	X	2	
MW-16-04	4-5-21	1500	G	Water	N	N	X	X	2	
MW-16-05	4-5-21	1523	G	Water	N	N	X	X	2	
MW-16-06	4-6-21	1341	G	Water	N	N	X	X	2	
MW-16-07	4-5-21	1407	G	Water	N	N	X	X	2	
DUP-01	4-5-21	—	G	Water	N	N	X	X	2	
MP-001F	4-6-21	0939	G	Water	N	N	X	X	2	
				~~Water~~	N	N	X	X	2	(JK)



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		4-7-21 / 0955	TRC		4-7-21 958	ETA
2		4-7-21 959	ETA	MJS ETA CANTON	APR 08 2021	800
3						

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

Ver: 11/01/2020

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 240-147159**
Canton Facility

Client TRC Site Name

Cooler Received on APR 08 2021 Opened on APR 08 2021

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

Cooler unpacked by: MJS ETA CANTON

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

TestAmerica Cooler # 1A 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. 0.7 °C Corrected Cooler Temp. 0.8 °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)? MJS ~~Yes~~ (No)
4. Did custody papers accompany the sample(s)? (Yes) No
5. Were the custody papers relinquished & signed in the appropriate place? (Yes) No
6. Was/were the person(s) who collected the samples clearly identified on the COC? (Yes) No
7. Did all bottles arrive in good condition (Unbroken)? (Yes) No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? (Yes) No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? (Y)
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:

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 240-151083-1
Client Project/Site: CCR DTE Monroe Power Plant FAB/VEL

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

Attn: Mr. Vincent Buening

Authorized for release by:
6/17/2021 2:02:28 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-151083-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Qualifiers

General Chemistry

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

Glossary

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

Case Narrative

Client: TRC Environmental Corporation. Job ID: 240-151083-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Job ID: 240-151083-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-151083-1

Comments
No additional comments.

Receipt
The samples were received on 6/11/2021 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 0.4º C.

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

Method Summary

Client: TRC Environmental Corporation.
Job ID: 240-151083-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Method	Method Description	Protocol	Laboratory
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CAN

Protocol References:

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

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.
Job ID: 240-151083-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-151083-1	MW-16-03-20210609	Water	06/09/21 14:48	06/11/21 08:00	
240-151083-2	DUP-01	Water	06/09/21 00:00	06/11/21 08:00	

Detection Summary

Client: TRC Environmental Corporation.
Job ID: 240-151083-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Client Sample ID: MW-16-03-20210609
Lab Sample ID: 240-151083-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	2300		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01
Lab Sample ID: 240-151083-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	2200		20	20	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation.
Job ID: 240-151083-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Client Sample ID: MW-16-03-20210609
Lab Sample ID: 240-151083-1
Date Collected: 06/09/21 14:48
Matrix: Water
Date Received: 06/11/21 08:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2300		20	20	mg/L			06/15/21 08:01	1

Client Sample Results

Client: TRC Environmental Corporation.
Job ID: 240-151083-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Client Sample ID: DUP-01
Lab Sample ID: 240-151083-2
Date Collected: 06/09/21 00:00
Matrix: Water
Date Received: 06/11/21 08:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2200		20	20	mg/L			06/15/21 08:01	1

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

Lab Sample ID: MB 240-490657/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 490657

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			06/15/21 08:01	1

Lab Sample ID: LCS 240-490657/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 490657

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			347	325		mg/L		94	80 - 120		

Lab Sample ID: 240-151083-1 DU — **Client Sample ID: MW-16-03-20210609**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 490657

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	2300			2450		mg/L				8	20

General Chemistry

Analysis Batch: 490657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-151083-1	MW-16-03-20210609	Total/NA	Water	SM 2540C	
240-151083-2	DUP-01	Total/NA	Water	SM 2540C	
MB 240-490657/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-490657/2	Lab Control Sample	Total/NA	Water	SM 2540C	
240-151083-1 DU	MW-16-03-20210609	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-151083-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Client Sample ID: MW-16-03-20210609 Lab Sample ID: 240-151083-1

Date Collected: 06/09/21 14:48 **Matrix: Water**
Date Received: 06/11/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	490657	06/15/21 08:01	AJ	TAL CAN

Client Sample ID: DUP-01 Lab Sample ID: 240-151083-2

Date Collected: 06/09/21 00:00 **Matrix: Water**
Date Received: 06/11/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	490657	06/15/21 08:01	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: 240-151083-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

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	200004	07-31-21
Iowa	State	421	06-01-21 *
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	08-01-21
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.

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

MICHIGAN 190

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
TRC	V. BUENING		181624
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** _____ **of** _____
1540 EISENHOWER PL			
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	**Analysis (Attach list if more space is needed)**
ANN ARBOR / MI / 48108		KRIS BROOKS	
Project Name and Location (State)	**Carrier/Waybill Number**		
MONROE POWER PLANT FAB/VEL			
Contract/Purchase Order/Quote No.			
164683			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TDS	Special Instructions/ Conditions of Receipt
MW-16-03_20210609	6.9.21	1448		X									X	
DUP-01	6.9.21	/		X									X	

240-151083 Chain of Custody

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

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

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other 3 DAY

QC Requirements (Specify)

	Relinquished By	Date	Time	Received By	Date	Time
1.	B. YELEN - TRC	6.10.21	0900			
2.	D. Schuh	6-10-21	10:42	Amanda Bathurst	6/10/21	10:43
3.	Amanda Bathurst	6/10/21	11:29		6-11-21	800

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

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

Client TRC Site Name _____ Cooler unpacked by: Trent

Cooler Received on 6-11-21 Opened on 6-11-21

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

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

TestAmerica Cooler # 1-A 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. 0.3 °C Corrected Cooler Temp. 0.4 °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:

19. SAMPLE CONDITION

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

20. SAMPLE PRESERVATION

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

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 240-157751-1
Client Project/Site: CCR DTE Monroe Power Plant

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

Attn: Mr. Vincent Buening

Patrick O'Meara

Authorized for release by:
10/26/2021 10:59:16 AM
Patrick O'Meara, Manager of Project Management
(330)966-5725
patrick.o'meara@eurofinset.com

Designee for

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

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

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

Table of Contents

Definitions/Glossary

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

Job ID: 240-157751-1

Qualifiers

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
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: 240-157751-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-157751-1

Comments
No additional comments.

Receipt
The samples were received on 10/9/2021 @ 10:10 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.9º C, 2.5º C and 3.1º C.

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

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

Method Summary

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

Job ID: 240-157751-1

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 Monroe Power Plant

Job ID: 240-157751-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-157751-1	MW-16-01_20211007	Water	10/07/21 11:10	10/09/21 10:10
240-157751-2	MW-16-02_20211006	Water	10/06/21 13:50	10/09/21 10:10
240-157751-3	MW-16-03_20211006	Water	10/06/21 12:10	10/09/21 10:10
240-157751-4	MW-16-04_20211006	Water	10/06/21 10:45	10/09/21 10:10
240-157751-5	MW-16-05_20211006	Water	10/06/21 11:30	10/09/21 10:10
240-157751-6	MW-16-06_20211007	Water	10/07/21 10:35	10/09/21 10:10
240-157751-7	MW-16-07_20211006	Water	10/06/21 15:10	10/09/21 10:10
240-157751-8	DUP-01_20211006	Water	10/06/21 00:00	10/09/21 10:10
240-157751-9	MP-001F_20211007	Water	10/07/21 08:50	10/09/21 10:10

Detection Summary

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

Job ID: 240-157751-1

Client Sample ID: MW-16-01_20211007 — Lab Sample ID: 240-157751-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	230		100	100	ug/L	1		6010B	Total Recoverable
Calcium	430000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	120		100	100	ug/L	1		6020	Total Recoverable
Chloride	11		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.8		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1600		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2200		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02_20211006 — Lab Sample ID: 240-157751-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	360		100	100	ug/L	1		6010B	Total Recoverable
Calcium	450000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	510		100	100	ug/L	1		6020	Total Recoverable
Chloride	14		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.6		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1600		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2200		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03_20211006 — Lab Sample ID: 240-157751-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	370		100	100	ug/L	1		6010B	Total Recoverable
Calcium	450000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	980		100	100	ug/L	1		6020	Total Recoverable
Chloride	19		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.6		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1700		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2300		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-04_20211006 — Lab Sample ID: 240-157751-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	140		100	100	ug/L	1		6010B	Total Recoverable
Calcium	620000		2000	2000	ug/L	2		6020	Total Recoverable
Chloride	36		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.0		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1400		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2100		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-05_20211006 — Lab Sample ID: 240-157751-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	190		100	100	ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-16-05_20211006 (Continued) — Lab Sample ID: 240-157751-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	440000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	1000		100	100	ug/L	1		6020	Total Recoverable
Chloride	12		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.5		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1600		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2000		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-06_20211007 — Lab Sample ID: 240-157751-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	280		100	100	ug/L	1		6010B	Total Recoverable
Calcium	420000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	850		100	100	ug/L	1		6020	Total Recoverable
Chloride	8.2		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.5		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1600		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2100		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-07_20211006 — Lab Sample ID: 240-157751-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	150		100	100	ug/L	1		6010B	Total Recoverable
Calcium	450000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	900		100	100	ug/L	1		6020	Total Recoverable
Chloride	12		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.6		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1600		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2200		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01_20211006 — Lab Sample ID: 240-157751-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	120		100	100	ug/L	1		6010B	Total Recoverable
Calcium	570000		2000	2000	ug/L	2		6020	Total Recoverable
Chloride	36		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.0		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1500		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2100		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MP-001F_20211007 — Lab Sample ID: 240-157751-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1300		100	100	ug/L	1		6010B	Total Recoverable
Calcium	170000		1000	1000	ug/L	1		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MP-001F_20211007 (Continued) — Lab Sample ID: 240-157751-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	200		100	100	ug/L	1		6020	Total Recoverable
Chloride	27		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.58		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	400		5.0	5.0	mg/L	5		9056A	Total/NA
Total Dissolved Solids	680		10	10	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

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

Job ID: 240-157751-1

Client Sample ID: MW-16-01_20211007
Date Collected: 10/07/21 11:10
Date Received: 10/09/21 10:10

Lab Sample ID: 240-157751-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	230		100	100	ug/L		10/11/21 14:00	10/13/21 04:38	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	430000		1000	1000	ug/L		10/11/21 14:00	10/13/21 03:55	1
Iron	120		100	100	ug/L		10/11/21 14:00	10/13/21 03:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11		1.0	1.0	mg/L			10/22/21 11:13	1
Fluoride	1.8		0.050	0.050	mg/L			10/22/21 11:13	1
Sulfate	1600		10	10	mg/L			10/22/21 11:34	10
Total Dissolved Solids	2200		20	20	mg/L			10/14/21 08:37	1

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

Job ID: 240-157751-1

Client Sample ID: MW-16-02_20211006

Date Collected: 10/06/21 13:50
Date Received: 10/09/21 10:10

Lab Sample ID: 240-157751-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	360		100	100	ug/L		10/11/21 14:00	10/13/21 04:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	450000		1000	1000	ug/L		10/11/21 14:00	10/13/21 04:00	1
Iron	510		100	100	ug/L		10/11/21 14:00	10/13/21 04:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14		1.0	1.0	mg/L			10/22/21 11:56	1
Fluoride	1.6		0.050	0.050	mg/L			10/22/21 11:56	1
Sulfate	1600		10	10	mg/L			10/22/21 12:18	10
Total Dissolved Solids	2200		20	20	mg/L			10/13/21 08:20	1

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

Job ID: 240-157751-1

Client Sample ID: MW-16-03_20211006
Date Collected: 10/06/21 12:10
Date Received: 10/09/21 10:10

Lab Sample ID: 240-157751-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	370		100	100	ug/L		10/11/21 14:00	10/13/21 04:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	450000		1000	1000	ug/L		10/11/21 14:00	10/13/21 04:04	1
Iron	980		100	100	ug/L		10/11/21 14:00	10/13/21 04:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19		1.0	1.0	mg/L			10/22/21 12:40	1
Fluoride	1.6		0.050	0.050	mg/L			10/22/21 12:40	1
Sulfate	1700		10	10	mg/L			10/22/21 13:01	10
Total Dissolved Solids	2300		20	20	mg/L			10/13/21 08:20	1

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

Job ID: 240-157751-1

Client Sample ID: MW-16-04_20211006

Lab Sample ID: 240-157751-4

Date Collected: 10/06/21 10:45

Matrix: Water

Date Received: 10/09/21 10:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	140		100	100	ug/L		10/11/21 14:00	10/13/21 05:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	620000		2000	2000	ug/L		10/11/21 14:00	10/13/21 20:54	2
Iron	100	U	100	100	ug/L		10/11/21 14:00	10/13/21 04:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	36		1.0	1.0	mg/L			10/22/21 13:23	1
Fluoride	1.0		0.050	0.050	mg/L			10/22/21 13:23	1
Sulfate	1400		10	10	mg/L			10/22/21 15:12	10
Total Dissolved Solids	2100		20	20	mg/L			10/13/21 08:20	1

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

Job ID: 240-157751-1

Client Sample ID: MW-16-05_20211006

Date Collected: 10/06/21 11:30
Date Received: 10/09/21 10:10

Lab Sample ID: 240-157751-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	190		100	100	ug/L		10/11/21 14:00	10/13/21 05:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	440000		1000	1000	ug/L		10/11/21 14:00	10/13/21 04:13	1
Iron	1000		100	100	ug/L		10/11/21 14:00	10/13/21 04:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12		1.0	1.0	mg/L			10/22/21 15:33	1
Fluoride	1.5		0.050	0.050	mg/L			10/22/21 15:33	1
Sulfate	1600		10	10	mg/L			10/22/21 15:55	10
Total Dissolved Solids	2000		20	20	mg/L			10/13/21 08:20	1

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

Job ID: 240-157751-1

Client Sample ID: MW-16-06_20211007
Date Collected: 10/07/21 10:35
Date Received: 10/09/21 10:10

Lab Sample ID: 240-157751-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	280		100	100	ug/L		10/11/21 14:00	10/13/21 05:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	420000		1000	1000	ug/L		10/11/21 14:00	10/13/21 04:17	1
Iron	850		100	100	ug/L		10/11/21 14:00	10/13/21 04:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.2		1.0	1.0	mg/L			10/22/21 16:17	1
Fluoride	1.5		0.050	0.050	mg/L			10/22/21 16:17	1
Sulfate	1600		10	10	mg/L			10/22/21 16:39	10
Total Dissolved Solids	2100		20	20	mg/L			10/14/21 08:37	1

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

Job ID: 240-157751-1

Client Sample ID: MW-16-07_20211006

Date Collected: 10/06/21 15:10
Date Received: 10/09/21 10:10

Lab Sample ID: 240-157751-7

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	150		100	100	ug/L		10/11/21 14:00	10/13/21 05:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	450000		1000	1000	ug/L		10/11/21 14:00	10/13/21 04:22	1
Iron	900		100	100	ug/L		10/11/21 14:00	10/13/21 04:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12		1.0	1.0	mg/L			10/22/21 17:00	1
Fluoride	1.6		0.050	0.050	mg/L			10/22/21 17:00	1
Sulfate	1600		10	10	mg/L			10/22/21 17:22	10
Total Dissolved Solids	2200		20	20	mg/L			10/13/21 08:20	1

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

Job ID: 240-157751-1

Client Sample ID: DUP-01_20211006

Lab Sample ID: 240-157751-8

Date Collected: 10/06/21 00:00

Matrix: Water

Date Received: 10/09/21 10:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	120		100	100	ug/L		10/11/21 14:00	10/13/21 05:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	570000		2000	2000	ug/L		10/11/21 14:00	10/13/21 20:58	2
Iron	100	U	100	100	ug/L		10/11/21 14:00	10/13/21 04:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	36		1.0	1.0	mg/L			10/22/21 17:44	1
Fluoride	1.0		0.050	0.050	mg/L			10/22/21 17:44	1
Sulfate	1500		10	10	mg/L			10/22/21 18:05	10
Total Dissolved Solids	2100		20	20	mg/L			10/13/21 08:20	1

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

Job ID: 240-157751-1

Client Sample ID: MP-001F_20211007

Date Collected: 10/07/21 08:50
Date Received: 10/09/21 10:10

Lab Sample ID: 240-157751-9

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1300		100	100	ug/L		10/11/21 14:00	10/13/21 05:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	170000		1000	1000	ug/L		10/11/21 14:00	10/13/21 04:39	1
Iron	200		100	100	ug/L		10/11/21 14:00	10/13/21 04:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	27		1.0	1.0	mg/L			10/22/21 19:11	1
Fluoride	0.58		0.050	0.050	mg/L			10/22/21 19:11	1
Sulfate	400		5.0	5.0	mg/L			10/22/21 19:32	5
Total Dissolved Solids	680		10	10	mg/L			10/14/21 08:37	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-507649/1-A
Matrix: Water
Analysis Batch: 507978

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 507649

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	100	ug/L		10/11/21 14:00	10/13/21 03:29	1

Lab Sample ID: LCS 240-507649/2-A
Matrix: Water
Analysis Batch: 507978

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 507649

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	962		ug/L		96	80 - 120

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-507649/1-A
Matrix: Water
Analysis Batch: 507999

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 507649

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	1000	ug/L		10/11/21 14:00	10/13/21 02:32	1
Iron	100	U ^+	100	100	ug/L		10/11/21 14:00	10/13/21 02:32	1

Lab Sample ID: LCS 240-507649/3-A
Matrix: Water
Analysis Batch: 507999

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 507649

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	25000	25500		ug/L		102	80 - 120
Iron	5000	5550	^+	ug/L		111	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-509342/3
Matrix: Water
Analysis Batch: 509342

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			10/22/21 06:08	1
Fluoride	0.050	U	0.050	0.050	mg/L			10/22/21 06:08	1
Sulfate	1.0	U	1.0	1.0	mg/L			10/22/21 06:08	1

Lab Sample ID: LCS 240-509342/4
Matrix: Water
Analysis Batch: 509342

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	51.9		mg/L		104	90 - 110
Fluoride	2.50	2.71		mg/L		108	90 - 110
Sulfate	50.0	53.2		mg/L		106	90 - 110

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

Lab Sample ID: 240-157751-4 MS
Matrix: Water
Analysis Batch: 509342

Client Sample ID: MW-16-04_20211006
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	36		50.0	89.7		mg/L		107	80 - 120		
Fluoride	1.0		2.50	3.66		mg/L		105	80 - 120		

Lab Sample ID: 240-157751-4 MSD
Matrix: Water
Analysis Batch: 509342

Client Sample ID: MW-16-04_20211006
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	36		50.0	89.2		mg/L		106	80 - 120	1	15
Fluoride	1.0		2.50	3.67		mg/L		106	80 - 120	1	15

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

Lab Sample ID: MB 240-507992/1
Matrix: Water
Analysis Batch: 507992

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			10/13/21 08:20	1

Lab Sample ID: LCS 240-507992/2
Matrix: Water
Analysis Batch: 507992

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			347	336		mg/L		97	80 - 120		

Lab Sample ID: MB 240-508215/1
Matrix: Water
Analysis Batch: 508215

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			10/14/21 08:37	1

Lab Sample ID: LCS 240-508215/2
Matrix: Water
Analysis Batch: 508215

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	518		mg/L		104	80 - 120		

Metals

Prep Batch: 507649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-157751-1	MW-16-01_20211007	Total Recoverable	Water	3005A	
240-157751-2	MW-16-02_20211006	Total Recoverable	Water	3005A	
240-157751-3	MW-16-03_20211006	Total Recoverable	Water	3005A	
240-157751-4	MW-16-04_20211006	Total Recoverable	Water	3005A	
240-157751-5	MW-16-05_20211006	Total Recoverable	Water	3005A	
240-157751-6	MW-16-06_20211007	Total Recoverable	Water	3005A	
240-157751-7	MW-16-07_20211006	Total Recoverable	Water	3005A	
240-157751-8	DUP-01_20211006	Total Recoverable	Water	3005A	
240-157751-9	MP-001F_20211007	Total Recoverable	Water	3005A	
MB 240-507649/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-507649/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-507649/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 507978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-157751-1	MW-16-01_20211007	Total Recoverable	Water	6010B	507649
240-157751-2	MW-16-02_20211006	Total Recoverable	Water	6010B	507649
240-157751-3	MW-16-03_20211006	Total Recoverable	Water	6010B	507649
240-157751-4	MW-16-04_20211006	Total Recoverable	Water	6010B	507649
240-157751-5	MW-16-05_20211006	Total Recoverable	Water	6010B	507649
240-157751-6	MW-16-06_20211007	Total Recoverable	Water	6010B	507649
240-157751-7	MW-16-07_20211006	Total Recoverable	Water	6010B	507649
240-157751-8	DUP-01_20211006	Total Recoverable	Water	6010B	507649
240-157751-9	MP-001F_20211007	Total Recoverable	Water	6010B	507649
MB 240-507649/1-A	Method Blank	Total Recoverable	Water	6010B	507649
LCS 240-507649/2-A	Lab Control Sample	Total Recoverable	Water	6010B	507649

Analysis Batch: 507999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-157751-1	MW-16-01_20211007	Total Recoverable	Water	6020	507649
240-157751-2	MW-16-02_20211006	Total Recoverable	Water	6020	507649
240-157751-3	MW-16-03_20211006	Total Recoverable	Water	6020	507649
240-157751-4	MW-16-04_20211006	Total Recoverable	Water	6020	507649
240-157751-5	MW-16-05_20211006	Total Recoverable	Water	6020	507649
240-157751-6	MW-16-06_20211007	Total Recoverable	Water	6020	507649
240-157751-7	MW-16-07_20211006	Total Recoverable	Water	6020	507649
240-157751-8	DUP-01_20211006	Total Recoverable	Water	6020	507649
240-157751-9	MP-001F_20211007	Total Recoverable	Water	6020	507649
MB 240-507649/1-A	Method Blank	Total Recoverable	Water	6020	507649
LCS 240-507649/3-A	Lab Control Sample	Total Recoverable	Water	6020	507649

Analysis Batch: 508189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-157751-4	MW-16-04_20211006	Total Recoverable	Water	6020	507649
240-157751-8	DUP-01_20211006	Total Recoverable	Water	6020	507649

General Chemistry

Analysis Batch: 507992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-157751-2	MW-16-02_20211006	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 507992 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-157751-3	MW-16-03_20211006	Total/NA	Water	SM 2540C	
240-157751-4	MW-16-04_20211006	Total/NA	Water	SM 2540C	
240-157751-5	MW-16-05_20211006	Total/NA	Water	SM 2540C	
240-157751-7	MW-16-07_20211006	Total/NA	Water	SM 2540C	
240-157751-8	DUP-01_20211006	Total/NA	Water	SM 2540C	
MB 240-507992/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-507992/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 508215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-157751-1	MW-16-01_20211007	Total/NA	Water	SM 2540C	
240-157751-6	MW-16-06_20211007	Total/NA	Water	SM 2540C	
240-157751-9	MP-001F_20211007	Total/NA	Water	SM 2540C	
MB 240-508215/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-508215/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 509342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-157751-1	MW-16-01_20211007	Total/NA	Water	9056A	
240-157751-1	MW-16-01_20211007	Total/NA	Water	9056A	
240-157751-2	MW-16-02_20211006	Total/NA	Water	9056A	
240-157751-2	MW-16-02_20211006	Total/NA	Water	9056A	
240-157751-3	MW-16-03_20211006	Total/NA	Water	9056A	
240-157751-3	MW-16-03_20211006	Total/NA	Water	9056A	
240-157751-4	MW-16-04_20211006	Total/NA	Water	9056A	
240-157751-4	MW-16-04_20211006	Total/NA	Water	9056A	
240-157751-5	MW-16-05_20211006	Total/NA	Water	9056A	
240-157751-5	MW-16-05_20211006	Total/NA	Water	9056A	
240-157751-6	MW-16-06_20211007	Total/NA	Water	9056A	
240-157751-6	MW-16-06_20211007	Total/NA	Water	9056A	
240-157751-7	MW-16-07_20211006	Total/NA	Water	9056A	
240-157751-7	MW-16-07_20211006	Total/NA	Water	9056A	
240-157751-8	DUP-01_20211006	Total/NA	Water	9056A	
240-157751-8	DUP-01_20211006	Total/NA	Water	9056A	
240-157751-9	MP-001F_20211007	Total/NA	Water	9056A	
240-157751-9	MP-001F_20211007	Total/NA	Water	9056A	
MB 240-509342/3	Method Blank	Total/NA	Water	9056A	
LCS 240-509342/4	Lab Control Sample	Total/NA	Water	9056A	
240-157751-4 MS	MW-16-04_20211006	Total/NA	Water	9056A	
240-157751-4 MSD	MW-16-04_20211006	Total/NA	Water	9056A	

Lab Chronicle

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

Job ID: 240-157751-1

Client Sample ID: MW-16-01_20211007

Lab Sample ID: 240-157751-1

Date Collected: 10/07/21 11:10

Matrix: Water

Date Received: 10/09/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	507978	10/13/21 04:38	KLC	TAL CAN
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	507999	10/13/21 03:55	AJC	TAL CAN
Total/NA	Analysis	9056A		1	509342	10/22/21 11:13	JWW	TAL CAN
Total/NA	Analysis	9056A		10	509342	10/22/21 11:34	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	508215	10/14/21 08:37	AJ	TAL CAN

Client Sample ID: MW-16-02_20211006

Lab Sample ID: 240-157751-2

Date Collected: 10/06/21 13:50

Matrix: Water

Date Received: 10/09/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	507978	10/13/21 04:47	KLC	TAL CAN
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	507999	10/13/21 04:00	AJC	TAL CAN
Total/NA	Analysis	9056A		1	509342	10/22/21 11:56	JWW	TAL CAN
Total/NA	Analysis	9056A		10	509342	10/22/21 12:18	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	507992	10/13/21 08:20	AJ	TAL CAN

Client Sample ID: MW-16-03_20211006

Lab Sample ID: 240-157751-3

Date Collected: 10/06/21 12:10

Matrix: Water

Date Received: 10/09/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	507978	10/13/21 04:51	KLC	TAL CAN
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	507999	10/13/21 04:04	AJC	TAL CAN
Total/NA	Analysis	9056A		1	509342	10/22/21 12:40	JWW	TAL CAN
Total/NA	Analysis	9056A		10	509342	10/22/21 13:01	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	507992	10/13/21 08:20	AJ	TAL CAN

Client Sample ID: MW-16-04_20211006

Lab Sample ID: 240-157751-4

Date Collected: 10/06/21 10:45

Matrix: Water

Date Received: 10/09/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	507978	10/13/21 05:04	KLC	TAL CAN
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	507999	10/13/21 04:09	AJC	TAL CAN

Lab Chronicle

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

Job ID: 240-157751-1

Client Sample ID: MW-16-04_20211006
Date Collected: 10/06/21 10:45
Date Received: 10/09/21 10:10

Lab Sample ID: 240-157751-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		2	508189	10/13/21 20:54	AJC	TAL CAN
Total/NA	Analysis	9056A		1	509342	10/22/21 13:23	JWW	TAL CAN
Total/NA	Analysis	9056A		10	509342	10/22/21 15:12	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	507992	10/13/21 08:20	AJ	TAL CAN

Client Sample ID: MW-16-05_20211006
Date Collected: 10/06/21 11:30
Date Received: 10/09/21 10:10

Lab Sample ID: 240-157751-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	507978	10/13/21 05:09	KLC	TAL CAN
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	507999	10/13/21 04:13	AJC	TAL CAN
Total/NA	Analysis	9056A		1	509342	10/22/21 15:33	JWW	TAL CAN
Total/NA	Analysis	9056A		10	509342	10/22/21 15:55	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	507992	10/13/21 08:20	AJ	TAL CAN

Client Sample ID: MW-16-06_20211007
Date Collected: 10/07/21 10:35
Date Received: 10/09/21 10:10

Lab Sample ID: 240-157751-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	507978	10/13/21 05:13	KLC	TAL CAN
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	507999	10/13/21 04:17	AJC	TAL CAN
Total/NA	Analysis	9056A		1	509342	10/22/21 16:17	JWW	TAL CAN
Total/NA	Analysis	9056A		10	509342	10/22/21 16:39	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	508215	10/14/21 08:37	AJ	TAL CAN

Client Sample ID: MW-16-07_20211006
Date Collected: 10/06/21 15:10
Date Received: 10/09/21 10:10

Lab Sample ID: 240-157751-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	507978	10/13/21 05:18	KLC	TAL CAN
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	507999	10/13/21 04:22	AJC	TAL CAN
Total/NA	Analysis	9056A		1	509342	10/22/21 17:00	JWW	TAL CAN
Total/NA	Analysis	9056A		10	509342	10/22/21 17:22	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	507992	10/13/21 08:20	AJ	TAL CAN

Lab Chronicle

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

Job ID: 240-157751-1

Client Sample ID: DUP-01_20211006

Lab Sample ID: 240-157751-8

Date Collected: 10/06/21 00:00

Matrix: Water

Date Received: 10/09/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	507978	10/13/21 05:22	KLC	TAL CAN
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	507999	10/13/21 04:26	AJC	TAL CAN
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		2	508189	10/13/21 20:58	AJC	TAL CAN
Total/NA	Analysis	9056A		1	509342	10/22/21 17:44	JWW	TAL CAN
Total/NA	Analysis	9056A		10	509342	10/22/21 18:05	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	507992	10/13/21 08:20	AJ	TAL CAN

Client Sample ID: MP-001F_20211007

Lab Sample ID: 240-157751-9

Date Collected: 10/07/21 08:50

Matrix: Water

Date Received: 10/09/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	507978	10/13/21 05:27	KLC	TAL CAN
Total Recoverable	Prep	3005A			507649	10/11/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	507999	10/13/21 04:39	AJC	TAL CAN
Total/NA	Analysis	9056A		1	509342	10/22/21 19:11	JWW	TAL CAN
Total/NA	Analysis	9056A		5	509342	10/22/21 19:32	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	508215	10/14/21 08:37	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: 240-157751-1
Project/Site: CCR DTE Monroe Power Plant

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 Fax: 330-497-0772

Chain of Custody Record

MICHIGAN 190

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Client Information	Sampler: B. YELEN	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-87276-31715.1
Client Contact: ~~Chris Scieszka~~ V. BUENING	Phone:	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:	Analysis Requested	Preservation Codes:
City: Ann Arbor	TAT Requested (days):		A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No		
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: 164683		
Email: ~~CScieszka@trccompanies.com~~ vbuening@trccompanies.com	WO #: 254222.0001		Other:
Project Name: CCR DTE Monroe Plant FAB/VEL	Project #: 24016830		
Site:	SSOW#:		

Sample Identification	Sample Date (2021)	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 _20211007	10.7	1110	G	Water	N	N	X	X		
MW-16-02 _20211006	10.6	1350		Water			X	X		
MW-16-03 _20211006	10.6	1210		Water			X	X		
MW-16-04 _20211006	10.6	1045		Water			X	X		
MW-16-05 _20211006	10.6	1130		Water			X	X		
MW-16-06 _20211007	10.7	1035		Water			X	X		
MW-16-07 _20211006	10.6	1510		Water			X	X		
DUP-01 _20211006	10.6			Water			X	X		
MP-001F _20211007	10.7	0850		Water			X	X		
				Water						

240-157751 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
B. YELEN	10.8.21 0900	TRC	TRC STOR.	10.8.21 0900	TRC
Relinquished by: B V	Date/Time: 10.8.21 1152	Company TRC	Received by:	Date/Time: 10/5/21 1152	Company
Relinquished by:	Date/Time: 10/8/21 1341	Company ETA	Received by:	Date/Time: 10/9/21 1010	Company ETA

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

Ver: 06/08/2021

10/26/2021

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 157751**
Canton Facility

Client TRC Site Name _____ Cooler unpacked by: Trent

Cooler Received on 10/9/21 Opened on 10/9/21

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

Receipt After-hours: Drop-off Date/Time TC 10-9-21 Storage Location _____

TestAmerica Cooler # 115 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._____°C Corrected Cooler Temp._____°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)?	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 # : ____________

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA Client Box Other	IR-14 IR-15	3.0	3.1	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	2.4	2.5	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	1.8	1.9	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None

☐ See Temperature Excursion Form

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

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-01_20211007	240-157751-B-1	Plastic 250ml - with Nitric Acid	<2			
MW-16-02_20211006	240-157751-B-2	Plastic 250ml - with Nitric Acid	<2			
MW-16-03_20211006	240-157751-B-3	Plastic 250ml - with Nitric Acid	<2			
MW-16-04_20211006	240-157751-B-4	Plastic 250ml - with Nitric Acid	<2			
MW-16-05_20211006	240-157751-B-5	Plastic 250ml - with Nitric Acid	<2			
MW-16-06_20211007	240-157751-B-6	Plastic 250ml - with Nitric Acid	<2			
MW-16-07_20211006	240-157751-B-7	Plastic 250ml - with Nitric Acid	<2			
DUP-01_20211006	240-157751-B-8	Plastic 250ml - with Nitric Acid	<2			
MP-001F_20211007	240-157751-B-9	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: 240-161247-1
Client Project/Site: CCR DTE Monroe Power Plant FAB/VEL

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

Attn: Mr. Vincent Buening

Authorized for release by:
12/15/2021 3:47:07 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-161247-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

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

Case Narrative

Client: TRC Environmental Corporation. Job ID: 240-161247-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Job ID: 240-161247-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-161247-1

Comments
No additional comments.

Receipt
The samples were received on 12/10/2021 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 0.7º C.

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

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

Method Summary

Client: TRC Environmental Corporation.
Job ID: 240-161247-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL CAN
9056A	Anions, Ion Chromatography	SW846	TAL CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN

Protocol References:

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.
Job ID: 240-161247-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-161247-1	MW-16-01_2021128	Water	12/08/21 12:50	12/10/21 08:00
240-161247-2	MW-16-02_2021128	Water	12/08/21 14:05	12/10/21 08:00
240-161247-3	MW-16-04_2021128	Water	12/08/21 12:20	12/10/21 08:00
240-161247-4	MW-16-07_2021128	Water	12/08/21 14:10	12/10/21 08:00
240-161247-5	DUP-01_2021128	Water	12/08/21 00:00	12/10/21 08:00
240-161247-6	DUP-02_2021128	Water	12/08/21 00:00	12/10/21 08:00

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-161247-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Client Sample ID: MW-16-01_2021128 — Lab Sample ID: 240-161247-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1400		10	10	mg/L	10		9056A	Total/NA

Client Sample ID: MW-16-02_2021128 — Lab Sample ID: 240-161247-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	390000		1000	1000	ug/L	1		6020	Total Recoverable

Client Sample ID: MW-16-04_2021128 — Lab Sample ID: 240-161247-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	530000		1000	1000	ug/L	1		6020	Total Recoverable

Client Sample ID: MW-16-07_2021128 — Lab Sample ID: 240-161247-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	390000		1000	1000	ug/L	1		6020	Total Recoverable

Client Sample ID: DUP-01_2021128 — Lab Sample ID: 240-161247-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1400		10	10	mg/L	10		9056A	Total/NA

Client Sample ID: DUP-02_2021128 — Lab Sample ID: 240-161247-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	500000		1000	1000	ug/L	1		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation.
Job ID: 240-161247-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Client Sample ID: MW-16-01_2021128
Lab Sample ID: 240-161247-1
Date Collected: 12/08/21 12:50
Matrix: Water
Date Received: 12/10/21 08:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1400		10	10	mg/L			12/11/21 04:11	10

Client Sample Results

Client: TRC Environmental Corporation.
Job ID: 240-161247-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Client Sample ID: MW-16-02_2021128
Lab Sample ID: 240-161247-2

Date Collected: 12/08/21 14:05
Matrix: Water
Date Received: 12/10/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	390000		1000	1000	ug/L		12/13/21 14:00	12/14/21 16:34	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-161247-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Client Sample ID: MW-16-04_2021128 **Lab Sample ID: 240-161247-3**
Date Collected: 12/08/21 12:20 **Matrix: Water**
Date Received: 12/10/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	530000		1000	1000	ug/L		12/13/21 14:00	12/14/21 16:37	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-161247-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Client Sample ID: MW-16-07_2021128 **Lab Sample ID: 240-161247-4**
Date Collected: 12/08/21 14:10 **Matrix: Water**
Date Received: 12/10/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	390000		1000	1000	ug/L		12/13/21 14:00	12/14/21 16:39	1

Client Sample Results

Client: TRC Environmental Corporation.
Job ID: 240-161247-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Client Sample ID: DUP-01_2021128
Lab Sample ID: 240-161247-5

Date Collected: 12/08/21 00:00
Matrix: Water
Date Received: 12/10/21 08:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1400		10	10	mg/L			12/11/21 04:31	10

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-161247-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Client Sample ID: DUP-02_2021128 **Lab Sample ID: 240-161247-6**
Date Collected: 12/08/21 00:00 **Matrix: Water**
Date Received: 12/10/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	500000		1000	1000	ug/L		12/13/21 14:00	12/14/21 16:42	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Job ID: 240-161247-1

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-516526/1-A
Matrix: Water
Analysis Batch: 516825

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 516526

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	1000	ug/L		12/13/21 14:00	12/14/21 16:08	1

Lab Sample ID: LCS 240-516526/2-A
Matrix: Water
Analysis Batch: 516825

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 516526

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	25000	24900		ug/L		100	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-516440/3
Matrix: Water
Analysis Batch: 516440

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			12/10/21 17:47	1

Lab Sample ID: LCS 240-516440/4
Matrix: Water
Analysis Batch: 516440

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	50.0	50.0		mg/L		100	90 - 110

QC Association Summary

Client: TRC Environmental Corporation. Job ID: 240-161247-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Metals

Prep Batch: 516526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-161247-2	MW-16-02_2021128	Total Recoverable	Water	3005A	
240-161247-3	MW-16-04_2021128	Total Recoverable	Water	3005A	
240-161247-4	MW-16-07_2021128	Total Recoverable	Water	3005A	
240-161247-6	DUP-02_2021128	Total Recoverable	Water	3005A	
MB 240-516526/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-516526/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 516825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-161247-2	MW-16-02_2021128	Total Recoverable	Water	6020	516526
240-161247-3	MW-16-04_2021128	Total Recoverable	Water	6020	516526
240-161247-4	MW-16-07_2021128	Total Recoverable	Water	6020	516526
240-161247-6	DUP-02_2021128	Total Recoverable	Water	6020	516526
MB 240-516526/1-A	Method Blank	Total Recoverable	Water	6020	516526
LCS 240-516526/2-A	Lab Control Sample	Total Recoverable	Water	6020	516526

General Chemistry

Analysis Batch: 516440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-161247-1	MW-16-01_2021128	Total/NA	Water	9056A	
240-161247-5	DUP-01_2021128	Total/NA	Water	9056A	
MB 240-516440/3	Method Blank	Total/NA	Water	9056A	
LCS 240-516440/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-161247-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

Client Sample ID: MW-16-01_2021128 — Lab Sample ID: 240-161247-1
Date Collected: 12/08/21 12:50 — **Matrix: Water**
Date Received: 12/10/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		10	516440	12/11/21 04:11	AGC	TAL CAN

Client Sample ID: MW-16-02_2021128 — Lab Sample ID: 240-161247-2
Date Collected: 12/08/21 14:05 — **Matrix: Water**
Date Received: 12/10/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			516526	12/13/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	516825	12/14/21 16:34	DSH	TAL CAN

Client Sample ID: MW-16-04_2021128 — Lab Sample ID: 240-161247-3
Date Collected: 12/08/21 12:20 — **Matrix: Water**
Date Received: 12/10/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			516526	12/13/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	516825	12/14/21 16:37	DSH	TAL CAN

Client Sample ID: MW-16-07_2021128 — Lab Sample ID: 240-161247-4
Date Collected: 12/08/21 14:10 — **Matrix: Water**
Date Received: 12/10/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			516526	12/13/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	516825	12/14/21 16:39	DSH	TAL CAN

Client Sample ID: DUP-01_2021128 — Lab Sample ID: 240-161247-5
Date Collected: 12/08/21 00:00 — **Matrix: Water**
Date Received: 12/10/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		10	516440	12/11/21 04:31	AGC	TAL CAN

Client Sample ID: DUP-02_2021128 — Lab Sample ID: 240-161247-6
Date Collected: 12/08/21 00:00 — **Matrix: Water**
Date Received: 12/10/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			516526	12/13/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	516825	12/14/21 16:42	DSH	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: 240-161247-1
Project/Site: CCR DTE Monroe Power Plant FAB/VEL

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 Fax: 330-497-0772

0.6107

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing America

Client Information	Sampler: Andrew Whaley / Brian Y.	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-87276-31715.1
Client Contact: Chris Scieszka	Phone:	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): 3 Day			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: 164683			
Email: CScieszka@trccompanies.com	WO #: 254222.0001			
Project Name: CCR DTE Monroe Plant FAB/VEL	Project #: 24016830			
Site:	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)	300.0_28D	6010B_6020	Calcium	TDS	Sulfate	Fluoride	Total Number of containers	Special Instructions/Note:
Preservation Code:							N	D	P		N			
MW-16-01 _ 2021128	12.8.21	1250	G	Water	N	N					X			Sulfate
MW-16-02 _ 2021128	12.8.21	1405	G	Water	N	N			X					Calcium
~~MW-16-03~~				Water										
MW-16-04 _ 2021128	12.8.21	[redacted]	G	Water	N	N			X					Calcium
~~MW-16-05~~				Water										
~~MW-16-06~~				Water										
MW-16-07 _ 2021128	12.8.21	1410	G	Water	N	N		X	X					Calcium
DUP-01 _ 2021128			G	Water	N	N					X			Sulfate
~~MW-001F~~				Water										
DUP-02 _ 2021128	12.8.21		G	Water	N	N			X					Calcium

240-161247 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	Andrew W.	12.8.21 1600	TRC	TRC Storage	12.8.21 1600	TRC
2		12/9/21 1030	TRC		12/9 10:30	ETA
3		12/9/21 1350	ETA		12-10-21 800	ETA

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

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

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

Client IRC Site Name _____ Cooler unpacked by: Nancy Lorenz

Cooler Received on 12-10-21 Opened on 12-10-21

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

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

TestAmerica Cooler # 1A 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. 0.6 °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)?	Yes	(No)
4. Did custody papers accompany the sample(s)?	(Yes)	No
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	(Yes)	No
7. Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	(No)
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?	(Yes)	No
10. Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11. Sufficient quantity received to perform indicated analyses?	(Yes)	No
12. Are these work share samples and all listed on the COC?	Yes	(No)
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	(Yes)	No NA pH Strip Lot# **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: _____

Appendix B
Data Quality Reviews

Laboratory Data Quality Review
Groundwater Monitoring Event April 2021
DTE Electric Company Monroe Power Plant Fly Ash Basin and Vertical Extent Landfill (MONPP FAB &VEL)

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. (Test America), located in North Canton, Ohio. The laboratory analytical results are reported in laboratory report 240-147159-1.

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
- MW-16-05
- MW-16-06
- MW-16-07
- MP-001F

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

- An equipment blank was not collected with this dataset.
- Target analytes were not detected in the method blanks.
- LCS recoveries for all target analytes were within laboratory control limits.
- MS/MSD analyses were performed on samples MW-16-06 for boron and DUP-01 for chloride, fluoride, and sulfate; recoveries and the relative percent differences (RPDs) were within the acceptance limits.
- DUP-01 corresponds with MW-16-07; RPDs between the parent and duplicate sample were within the QC limits.

Laboratory Data Quality Review
Groundwater Monitoring Event June 2021
DTE Electric Company Monroe Power Plant Fly Ash Basin and Vertical Extent Landfill (MONPP FAB &VEL) Verification Testing

Groundwater samples were collected by TRC for the June 2021 sampling event. Samples were analyzed for total dissolved solids by Eurofins-Test America Laboratories, Inc. (Test America), located in North Canton, Ohio. The laboratory analytical results are reported in laboratory report 240-151083-1.

During the June 2021 sampling event, a groundwater sample was collected from the following well:

- MW-16-03

The sample was analyzed for the following constituent:

Analyte Group	Method
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, 2020). The following items were included in the evaluation of the data:

- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;
- Data for method blanks and equipment blanks, where applicable. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures. Equipment blanks are used to assess potential contamination arising from field procedures;
- Data for laboratory control samples (LCSs). The LCSs are used to assess the accuracy of the analytical method using a clean matrix;
- Data for matrix spike and matrix spike duplicate samples (MS/MSDs), when performed on project samples. The MS/MSDs are used to assess the accuracy and precision of the analytical method using a sample from the dataset;
- Data for laboratory duplicates, when performed on project samples. The laboratory duplicates are used to assess the precision of the analytical method using a sample from the dataset;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes; and

- Overall usability of the data.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

Review Summary

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

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

QA/QC Sample Summary

- An equipment blank and field blank were not submitted with this sample set.
- Target analytes were not detected in the method blank.
- The LCS recovery for TDS was within laboratory control limits.
- DUP-01 corresponds with MW-16-03 for TDS; the relative percent difference (RPD) between the parent and duplicate sample was within the QC limits.
- Laboratory duplicate analysis was performed on sample MW-16-03 for TDS; the RPD was within the QC limits.

Laboratory Data Quality Review
Groundwater Monitoring Event October 2021
DTE Electric Company Monroe Power Plant Fly Ash Basin and Vertical Extension Landfill (MONPP FAB & VEL)

Groundwater samples were collected by TRC for the October 2021 sampling event. Samples were analyzed for anions, total recoverable metals, and total dissolved solids by Eurofins-Test America Laboratories, Inc. (Test America), located in North Canton, Ohio. The laboratory analytical results are reported in laboratory report 240-157751-1.

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
- MW-16-05
- MW-16-06
- MW-16-07

Each sample was analyzed for the following constituents:

Analyte Group	Method
Anions (Chloride, Fluoride, Sulfate)	SW846 9056A
Total 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, 2020). The following items were included in the evaluation of the data:

- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;
- Data for method blanks and equipment blanks, where applicable. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures. Equipment blanks are used to assess potential contamination arising from field procedures;
- Data for laboratory control samples (LCSs). The LCSs are used to assess the accuracy of the analytical method using a clean matrix;
- Data for matrix spike and matrix spike duplicate samples (MS/MSDs), when performed on project samples. The MS/MSDs are used to assess the accuracy and precision of the analytical method using a sample from the dataset;

- Data for laboratory duplicates, when performed on project samples. The laboratory duplicates are used to assess the precision of the analytical method using a sample from the dataset;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes; and
- Overall usability of the data.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

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

- An equipment blank was not collected with this dataset.
- Target analytes were not detected in the method blanks.
- LCS recoveries for all target analytes were within laboratory control limits.
- MS/MSD analyses were performed on sample MW-16-04 for chloride and fluoride; the percent recoveries and relative percent differences (RPDs) were within criteria.
- The field duplicate pair samples were MW-16-04 and DUP-01; RPDs between the parent and duplicate samples were within the QC limits.
- The RL for boron was below the RL specified in the quality assurance project plan (QAPP) of 200 ug/L. The following samples had detected boron detections below the QAPP RL:
    - DUP-01 – 120 ug/L
    - MW-16-04 – 140 ug/L
    - MW-16-05 – 190 ug/L
    - MW-16-07 – 150 ug/L

Laboratory Data Quality Review
Groundwater Monitoring Event December 2021
DTE Electric Company Monroe Power Plant Fly Ash Basin (FAB-VEL)

Groundwater samples were collected by TRC for the December 2021 sampling event. Samples were analyzed for calcium and sulfate by Eurofins-Test America Laboratories, Inc. (Test America), located in North Canton, Ohio. The laboratory analytical results are reported in laboratory report 240-161247-1.

During the December 2021 sampling event, a groundwater sample was collected from each of the following wells:

- MW-16-02
- MW-16-04
- MW-16-07

Each sample was analyzed for the following constituents:

Analyte Group	Method
Anions (Sulfate)	SW846 9056A
Total Recoverable Calcium	SW846 3005A/6020

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, 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

- An equipment blank was not collected with this dataset.
- Target analytes were not detected in the method blanks.
- LCS recoveries for all target analytes were within laboratory control limits.
- No MS/MSD analyses were performed.
- The field duplicate pair samples MW-16-04 with DUP-02; RPDs between the parent and duplicate samples were within the QC limits.

Appendix C
Prediction Limit Update

1540 Eisenhower Pl.
Ann Arbor, MI 48108

T 734.971.7080
TRCcompanies.com

Technical Memorandum

Date:	December 15, 2021
To:	Chris Scieszka, DTE Electric Company
From:	Vince Buening, TRC Sarah Holmstrom, TRC Kristin Lowery, TRC
Project No.:	413591.0001.0000 Phase 1 Task 1
Subject:	Prediction Limit Update – DTE Electric Company, Monroe Power Plant Fly Ash Basin and Vertical Extension Landfill

Statistical background limits for the DTE Electric Company (DTE Electric) Monroe Power Plant (MONPP) Fly Ash Basin (FAB) coal combustion residual (CCR) unit were initially established in the January 15, 2018 Technical Memorandum titled "Background Statistical Evaluation" pursuant to the United States Environmental Protection Agency's (U.S. EPA's) Resource Conservation and Recovery Act (RCRA) Federal Final Rule for Hazardous and Solid Waste Management System Disposal of Coal Combustion Residuals from Electric Utilities (herein after "the CCR Rule") promulgated on April 17, 2015, as amended. As described in the initial statistical limit calculation, background was established under a constrained schedule that captured limited natural temporal trends in groundwater quality. In addition, DTE Electric has since established the Hydrogeological Monitoring Plan for the DTE Electric Company Monroe Power Plant Fly Ash Basin and Vertical Extension Landfill (HMP) (TRC, November 4, 2019, Revised November 27, 2019), to provide a means to comply with applicable monitoring requirements described in the Part 115 of the Natural Resources and Environmental Protection Act, PA 451 of 1994, as amended (Part 115) and the CCR Rule. The HMP was approved by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) on December 4, 2020.

As such, DTE Electric is updating the background statistical limits for the MONPP FAB and Vertical Extension Landfill (VEL) to include the additional rounds of semiannual monitoring data collected subsequent to the initial statistical limit calculation in 2017. This memorandum presents the updated background statistical limits derived for the MONPP FAB and VEL in accordance with HMP.

Per the HMP, the groundwater monitoring system for the MONPP FAB and VEL consists of the following locations for detection monitoring:

- MW-16-01
- MW-16-02
- MW-16-03
- MW-16-04
- MW-16-05
- MW-16-06
- MW-16-07

And, per the HMP, statistical analysis is performed for the following detection monitoring parameters:

- Boron
- Calcium
- Chloride
- Fluoride
- Iron
- pH
- Sulfate
- Total Dissolved Solids (TDS)

Due to the limited implementation timeline of the CCR Rule, background data was collected during sampling events spaced one to two months apart to allow the minimum of eight sampling events to be completed before October 17, 2017. The short duration of the background sampling events limits the ability of the statistical analysis to capture the natural temporal variations in the groundwater quality at the MONPP FAB and VEL. This limited temporal variability can only be corrected with the collection of additional groundwater data, and the inclusion of the additional data in the background data set updated in the future, as long as data continue to show no impacts from the CCR unit. As a result of site-specific geologic conditions presented in the 2017, 2018, 2019, and 2020 Annual Reports (TRC, January 2018, January 2019, January 2020, and January 2021), downward migration of CCR leachate is not expected due to the presence of the underlying clay, and groundwater data continue to show no impacts from the CCR unit. Therefore, the seven additional rounds of detection monitoring data and the verification sample results[1] have been incorporated into the background dataset and the prediction limit calculations have been updated using data collected from August 2016 through October 2020 as detailed below, with the exception of iron. Iron was recently added to the monitoring program to align with Part 115. Background limits for iron will be calculated once a minimum of eight background data points have been collected.

The background data for the MOPP FAB and VEL were evaluated in accordance with the *Groundwater Statistical Evaluation Plan* (Stats Plan) (TRC, October 2017, Revised October and November 2019). Background data were evaluated in ChemStat™ statistical software. ChemStat™ is a software tool that is commercially available for performing statistical evaluation consistent with procedures outlined in U.S. EPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities (Unified Guidance; UG). Within the ChemStat™ statistical program (and the UG), prediction limits (PLs) were selected to perform the statistical calculation for background limits. Use of PLs is recommended by the UG to provide high statistical power and is an acceptable approach for intrawell detection monitoring under the CCR Rule. PLs were calculated for each of the constituents included in Appendix III of the CCR Rule (total boron, total calcium, chloride, fluoride, pH, sulfate, and total dissolved solids). The following narrative describes the methods employed and the results obtained and the ChemStat™ output files are included as an attachment.

The set of background wells utilized for MONPP FAB and VEL includes MW-16-01 through MW-16-07. The background evaluation included the following steps:

- Review of data quality checklists for the baseline/background data sets for CCR Appendix III constituents;
- Graphical representation of the baseline data as time versus concentration (T v. C) by well/constituent pair;

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

- Outlier testing of individual data points that appear from the graphical representations as potential outliers;
- Evaluation of percentage of nondetects for each baseline/background well-constituent (w/c) pair;
- Distribution of the data; and
- Calculation of the upper PLs for each cumulative baseline/background data set (upper and lower PLs were calculated for field pH).

The results of these evaluations are presented and discussed below.

Data Quality

Data from each sampling round were evaluated for completeness, overall quality and usability, method-specified sample holding times, precision and accuracy, and potential sample contamination. The review was completed using the following quality control (QC) information which at a minimum included chain-of-custody forms, investigative sample results including blind field duplicates, and, as provided by the laboratory, method blanks, laboratory control spikes, laboratory duplicates. The data were found to be complete and usable for the purposes of the CCR monitoring program.

Time versus Concentration Graphs

The time versus concentration (T v. C) graphs (Attachment A) show potential or suspect outliers for calcium at MW-16-03 and MW-16-04 in April 2018.

While variations in results are present, the graphs show consistent baseline data and do not suggest that data sets, as a whole, likely have overall trending or seasonality. However, due to limitations on CCR Rule implementation timelines, the data sets are of relatively short duration for making such observations regarding overall trending or seasonality.

Outlier Testing

Outlier removal from the background data set is summarized in Table 1. Probability plots (Attachment A) were used to further evaluate the potential outliers in the calcium data for MW-16-03 and MW-16-04 that were identified in the T v. C graphs (Attachment A). In general, probability plots of the data residuals show that data collected in April 2018 were from a different distribution than the remaining data. The potential calcium outliers were also tested using the Dixon's Test for outliers at a 1% level of significance. The calcium results for MW-16-03 and MW-16-04 in April 2018 were found to be outliers and were removed from the data set for further evaluation.

Distribution of the Data Sets

ChemStat™ was utilized to evaluate each data set for normality. If the skewness coefficient was calculated to be between negative one and one, then the data were assumed to be approximately normally distributed. If the skewness coefficient was calculated as greater than one (or less than negative one) then the calculation was performed on the natural log (Ln) of the data. If the Ln of the data still determined that the data appeared to be skewed, then the Shapiro-Wilk test of normality (Shapiro-Wilk) was performed. The Shapiro-Wilk statistic was calculated on both non-transformed data, and the Ln-transformed data. If the Shapiro-Wilk statistic indicated that normal distributional assumptions were not valid, then the parameter was considered a candidate for non-parametric statistical evaluation. The data distributions are summarized in Table 2.

Prediction Limits

Table 2 presents the calculated PLs for the background/baseline data sets. For normal and lognormal distributions, PLs are calculated for 95 percent confidence using parametric methods. For nonnormal background datasets, a nonparametric PL is utilized, resulting in the highest value from the background dataset as the PL. The achieved confidence levels for nonparametric prediction limits depend entirely on the number of background data points, which are shown in the ChemStat™ outputs. Verification resampling (1 of 2) is recommended per the Stats Plan and UG to achieve performance standards specified in the CCR Rule.

Attachments

Table 1 – Summary of Outlier Evaluation
Table 2 – Summary of Descriptive Statistics and Prediction Limit Calculations
Attachment A – ChemStat™ Prediction Limit Outputs

Tables

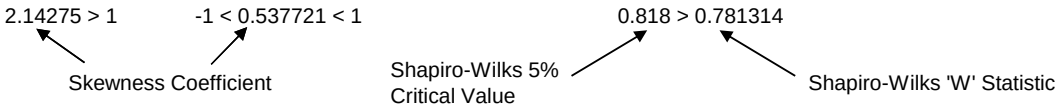
Table 1
Summary of Outlier Evaluation
DTE Electric Company - Monroe Fly Ash Basin

Parameter	Units	Monitoring Well	Sample Date	Data Outlier	Basis for Removal of Outlier
Calcium	µg/L	MW-16-03	4/3/2018	280,000	Anomalously low value, failed Dixon's Test for outliers at 1% significance
Calcium	µg/L	MW-16-04	4/3/2018	300,000	Anomalously low value, failed Dixon's Test for outliers at 1% significance

Table 2
Summary of Descriptive Statistics and Prediction Limit Calculations
DTE Electric Company – Monroe Fly Ash Basin

Monitoring Well	Skewness Test		Shapiro-Wilks Test (5% Critical Value)		Outliers Removed	Prediction Limit Test	Prediction Limit
	Un-Transformed Data	Natural Log Transformed Data	Un-Transformed Data	Natural Log Transformed Data			
Appendix III							
Boron (µg/L)							
MW-16-01	-1 < -0.325637 < 1	--	--	--	N	Parametric	300
MW-16-02	-1 < -0.108557 < 1	--	--	--	N	Parametric	450
MW-16-03	-1 < -0.575188 < 1	--	--	--	N	Parametric	500
MW-16-04	-1 < -0.278714 < 1	--	--	--	N	Parametric	210
MW-16-05	-1 < -0.0789058 < 1	--	--	--	N	Parametric	270
MW-16-06	-1 < -0.881984 < 1	--	--	--	N	Parametric	390
MW-16-07	-1 < -0.585905 < 1	--	--	--	N	Parametric	250
Calcium (µg/L)							
MW-16-01	-1 < -0.625903 < 1	--	--	--	N	Parametric	440,000
MW-16-02	-1 < -0.872831 < 1	--	--	--	N	Parametric	430,000
MW-16-03	-1 < 0.827122 < 1	--	--	--	Y	Parametric	470,000
MW-16-04	-1 < 0.137804 < 1	--	--	--	Y	Parametric	600,000
MW-16-05	-1 < -0.0951061 < 1	--	--	--	N	Parametric	440,000
MW-16-06	-1 < -0.0807415 < 1	--	--	--	N	Parametric	420,000
MW-16-07	-1 < 0.240175 < 1	--	--	--	N	Parametric	440,000
Chloride (mg/L)							
MW-16-01	-2.23206 <-1	-2.80942 < -1	0.887 > 0.705129	0.887 > 0.599528	N	Non-Parametric	12
MW-16-02	-1 < -0.999982 < 1	--	--	--	N	Parametric	15
MW-16-03	-1.7551 < -1	-2.01284 < -1	0.887 > 0.741175	0.887 > 0.709955	N	Non-Parametric	20
MW-16-04	-1.41382 < -1	-1.52159 < -1	0.887 > 0.803841	0.887 > 0.782784	N	Non-Parametric	36
MW-16-05	-2.7242 < -1	-3.08672 < -1	0.887 > 0.551002	0.887 > 0.48	N	Non-Parametric	12
MW-16-06	-1.2456 < -1	-1.35791 < -1	0.887 > 0.689037	0.887 > 0.683527	N	Non-Parametric	12
MW-16-07	-1 < 0.44099 < 1	--	--	--	N	Parametric	12
Fluoride (mg/L)							
MW-16-01	-1.33558 < -1	-1.48068 < -1	0.887 > 0.735104	0.887 > 0.711476	N	Non-Parametric	1.8
MW-16-02	-1 < 0.391042 < 1	--	--	--	N	Parametric	1.7
MW-16-03	-1 < 0.566607 < 1	--	--	--	N	Parametric	1.7
MW-16-04	-1 < -0.0834467 < 1	--	--	--	N	Parametric	1.1
MW-16-05	-1 < 0.229081 < 1	--	--	--	N	Parametric	1.6
MW-16-06	-1 < 0.57735 < 1	--	--	--	N	Parametric	1.7
MW-16-07	-1 < 0.38123 < 1	--	--	--	N	Parametric	1.7

Notes:

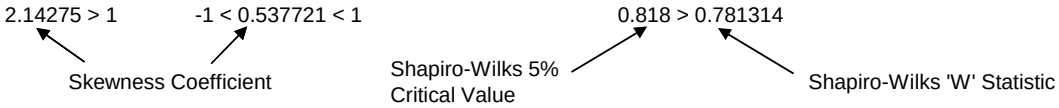


µg/L = micrograms per liter
mg/L = milligrams per liter
SU = standard units

Table 2
Summary of Descriptive Statistics and Prediction Limit Calculations
DTE Electric Company – Monroe Fly Ash Basin

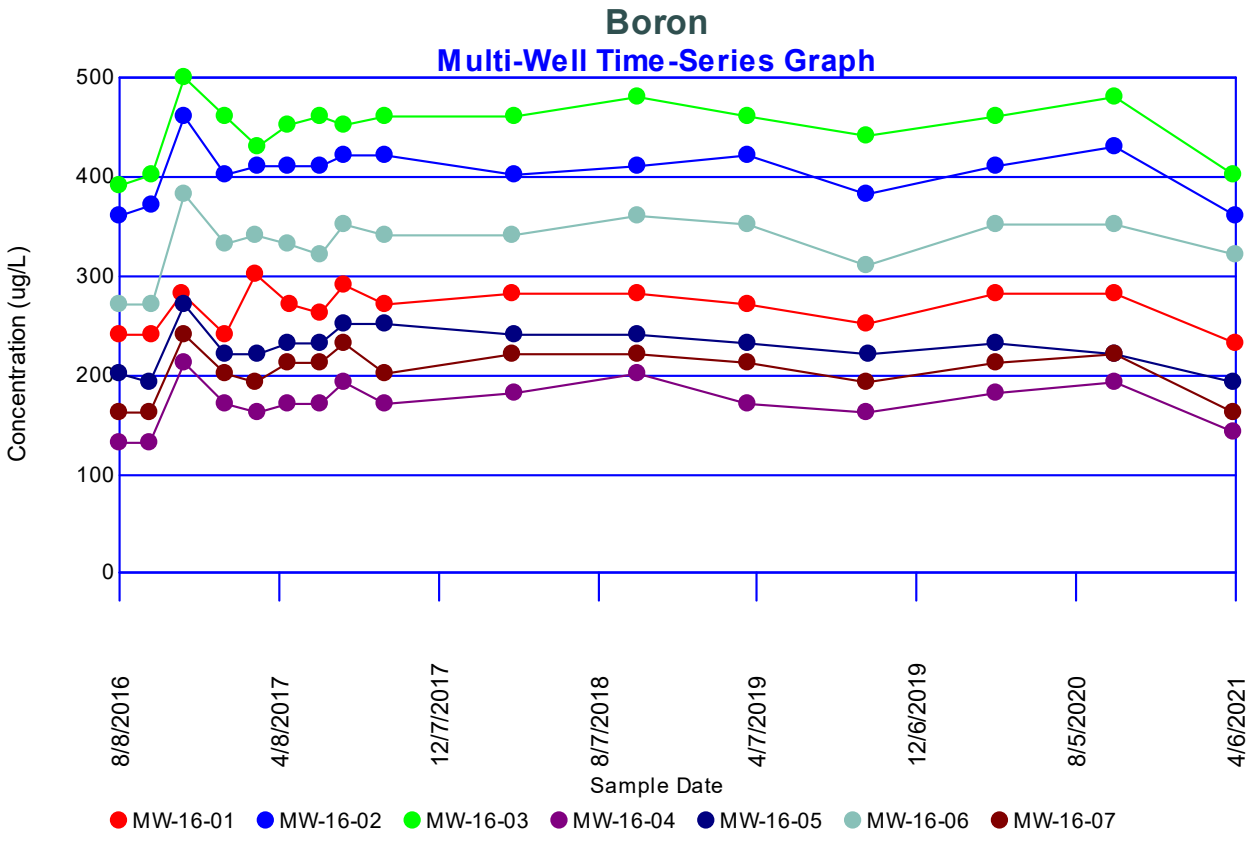
Monitoring Well	Skewness Test		Shapiro-Wilks Test (5% Critical Value)		Outliers Removed	Prediction Limit Test	Prediction Limit
	Un-Transformed Data	Natural Log Transformed Data	Un-Transformed Data	Natural Log Transformed Data			
pH (SU)							
MW-16-01	1 < 1.54212	1 < 1.43643	0.887 > 0.808104	0.887 > 0.829449	N	Non-Parametric	6.9 - 8.6
MW-16-02	-1 < 0.746227 < 1	--	--	--	N	Parametric	6.9 - 7.3
MW-16-03	-1 < -0.851435 < 1	--	--	--	N	Parametric	6.7 - 7.3
MW-16-04	1 < 1.59266	1 < 1.56084	0.887 > 0.782456	0.887 > 0.789255	N	Non-Parametric	7.0 - 7.5
MW-16-05	1 < 1.99058	1 < 1.91004	0.887 > 0.783261	0.887 > 0.797103	N	Non-Parametric	6.9 - 7.7
MW-16-06	1 < 1.48781	1 < 1.4624	0.887 > 0.815817	0.887 > 0.820775	N	Non-Parametric	7.0 - 7.3
MW-16-07	1 < 1.29855	1 < 1.26582	0.887 > 0.841699	0.887 > 0.847378	N	Non-Parametric	6.9 - 7.4
Sulfate (mg/L)							
MW-16-01	-1 < -0.380765 < 1	--	--	--	N	Parametric	1,600
MW-16-02	-1 < -0.4444444 < 1	--	--	--	N	Parametric	1,700
MW-16-03	-1 < 0.380765 < 1	--	--	--	N	Parametric	1,700
MW-16-04	-1 < 0.177933 < 1	--	--	--	N	Parametric	1,500
MW-16-05	-1 < 0 < 1	--	--	--	N	Parametric	1,600
MW-16-06	-1 < 0.0893666 < 1	--	--	--	N	Parametric	1,600
MW-16-07	-1 < 0.816497 < 1	--	--	--	N	Parametric	1,600
Total Dissolved Solids (mg/L)							
MW-16-01	-2.06437 < -1	-2.26803 < -1	0.887 > 0.707629	0.887 > 0.678147	N	Non-Parametric	2,200
MW-16-02	-1 < 0 < 1	--	--	--	N	Parametric	2,300
MW-16-03	-1 < -0.207363 < 1	--	--	--	N	Parametric	2,400
MW-16-04	-1 < -0.957395 < 1	--	--	--	N	Parametric	2,300
MW-16-05	-1 < 0.101753 < 1	--	--	--	N	Parametric	2,200
MW-16-06	-1 < 0.229678 < 1	--	--	--	N	Parametric	2,300
MW-16-07	-1 < -0.812958 < 1	--	--	--	N	Parametric	2,200

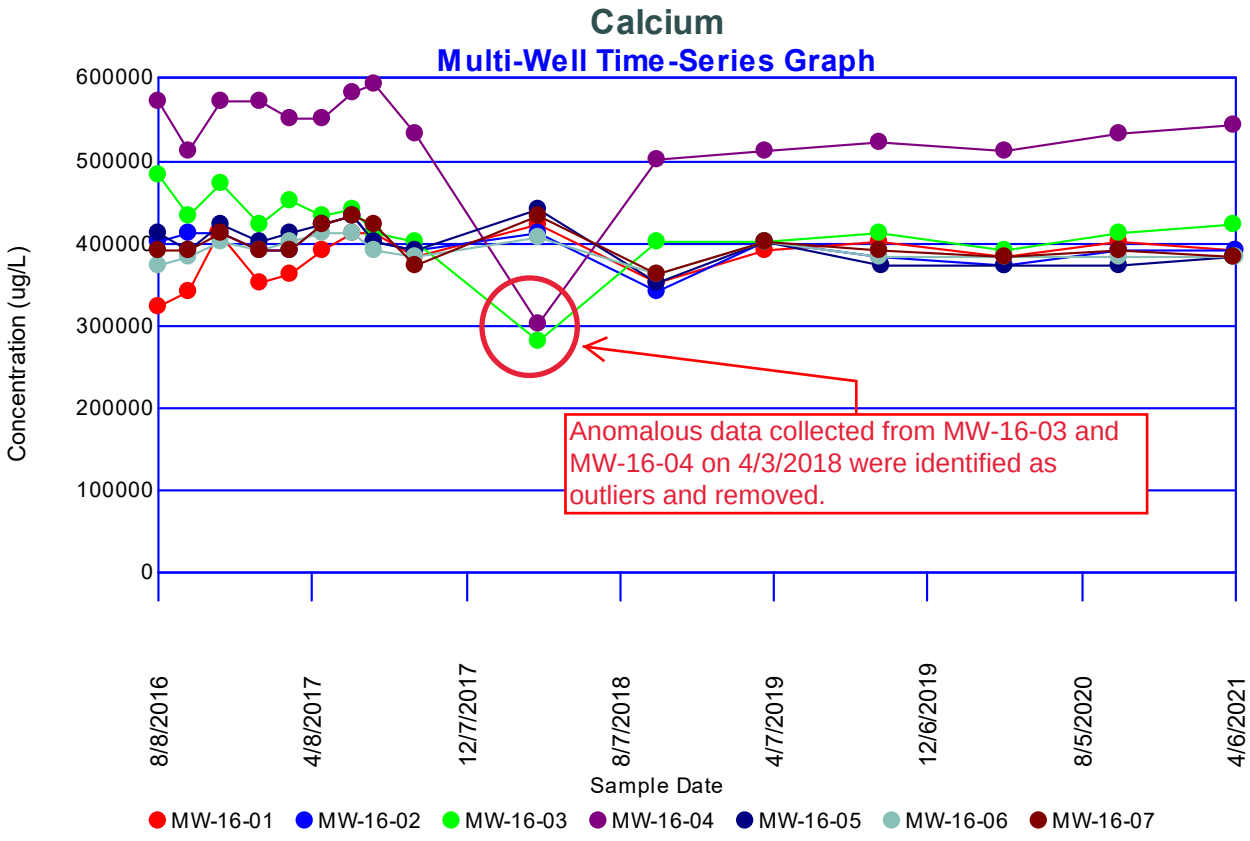
Notes:



µg/L = micrograms per liter
mg/L = milligrams per liter
SU = standard units

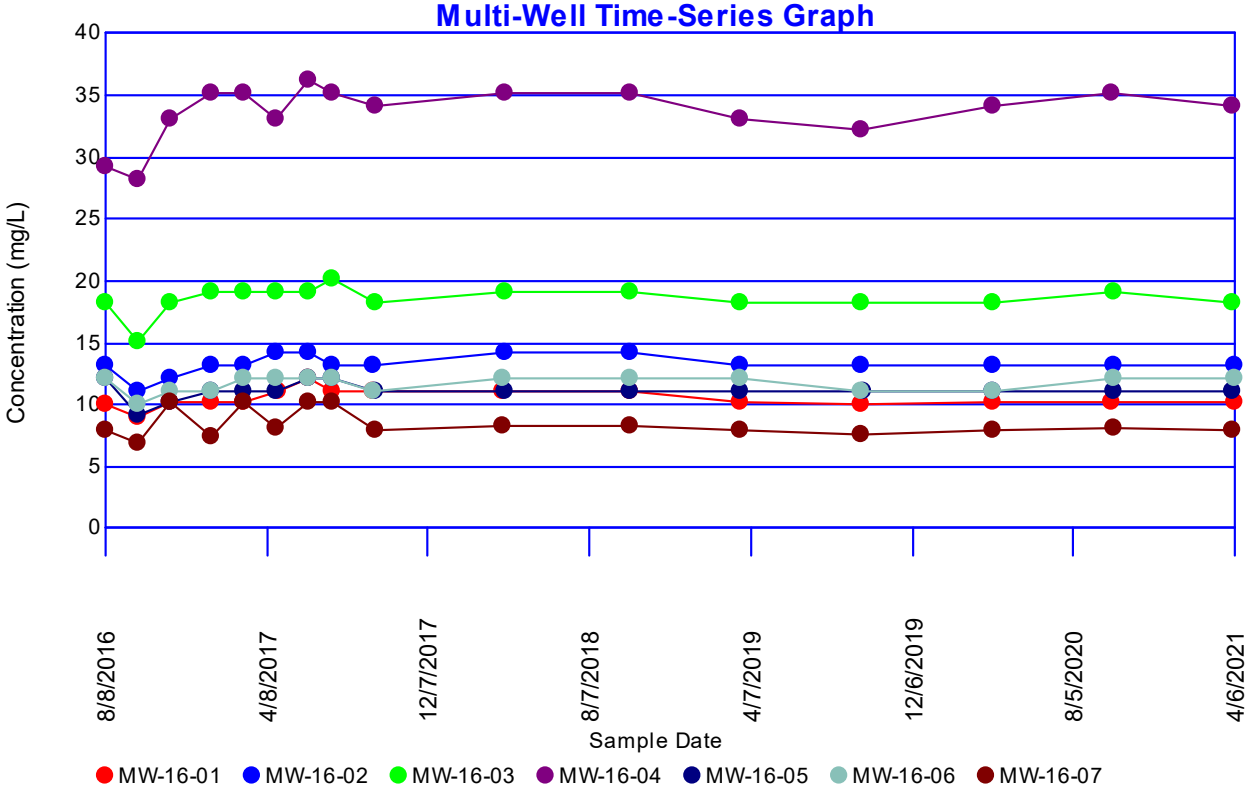
Attachment A
ChemStat™ Prediction Limit Outputs


Boron
Multi-Well Time-Series Graph
Concentration (ug/L)
500
400
300
200
100
0
8/8/2016
4/8/2017
12/7/2017
8/7/2018
4/7/2019
12/6/2019
8/5/2020
4/6/2021
Sample Date
MW-16-01
MW-16-02
MW-16-03
MW-16-04
MW-16-05
MW-16-06
MW-16-07


Calcium
Multi-Well Time-Series Graph
Concentration (ug/L)
600000
500000
400000
300000
200000
100000
0
Anomalous data collected from MW-16-03 and MW-16-04 on 4/3/2018 were identified as outliers and removed.
8/8/2016
4/8/2017
12/7/2017
8/7/2018
4/7/2019
12/6/2019
8/5/2020
4/6/2021
Sample Date
MW-16-01
MW-16-02
MW-16-03
MW-16-04
MW-16-05
MW-16-06
MW-16-07

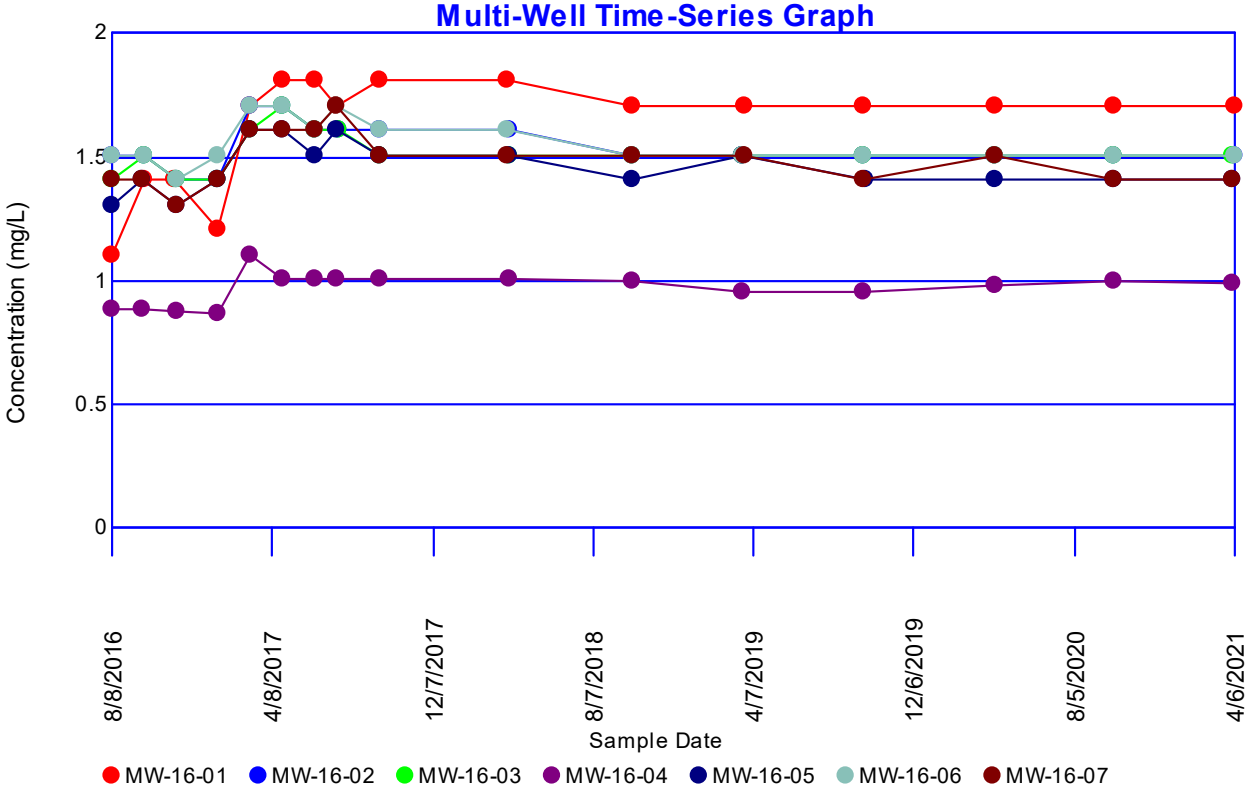
Chloride

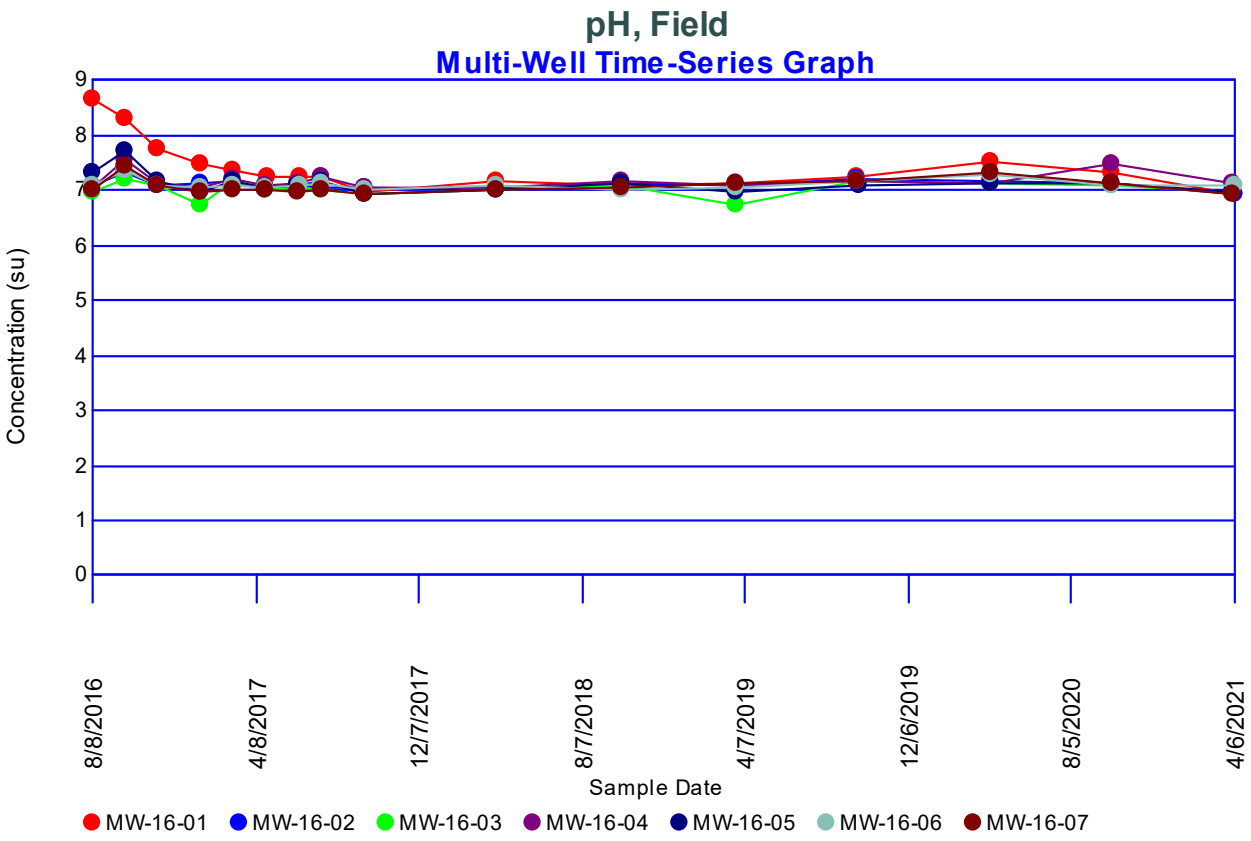
Multi-Well Time-Series Graph



Fluoride

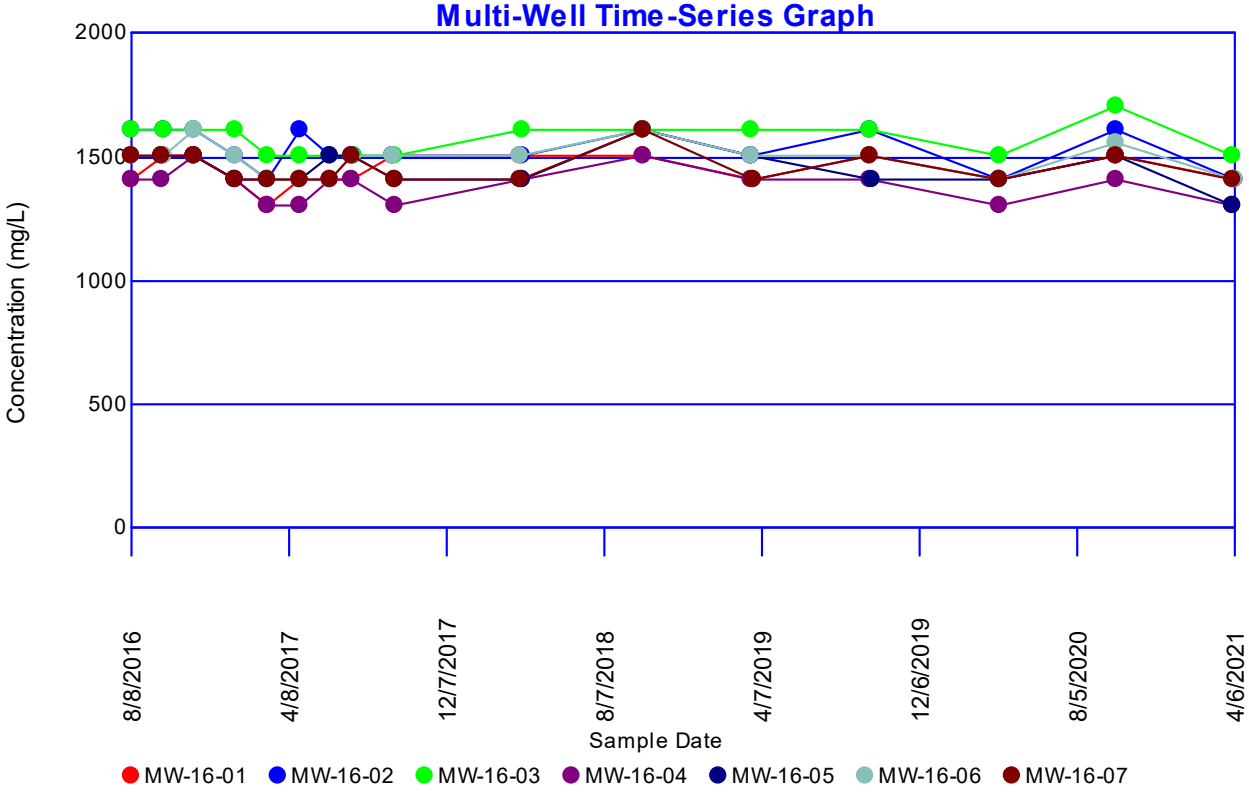
Multi-Well Time-Series Graph

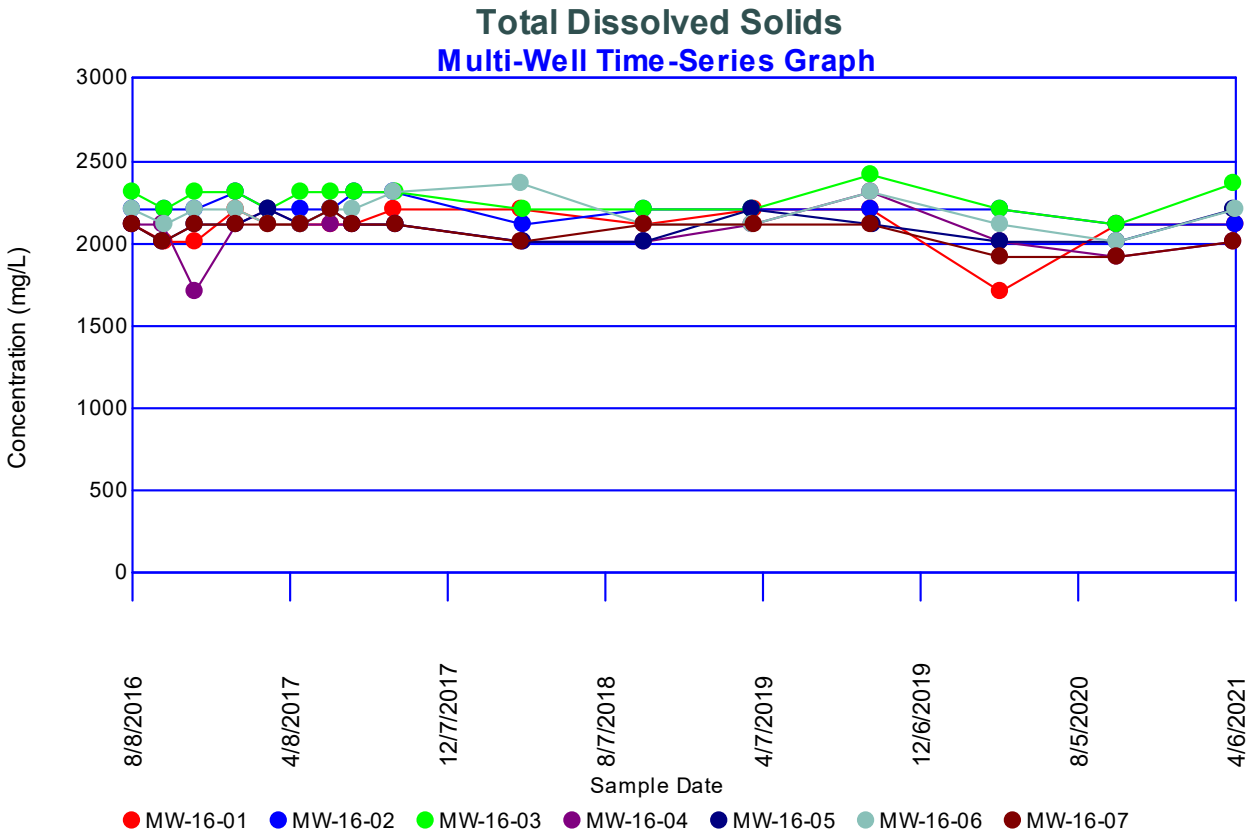


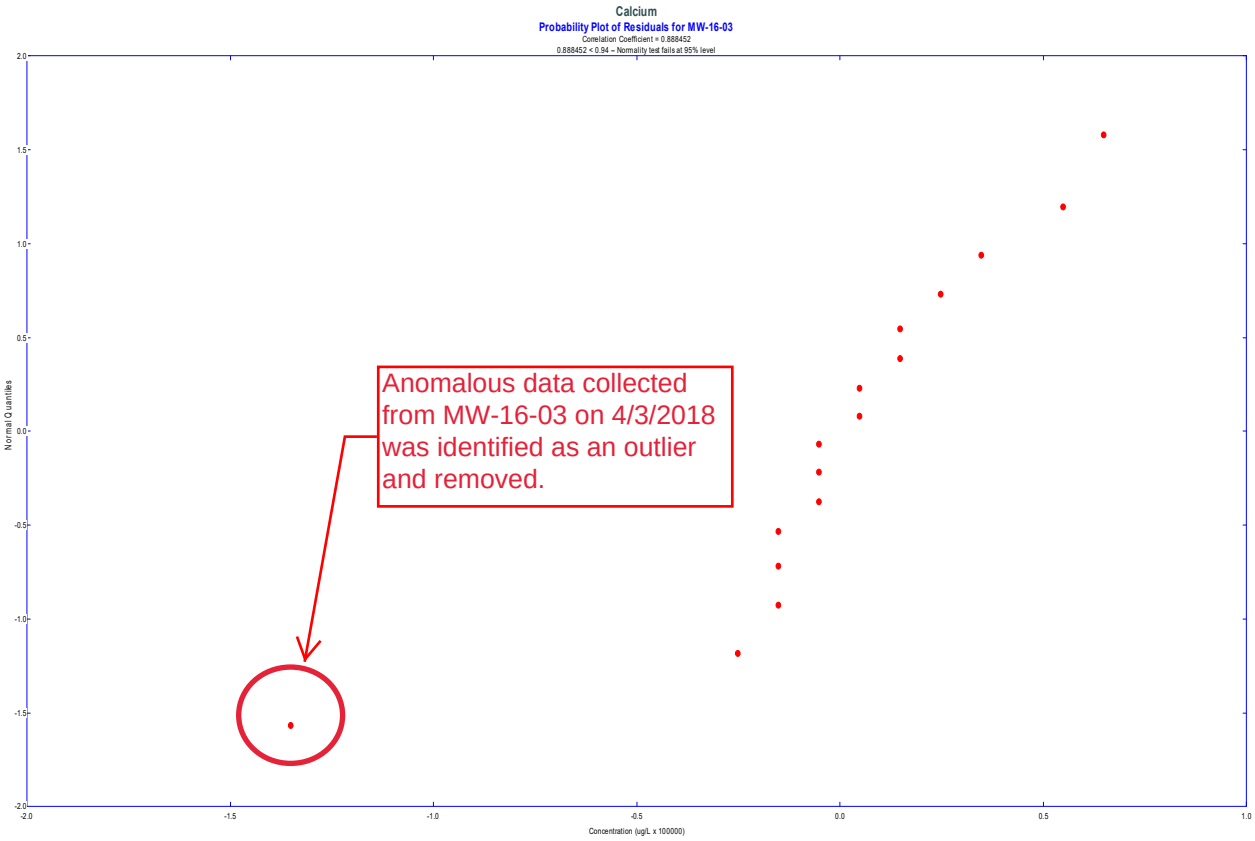

pH, Field
Multi-Well Time-Series Graph
Concentration (su)
9
8
7
6
5
4
3
2
1
0
8/8/2016
4/8/2017
12/7/2017
8/7/2018
4/7/2019
12/6/2019
8/5/2020
4/6/2021
Sample Date
MW-16-01
MW-16-02
MW-16-03
MW-16-04
MW-16-05
MW-16-06
MW-16-07

Sulfate

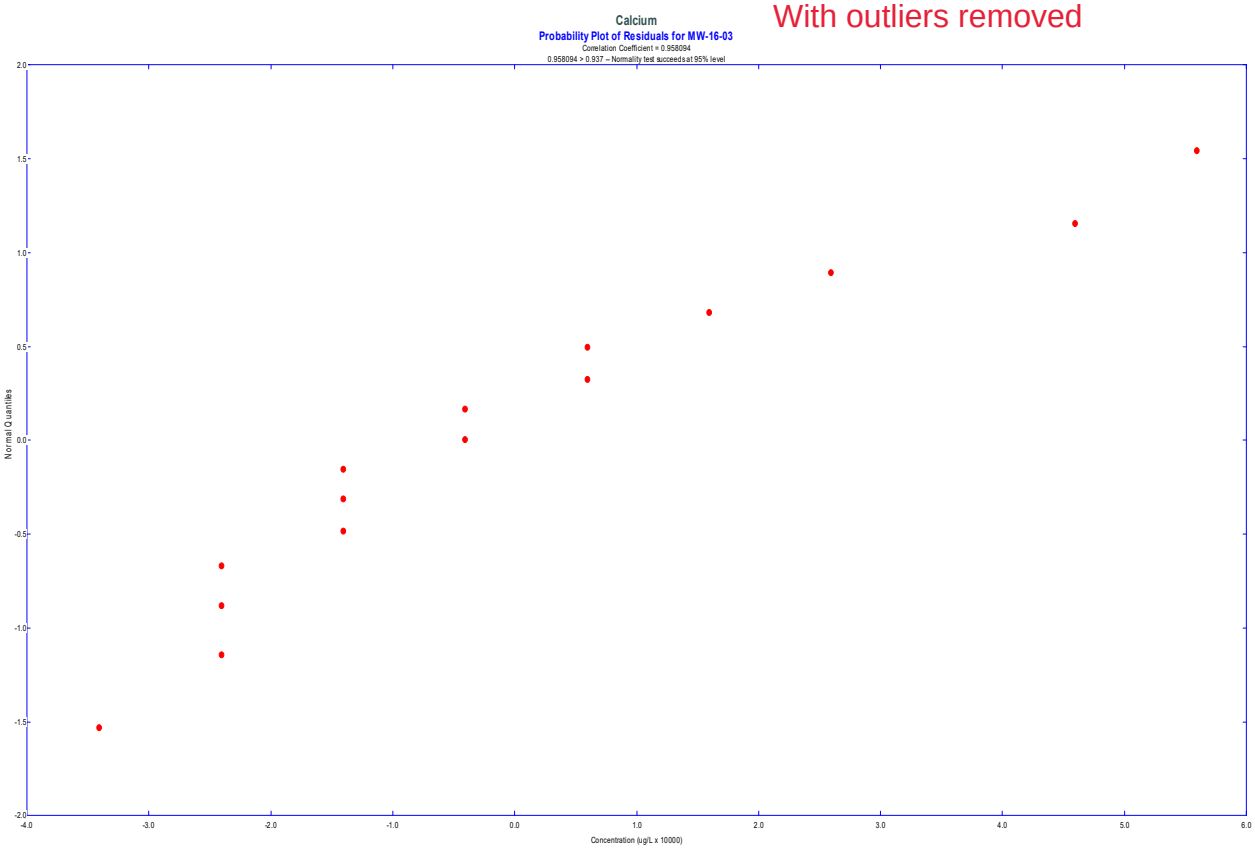
Multi-Well Time-Series Graph

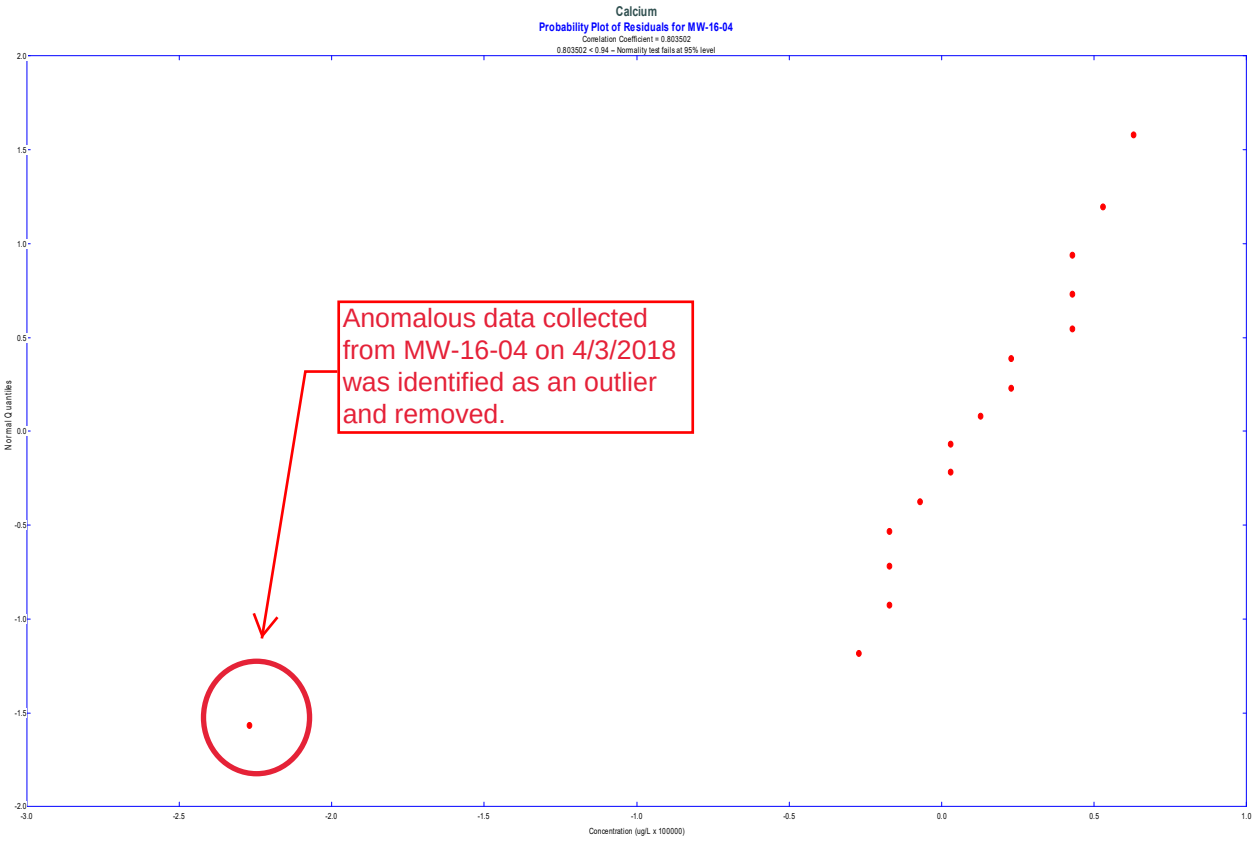



Total Dissolved Solids
Multi-Well Time-Series Graph
Concentration (mg/L)
3000
2500
2000
1500
1000
500
0
8/8/2016
4/8/2017
12/7/2017
8/7/2018
4/7/2019
12/6/2019
8/5/2020
4/6/2021
Sample Date
MW-16-01
MW-16-02
MW-16-03
MW-16-04
MW-16-05
MW-16-06
MW-16-07

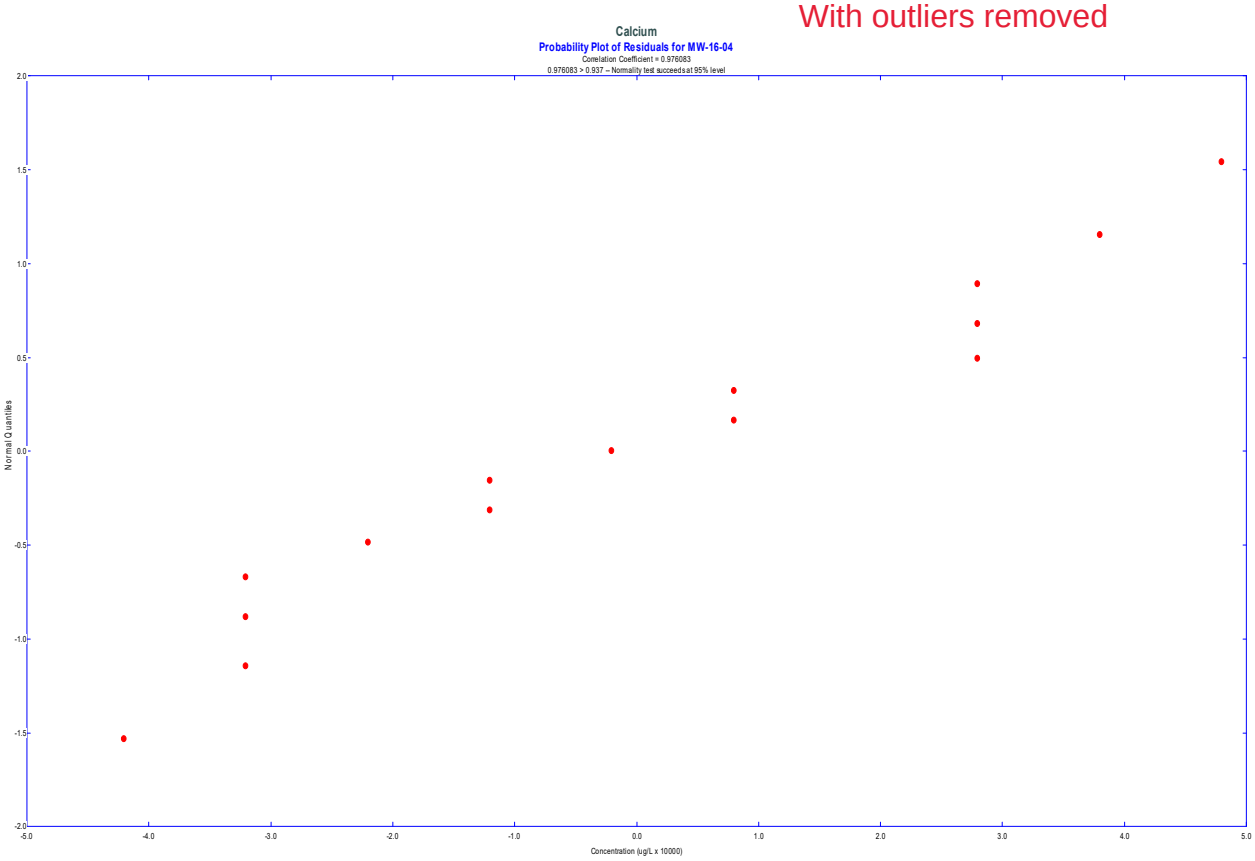

Calcium
Probability Plot of Residuals for MW-16-03
Correlation Coefficient = 0.888452
0.888452 < 0.94 – Normality test fails at 95% level
Normal Quantiles
Concentration (ug/L x 100000)
Anomalous data collected from MW-16-03 on 4/3/2018 was identified as an outlier and removed.

With outliers removed




Calcium
Probability Plot of Residuals for MW-16-04
Correlation Coefficient = 0.803502
0.803502 < 0.94 – Normality test fails at 95% level
Anomalous data collected from MW-16-04 on 4/3/2018 was identified as an outlier and removed.
Normal Quantiles
Concentration (ug/L x 100000)
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-3.0
-2.5
-2.0
-1.5
-1.0
-0.5
0.0
0.5
1.0

With outliers removed



Dixon's Test for Outliers

Parameter: Calcium

Location: MW-16-03

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

For 16 Measurements...
1% Level of Significance

Iteration	Highest	Lowest	Critical	Outlier
1	0.375	0.705882	0.595	280000
2	0.375	0.166667	0.616	None

Loc.	Date	Conc.	Outlier
MW-16-03	8/8/2016	480000	FALSE
	9/27/2016	430000	FALSE
	11/15/2016	470000	FALSE
	1/17/2017	420000	FALSE
	3/7/2017	450000	FALSE
	4/25/2017	430000	FALSE
	6/12/2017	440000	FALSE
	7/18/2017	410000	FALSE
	9/19/2017	400000	FALSE
	4/3/2018	**280000**	**TRUE**
	10/8/2018	400000	FALSE
	3/25/2019	400000	FALSE
	9/23/2019	410000	FALSE
	4/8/2020	390000	FALSE
	10/6/2020	410000	FALSE
	4/5/2021	420000	FALSE

Dixon's Test for Outliers

Parameter: Calcium

Location: MW-16-04

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

For 16 Measurements...
1% Level of Significance

Iteration	Highest	Lowest	Critical	Outlier
1	0.25	0.777778	0.595	300000
2	0.25	0.142857	0.616	None

Loc.	Date	Conc.	Outlier
MW-16-04	8/9/2016	570000	FALSE
	9/26/2016	510000	FALSE
	11/15/2016	570000	FALSE
	1/17/2017	570000	FALSE
	3/7/2017	550000	FALSE
	4/25/2017	550000	FALSE
	6/12/2017	580000	FALSE
	7/17/2017	590000	FALSE
	9/19/2017	530000	FALSE
	4/3/2018	**300000**	**TRUE**
	10/8/2018	500000	FALSE
	3/25/2019	510000	FALSE
	9/23/2019	520000	FALSE
	4/8/2020	510000	FALSE
	10/5/2020	530000	FALSE
	4/5/2021	540000	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-01

Parameter: Boron

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	240
	9/27/2016	240
	11/14/2016	280
	1/17/2017	240
	3/6/2017	300
	4/26/2017	270 B
	6/13/2017	260
	7/17/2017	290
	9/18/2017	270
	4/2/2018	280
	10/8/2018	280
	3/26/2019	270
	9/23/2019	250
	4/8/2020	280
	10/5/2020	280

From 15 baseline samples
Baseline mean = 268.667
Baseline std Dev = 18.8478

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/6/2021	1	230	[0, 302.952]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-02

Parameter: Boron

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	360
	9/27/2016	370
	11/15/2016	460
	1/17/2017	400
	3/7/2017	410
	4/25/2017	410 B
	6/12/2017	410
	7/18/2017	420
	9/18/2017	420
	4/3/2018	400
	10/8/2018	410
	3/25/2019	420
	9/23/2019	380
	4/8/2020	410
	10/6/2020	430

From 15 baseline samples
Baseline mean = 407.333
Baseline std Dev = 24.3389

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/6/2021	1	360	[0, 451.608]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-03

Parameter: Boron

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	390
	9/27/2016	400
	11/15/2016	500
	1/17/2017	460
	3/7/2017	430
	4/25/2017	450 B
	6/12/2017	460
	7/18/2017	450
	9/19/2017	460
	4/3/2018	460
	10/8/2018	480
	3/25/2019	460
	9/23/2019	440
	4/8/2020	460
	10/6/2020	480

From 15 baseline samples
Baseline mean = 452
Baseline std Dev = 28.5857

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	400	[0, 503.999]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-04

Parameter: Boron

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	130
	9/26/2016	130
	11/15/2016	210
	1/17/2017	170 J
	3/7/2017	160 J
	4/25/2017	170 JB
	6/12/2017	170 J
	7/17/2017	190 J
	9/19/2017	170 J
	4/3/2018	180
	10/8/2018	200
	3/25/2019	170
	9/23/2019	160
	4/8/2020	180
	10/5/2020	190

From 15 baseline samples
Baseline mean = 172
Baseline std Dev = 22.1037

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	140	[0, 212.208]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-05

Parameter: Boron

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	200
	9/26/2016	190
	11/15/2016	270
	1/17/2017	220
	3/7/2017	220
	4/25/2017	230 B
	6/12/2017	230
	7/17/2017	250
	9/19/2017	250
	4/3/2018	240
	10/8/2018	240
	3/25/2019	230
	9/25/2019	220
	4/8/2020	230
	10/6/2020	220

From 15 baseline samples
Baseline mean = 229.333
Baseline std Dev = 19.8086

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	190	[0, 265.367]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-06

Parameter: Boron

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	270
	9/27/2016	270
	11/15/2016	380
	1/17/2017	330
	3/6/2017	340
	4/25/2017	330 B
	6/13/2017	320
	7/17/2017	350
	9/18/2017	340
	4/2/2018	340
	10/8/2018	360
	3/25/2019	350
	9/23/2019	310
	4/8/2020	350
	10/6/2020	350

From 15 baseline samples
Baseline mean = 332.667
Baseline std Dev = 30.3472

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/6/2021	1	320	[0, 387.87]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-07

Parameter: Boron

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	160
	9/26/2016	160
	11/15/2016	240
	1/17/2017	200
	3/6/2017	190 J
	4/25/2017	210 B
	6/12/2017	210
	7/17/2017	230
	9/19/2017	200
	4/2/2018	220
	10/8/2018	220
	3/26/2019	210
	9/23/2019	190
	4/8/2020	210
	10/6/2020	220

From 15 baseline samples
Baseline mean = 204.667
Baseline std Dev = 22.6358

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	160	[0, 245.843]	FALSE

Skewness Coefficient

Parameter: Calcium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	16	381250	29183.3	-0.625903
MW-16-02	16	395000	20976.2	-0.872831
MW-16-03	15	424000	26403.5	0.827122
MW-16-04	15	542000	29081.2	0.137804
MW-16-05	16	396875	24689.7	-0.0951061
MW-16-06	16	388438	14573.8	-0.0807415
MW-16-07	16	396250	20615.5	0.240175

All Locations

Obs.	Mean	Std. Dev.	Skewness
110	416500	56615.4	**1.51401**

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-01

Parameter: Calcium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	320000
	9/27/2016	340000
	11/14/2016	410000
	1/17/2017	350000
	3/6/2017	360000
	4/26/2017	390000
	6/13/2017	410000
	7/17/2017	410000
	9/18/2017	380000
	4/2/2018	420000
	10/8/2018	350000
	3/26/2019	390000
	9/23/2019	400000
	4/8/2020	380000
	10/5/2020	400000

From 15 baseline samples
Baseline mean = 380667
Baseline std Dev = 30110.9

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/6/2021	1	390000	[0, 435441]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-02

Parameter: Calcium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	400000
	9/27/2016	410000
	11/15/2016	410000
	1/17/2017	390000
	3/7/2017	390000
	4/25/2017	420000
	6/12/2017	430000
	7/18/2017	400000
	9/18/2017	390000
	4/3/2018	410000
	10/8/2018	340000
	3/25/2019	400000
	9/23/2019	380000
	4/8/2020	370000
	10/6/2020	390000

From 15 baseline samples
Baseline mean = 395333
Baseline std Dev = 21668.5

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/6/2021	1	390000	[0, 434750]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-03

Parameter: Calcium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	480000
	9/27/2016	430000
	11/15/2016	470000
	1/17/2017	420000
	3/7/2017	450000
	4/25/2017	430000
	6/12/2017	440000
	7/18/2017	410000
	9/19/2017	400000
	10/8/2018	400000
	3/25/2019	400000
	9/23/2019	410000
	4/8/2020	390000
	10/6/2020	410000

From 14 baseline samples
Baseline mean = 424286
Baseline std Dev = 27376.1

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 14 (background observations) - 1
t(0.95, 14) = 1.77093

Date	Samples	Mean	Interval	Significant
4/5/2021	1	420000	[0, 474469]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-04

Parameter: Calcium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	570000
	9/26/2016	510000
	11/15/2016	570000
	1/17/2017	570000
	3/7/2017	550000
	4/25/2017	550000
	6/12/2017	580000
	7/17/2017	590000
	9/19/2017	530000
	10/8/2018	500000
	3/25/2019	510000
	9/23/2019	520000
	4/8/2020	510000
	10/5/2020	530000

From 14 baseline samples
Baseline mean = 542143
Baseline std Dev = 30173.5

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 14 (background observations) - 1
t(0.95, 14) = 1.77093

Date	Samples	Mean	Interval	Significant
4/5/2021	1	540000	[0, 597454]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-05

Parameter: Calcium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	410000
	9/26/2016	390000
	11/15/2016	420000
	1/17/2017	400000
	3/7/2017	410000
	4/25/2017	420000
	6/12/2017	430000
	7/17/2017	400000
	9/19/2017	390000
	4/3/2018	440000
	10/8/2018	350000
	3/25/2019	400000
	9/25/2019	370000
	4/8/2020	370000
	10/6/2020	370000

From 15 baseline samples
Baseline mean = 398000
Baseline std Dev = 25128.2

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	380000	[0, 443710]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-06

Parameter: Calcium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	370000
	9/27/2016	380000
	11/15/2016	400000
	1/17/2017	390000
	3/6/2017	400000
	4/25/2017	410000
	6/13/2017	410000
	7/17/2017	390000
	9/18/2017	380000
	4/2/2018 ~	405000 V
	10/8/2018	360000
	3/25/2019	400000
	9/23/2019	380000
	4/8/2020	380000
	10/6/2020	380000

From 15 baseline samples
Baseline mean = 389000
Baseline std Dev = 14904.5

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/6/2021	1	380000	[0, 416112]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-07

Parameter: Calcium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	390000
	9/26/2016	390000
	11/15/2016	410000
	1/17/2017	390000
	3/6/2017	390000
	4/25/2017	420000
	6/12/2017	430000
	7/17/2017	420000
	9/19/2017	370000
	4/2/2018 ~	430000
	10/8/2018	360000
	3/26/2019	400000
	9/23/2019	390000
	4/8/2020	380000
	10/6/2020	390000

From 15 baseline samples
Baseline mean = 397333
Baseline std Dev = 20862.4

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	380000	[0, 435283]	FALSE

Skewness Coefficient

Parameter: Chloride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	16	10.0375	1.53704	**-2.23206**
MW-16-02	16	13.0625	0.771902	-0.999982
MW-16-03	16	18.375	1.08781	**-1.7551**
MW-16-04	16	33.5	2.22111	**-1.41382**
MW-16-05	16	10.6875	1.66208	**-2.7242**
MW-16-06	16	11.55	0.663325	**-1.2456**
MW-16-07	16	7.3375	1.3301	-0.523641

All Locations

Obs.	Mean	Std. Dev.	Skewness
112	14.9357	8.35582	**1.45982**

Skewness Coefficient

Parameter: Chloride

Original Data (Not Transformed)

Aitchison's Adjustment

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	16	9.725	2.69877	0.075322
MW-16-02	16	13.0625	0.771902	-0.999982
MW-16-03	16	18.375	1.08781	**-1.7551**
MW-16-04	16	33.5	2.22111	**-1.41382**
MW-16-05	16	10.375	2.84898	0.0384288
MW-16-06	16	11.55	0.663325	**-1.2456**
MW-16-07	16	6.4	3.2414	0.44099

All Locations

Obs.	Mean	Std. Dev.	Skewness
112	14.7125	8.68166	**1.42945**

Skewness Coefficient

Parameter: Chloride

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	16	2.2912	0.195548	**-2.80942**
MW-16-02	16	2.56803	0.0611718	**-1.22318**
MW-16-03	16	2.90922	0.0627817	**-2.01284**
MW-16-04	16	3.50934	0.0697715	**-1.52159**
MW-16-05	16	2.35239	0.208409	**-3.08672**
MW-16-06	16	2.44506	0.0597015	**-1.35791**
MW-16-07	16	1.97578	0.197599	-0.945448

All Locations

Obs.	Mean	Std. Dev.	Skewness
112	2.57872	0.483079	0.543062

Shapiro-Wilks Test of Normality

Parameter: Chloride

Location: MW-16-01

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	5	12	7	0.5056	3.5392
2	8.8	11	2.2	0.329	0.7238
3	9.9	11	1.1	0.2521	0.27731
4	9.9	11	1.1	0.1939	0.21329
5	10	11	1	0.1447	0.1447
6	10	11	1	0.1005	0.1005
7	10	10	0	0.0593	0
8	10	10	0	0.0196	0
9	10	10	0		
10	10	10	0		
11	11	10	-1		
12	11	10	-1		
13	11	9.9	-1.1		
14	11	9.9	-1.1		
15	11	8.8	-2.2		
16	12	5	-7		

Sum of b values = 4.9988

Sample Standard Deviation = 1.53704

W Statistic = 0.705129

5% Critical value of 0.887 exceeds 0.705129

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.705129

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Chloride

Location: MW-16-01

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1.60944	2.48491	0.875469	0.5056	0.442637
2	2.17475	2.3979	0.223144	0.329	0.0734142
3	2.29253	2.3979	0.105361	0.2521	0.0265614
4	2.29253	2.3979	0.105361	0.1939	0.0204294
5	2.30259	2.3979	0.0953102	0.1447	0.0137914
6	2.30259	2.3979	0.0953102	0.1005	0.00957867
7	2.30259	2.30259	0	0.0593	0
8	2.30259	2.30259	0	0.0196	0
9	2.30259	2.30259	0		
10	2.30259	2.30259	0		
11	2.3979	2.30259	-0.0953102		
12	2.3979	2.30259	-0.0953102		
13	2.3979	2.29253	-0.105361		
14	2.3979	2.29253	-0.105361		
15	2.3979	2.17475	-0.223144		
16	2.48491	1.60944	-0.875469		

Sum of b values = 0.586412

Sample Standard Deviation = 0.195548

W Statistic = 0.599528

5% Critical value of 0.887 exceeds 0.599528

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.599528

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Chloride

Location: MW-16-03

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	15	20	5	0.5056	2.528
2	18	19	1	0.329	0.329
3	18	19	1	0.2521	0.2521
4	18	19	1	0.1939	0.1939
5	18	19	1	0.1447	0.1447
6	18	19	1	0.1005	0.1005
7	18	19	1	0.0593	0.0593
8	18	19	1	0.0196	0.0196
9	19	18	-1		
10	19	18	-1		
11	19	18	-1		
12	19	18	-1		
13	19	18	-1		
14	19	18	-1		
15	19	18	-1		
16	20	15	-5		

Sum of b values = 3.6271

Sample Standard Deviation = 1.08781

W Statistic = 0.741175

5% Critical value of 0.887 exceeds 0.741175

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.741175

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Chloride

Location: MW-16-03

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	2.70805	2.99573	0.287682	0.5056	0.145452
2	2.89037	2.94444	0.0540672	0.329	0.0177881
3	2.89037	2.94444	0.0540672	0.2521	0.0136303
4	2.89037	2.94444	0.0540672	0.1939	0.0104836
5	2.89037	2.94444	0.0540672	0.1447	0.00782353
6	2.89037	2.94444	0.0540672	0.1005	0.00543376
7	2.89037	2.94444	0.0540672	0.0593	0.00320619
8	2.89037	2.94444	0.0540672	0.0196	0.00105972
9	2.94444	2.89037	-0.0540672		
10	2.94444	2.89037	-0.0540672		
11	2.94444	2.89037	-0.0540672		
12	2.94444	2.89037	-0.0540672		
13	2.94444	2.89037	-0.0540672		
14	2.94444	2.89037	-0.0540672		
15	2.94444	2.89037	-0.0540672		
16	2.99573	2.70805	-0.287682		

Sum of b values = 0.204877

Sample Standard Deviation = 0.0627817

W Statistic = 0.709955

5% Critical value of 0.887 exceeds 0.709955

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.709955

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Chloride

Location: MW-16-04

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	28	36	8	0.5056	4.0448
2	29	35	6	0.329	1.974
3	32	35	3	0.2521	0.7563
4	33	35	2	0.1939	0.3878
5	33	35	2	0.1447	0.2894
6	33	35	2	0.1005	0.201
7	34	35	1	0.0593	0.0593
8	34	34	0	0.0196	0
9	34	34	0		
10	35	34	-1		
11	35	33	-2		
12	35	33	-2		
13	35	33	-2		
14	35	32	-3		
15	35	29	-6		
16	36	28	-8		

Sum of b values = 7.7126

Sample Standard Deviation = 2.22111

W Statistic = 0.803841

5% Critical value of 0.887 exceeds 0.803841

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.803841

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Chloride

Location: MW-16-04

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	3.3322	3.58352	0.251314	0.5056	0.127065
2	3.3673	3.55535	0.188052	0.329	0.0618692
3	3.46574	3.55535	0.0896122	0.2521	0.0225912
4	3.49651	3.55535	0.0588405	0.1939	0.0114092
5	3.49651	3.55535	0.0588405	0.1447	0.00851422
6	3.49651	3.55535	0.0588405	0.1005	0.00591347
7	3.52636	3.55535	0.0289875	0.0593	0.00171896
8	3.52636	3.52636	0	0.0196	0
9	3.52636	3.52636	0		
10	3.55535	3.52636	-0.0289875		
11	3.55535	3.49651	-0.0588405		
12	3.55535	3.49651	-0.0588405		
13	3.55535	3.49651	-0.0588405		
14	3.55535	3.46574	-0.0896122		
15	3.55535	3.3673	-0.188052		
16	3.58352	3.3322	-0.251314		

Sum of b values = 0.239081

Sample Standard Deviation = 0.0697715

W Statistic = 0.782784

5% Critical value of 0.887 exceeds 0.782784

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.782784

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Chloride

Location: MW-16-05

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	5	12	7	0.5056	3.5392
2	9	12	3	0.329	0.987
3	11	12	1	0.2521	0.2521
4	11	11	0	0.1939	0
5	11	11	0	0.1447	0
6	11	11	0	0.1005	0
7	11	11	0	0.0593	0
8	11	11	0	0.0196	0
9	11	11	0		
10	11	11	0		
11	11	11	0		
12	11	11	0		
13	11	11	0		
14	12	11	-1		
15	12	9	-3		
16	12	5	-7		

Sum of b values = 4.7783

Sample Standard Deviation = 1.66208

W Statistic = 0.551002

5% Critical value of 0.887 exceeds 0.551002

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.551002

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Chloride

Location: MW-16-05

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1.60944	2.48491	0.875469	0.5056	0.442637
2	2.19722	2.48491	0.287682	0.329	0.0946474
3	2.3979	2.48491	0.0870114	0.2521	0.0219356
4	2.3979	2.3979	0	0.1939	0
5	2.3979	2.3979	0	0.1447	0
6	2.3979	2.3979	0	0.1005	0
7	2.3979	2.3979	0	0.0593	0
8	2.3979	2.3979	0	0.0196	0
9	2.3979	2.3979	0		
10	2.3979	2.3979	0		
11	2.3979	2.3979	0		
12	2.3979	2.3979	0		
13	2.3979	2.3979	0		
14	2.48491	2.3979	-0.0870114		
15	2.48491	2.19722	-0.287682		
16	2.48491	1.60944	-0.875469		

Sum of b values = 0.55922

Sample Standard Deviation = 0.208409

W Statistic = 0.48

5% Critical value of 0.887 exceeds 0.48

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.48

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Chloride

Location: MW-16-06

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	9.8	12	2.2	0.5056	1.11232
2	11	12	1	0.329	0.329
3	11	12	1	0.2521	0.2521
4	11	12	1	0.1939	0.1939
5	11	12	1	0.1447	0.1447
6	11	12	1	0.1005	0.1005
7	12	12	0	0.0593	0
8	12	12	0	0.0196	0
9	12	12	0		
10	12	12	0		
11	12	11	-1		
12	12	11	-1		
13	12	11	-1		
14	12	11	-1		
15	12	11	-1		
16	12	9.8	-2.2		

Sum of b values = 2.13252

Sample Standard Deviation = 0.663325

W Statistic = 0.689037

5% Critical value of 0.887 exceeds 0.689037

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.689037

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Chloride

Location: MW-16-06

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	2.28238	2.48491	0.202524	0.5056	0.102396
2	2.3979	2.48491	0.0870114	0.329	0.0286267
3	2.3979	2.48491	0.0870114	0.2521	0.0219356
4	2.3979	2.48491	0.0870114	0.1939	0.0168715
5	2.3979	2.48491	0.0870114	0.1447	0.0125905
6	2.3979	2.48491	0.0870114	0.1005	0.00874464
7	2.48491	2.48491	0	0.0593	0
8	2.48491	2.48491	0	0.0196	0
9	2.48491	2.48491	0		
10	2.48491	2.48491	0		
11	2.48491	2.3979	-0.0870114		
12	2.48491	2.3979	-0.0870114		
13	2.48491	2.3979	-0.0870114		
14	2.48491	2.3979	-0.0870114		
15	2.48491	2.3979	-0.0870114		
16	2.48491	2.28238	-0.202524		

Sum of b values = 0.191165

Sample Standard Deviation = 0.0597015

W Statistic = 0.683527

5% Critical value of 0.887 exceeds 0.683527

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.683527

Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-01

Parameter: Chloride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 6.66667%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 12
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/8/2016	9.9
	9/27/2016	8.8
	11/14/2016	ND<5 U
	1/17/2017	10
	3/6/2017	10
	4/26/2017	11
	6/13/2017	12
	7/17/2017	11
	9/18/2017	11
	4/2/2018	11
	10/8/2018	11
	3/26/2019	10
	9/23/2019	9.9
	4/8/2020	10
	10/5/2020	10

Date	Count	Mean	Significant
4/6/2021	1	10	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-02

Parameter: Chloride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	13
	9/27/2016	11
	11/15/2016	12
	1/17/2017	13
	3/7/2017	13
	4/25/2017	14
	6/12/2017	14
	7/18/2017	13
	9/18/2017	13
	4/3/2018	14
	10/8/2018	14
	3/25/2019	13
	9/23/2019	13
	4/8/2020	13
	10/6/2020	13

From 15 baseline samples
Baseline mean = 13.0667
Baseline std Dev = 0.798809

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/6/2021	1	13	[0, 14.5198]	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-03

Parameter: Chloride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 20
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/8/2016	18
	9/27/2016	15
	11/15/2016	18
	1/17/2017	19
	3/7/2017	19
	4/25/2017	19
	6/12/2017	19
	7/18/2017	20
	9/19/2017	18
	4/3/2018	19
	10/8/2018	19
	3/25/2019	18
	9/23/2019	18
	4/8/2020	18
	10/6/2020	19

Date	Count	Mean	Significant
4/5/2021	1	18	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-04

Parameter: Chloride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 36
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/9/2016	29
	9/26/2016	28
	11/15/2016	33
	1/17/2017	35
	3/7/2017	35
	4/25/2017	33
	6/12/2017	36
	7/17/2017	35
	9/19/2017	34
	4/3/2018	35
	10/8/2018	35
	3/25/2019	33
	9/23/2019	32
	4/8/2020	34
	10/5/2020	35

Date	Count	Mean	Significant
4/5/2021	1	34	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-05

Parameter: Chloride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 6.66667%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 12
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/8/2016	12
	9/26/2016	9
	11/15/2016	ND<5 U
	1/17/2017	11
	3/7/2017	11
	4/25/2017	11
	6/12/2017	12
	7/17/2017	12
	9/19/2017	11
	4/3/2018	11
	10/8/2018	11
	3/25/2019	11
	9/25/2019	11
	4/8/2020	11
	10/6/2020	11

Date	Count	Mean	Significant
4/5/2021	1	11	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-06

Parameter: Chloride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 12
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/9/2016	12
	9/27/2016	9.8
	11/15/2016	11
	1/17/2017	11
	3/6/2017	12
	4/25/2017	12
	6/13/2017	12
	7/17/2017	12
	9/18/2017	11
	4/2/2018	12
	10/8/2018	12
	3/25/2019	12
	9/23/2019	11
	4/8/2020	11
	10/6/2020	12

Date	Count	Mean	Significant
4/6/2021	1	12	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-07

Parameter: Chloride

Original Data (Not Transformed)

Aitchison's Adjustment

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	7.7
	9/26/2016	6.8
	11/15/2016	ND<10 U
	1/17/2017	7.3
	3/6/2017	ND<10 U
	4/25/2017	8
	6/12/2017	ND<10 U
	7/17/2017	10
	9/19/2017	7.8
	4/2/2018	8.1
	10/8/2018	8.1
	3/26/2019	7.8
	9/23/2019	7.5
	4/8/2020	7.7
	10/6/2020	7.9

From 15 baseline samples
Baseline mean = 6.31333
Baseline std Dev = 3.33592

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	7.7	[0, 12.3816]	FALSE

Skewness Coefficient

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	16	1.61875	0.219754	**-1.33558**
MW-16-02	16	1.5375	0.0885061	0.391042
MW-16-03	16	1.5125	0.0806226	0.566607
MW-16-04	16	0.96375	0.0636527	-0.0834467
MW-16-05	16	1.45	0.0966092	0.229081
MW-16-06	16	1.55	0.0894427	0.57735
MW-16-07	16	1.48125	0.104682	0.38123

All Locations

Obs.	Mean	Std. Dev.	Skewness
112	1.44482	0.232898	**-1.03292**

Skewness Coefficient

Parameter: Fluoride

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	16	0.471672	0.151364	**-1.48068**
MW-16-02	16	0.428621	0.0571159	0.274218
MW-16-03	16	0.412453	0.0527006	0.424897
MW-16-04	16	-0.0389869	0.0665274	-0.243025
MW-16-05	16	0.369494	0.0663671	0.122761
MW-16-06	16	0.436722	0.0569334	0.489702
MW-16-07	16	0.390573	0.0700718	0.2421

All Locations

Obs.	Mean	Std. Dev.	Skewness
112	0.352935	0.181583	**-1.36029**

Shapiro-Wilks Test of Normality

Parameter: Fluoride

Location: MW-16-01

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1.1	1.8	0.7	0.5056	0.35392
2	1.2	1.8	0.6	0.329	0.1974
3	1.4	1.8	0.4	0.2521	0.10084
4	1.4	1.8	0.4	0.1939	0.07756
5	1.7	1.7	0	0.1447	0
6	1.7	1.7	0	0.1005	0
7	1.7	1.7	0	0.0593	0
8	1.7	1.7	0	0.0196	0
9	1.7	1.7	0		
10	1.7	1.7	0		
11	1.7	1.7	0		
12	1.7	1.7	0		
13	1.8	1.4	-0.4		
14	1.8	1.4	-0.4		
15	1.8	1.2	-0.6		
16	1.8	1.1	-0.7		

Sum of b values = 0.72972

Sample Standard Deviation = 0.219754

W Statistic = 0.735104

5% Critical value of 0.887 exceeds 0.735104

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.735104

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Fluoride

Location: MW-16-01

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.0953102	0.587787	0.492476	0.5056	0.248996
2	0.182322	0.587787	0.405465	0.329	0.133398
3	0.336472	0.587787	0.251314	0.2521	0.0633564
4	0.336472	0.587787	0.251314	0.1939	0.0487299
5	0.530628	0.530628	0	0.1447	0
6	0.530628	0.530628	0	0.1005	0
7	0.530628	0.530628	0	0.0593	0
8	0.530628	0.530628	0	0.0196	0
9	0.530628	0.530628	0		
10	0.530628	0.530628	0		
11	0.530628	0.530628	0		
12	0.530628	0.530628	0		
13	0.587787	0.336472	-0.251314		
14	0.587787	0.336472	-0.251314		
15	0.587787	0.182322	-0.405465		
16	0.587787	0.0953102	-0.492476		

Sum of b values = 0.49448

Sample Standard Deviation = 0.151364

W Statistic = 0.711476

5% Critical value of 0.887 exceeds 0.711476

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.711476

Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-01

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 1.8
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/8/2016	1.1
	9/27/2016	1.4
	11/14/2016	1.4
	1/17/2017	1.2
	3/6/2017	1.7
	4/26/2017	1.8
	6/13/2017	1.8
	7/17/2017	1.7
	9/18/2017	1.8
	4/2/2018	1.8
	10/8/2018	1.7
	3/26/2019	1.7
	9/23/2019	1.7
	4/8/2020	1.7
	10/5/2020	1.7

Date	Count	Mean	Significant
4/6/2021	1	1.7	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-02

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	1.5
	9/27/2016	1.5
	11/15/2016	1.4
	1/17/2017	1.4
	3/7/2017	1.7
	4/25/2017	1.7
	6/12/2017	1.6
	7/18/2017	1.6
	9/18/2017	1.6
	4/3/2018	1.6
	10/8/2018	1.5
	3/25/2019	1.5
	9/23/2019	1.5
	4/8/2020	1.5
	10/6/2020	1.5

From 15 baseline samples
Baseline mean = 1.54
Baseline std Dev = 0.0910259

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/6/2021	1	1.5	[0, 1.70558]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-03

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	1.4
	9/27/2016	1.5
	11/15/2016	1.4
	1/17/2017	1.4
	3/7/2017	1.6
	4/25/2017	1.7
	6/12/2017	1.6
	7/18/2017	1.6
	9/19/2017	1.5
	4/3/2018	1.5
	10/8/2018	1.5
	3/25/2019	1.5
	9/23/2019	1.5
	4/8/2020	1.5
	10/6/2020	1.5

From 15 baseline samples
Baseline mean = 1.51333
Baseline std Dev = 0.0833809

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	1.5	[0, 1.66501]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-04

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	0.88
	9/26/2016	0.88
	11/15/2016	0.87
	1/17/2017	0.86
	3/7/2017	1.1
	4/25/2017	1
	6/12/2017	1
	7/17/2017	1
	9/19/2017	1
	4/3/2018	1
	10/8/2018	0.99
	3/25/2019	0.95
	9/23/2019	0.95
	4/8/2020	0.97
	10/5/2020	0.99

From 15 baseline samples
Baseline mean = 0.962667
Baseline std Dev = 0.065734

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	0.98	[0, 1.08224]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-05

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	1.3
	9/26/2016	1.4
	11/15/2016	1.3
	1/17/2017	1.4
	3/7/2017	1.6
	4/25/2017	1.6
	6/12/2017	1.5
	7/17/2017	1.6
	9/19/2017	1.5
	4/3/2018	1.5
	10/8/2018	1.4
	3/25/2019	1.5
	9/25/2019	1.4
	4/8/2020	1.4
	10/6/2020	1.4

From 15 baseline samples
Baseline mean = 1.45333
Baseline std Dev = 0.099043

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	1.4	[0, 1.6335]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-06

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	1.5
	9/27/2016	1.5
	11/15/2016	1.4
	1/17/2017	1.5
	3/6/2017	1.7
	4/25/2017	1.7
	6/13/2017	1.6
	7/17/2017	1.7
	9/18/2017	1.6
	4/2/2018	1.6
	10/8/2018	1.5
	3/25/2019	1.5
	9/23/2019	1.5
	4/8/2020	1.5
	10/6/2020	1.5

From 15 baseline samples
Baseline mean = 1.55333
Baseline std Dev = 0.0915475

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/6/2021	1	1.5	[0, 1.71986]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-07

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	1.4
	9/26/2016	1.4
	11/15/2016	1.3
	1/17/2017	1.4
	3/6/2017	1.6
	4/25/2017	1.6
	6/12/2017	1.6
	7/17/2017	1.7
	9/19/2017	1.5
	4/2/2018	1.5
	10/8/2018	1.5
	3/26/2019	1.5
	9/23/2019	1.4
	4/8/2020	1.5
	10/6/2020	1.4

From 15 baseline samples
Baseline mean = 1.48667
Baseline std Dev = 0.10601

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	1.4	[0, 1.67951]	FALSE

Skewness Coefficient

Parameter: pH, Field

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	16	7.38813	0.472923	**1.54212**
MW-16-02	16	7.07187	0.0888608	0.746227
MW-16-03	16	6.985	0.133267	-0.851435
MW-16-04	16	7.1375	0.150754	**1.59266**
MW-16-05	16	7.08687	0.186609	**1.99058**
MW-16-06	16	7.07844	0.0973947	**1.48781**
MW-16-07	16	7.04	0.145052	**1.29855**

All Locations

Obs.	Mean	Std. Dev.	Skewness
112	7.11254	0.245427	**3.39442**

Skewness Coefficient

Parameter: pH, Field

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	16	1.99806	0.0613197	**1.43643**
MW-16-02	16	1.95605	0.0125115	0.699353
MW-16-03	16	1.94359	0.019237	-0.889664
MW-16-04	16	1.96516	0.0207915	**1.56084**
MW-16-05	16	1.95793	0.025706	**1.91004**
MW-16-06	16	1.95697	0.0136269	**1.4624**
MW-16-07	16	1.95141	0.0203482	**1.26582**

All Locations

Obs.	Mean	Std. Dev.	Skewness
112	1.96131	0.0327503	**3.07801**

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-01

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	6.89	8.63	1.74	0.5056	0.879744
2	6.92	8.29	1.37	0.329	0.45073
3	7.07	7.74	0.67	0.2521	0.168907
4	7.08	7.5	0.42	0.1939	0.081438
5	7.14	7.46	0.32	0.1447	0.046304
6	7.2	7.34	0.14	0.1005	0.01407
7	7.2	7.29	0.09	0.0593	0.005337
8	7.23	7.23	0	0.0196	0
9	7.23	7.23	0		
10	7.29	7.2	-0.09		
11	7.34	7.2	-0.14		
12	7.46	7.14	-0.32		
13	7.5	7.08	-0.42		
14	7.74	7.07	-0.67		
15	8.29	6.92	-1.37		
16	8.63	6.89	-1.74		

Sum of b values = 1.64653
Sample Standard Deviation = 0.472923
W Statistic = 0.808104

5% Critical value of 0.887 exceeds 0.808104
Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.808104
Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-01

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1.93007	2.15524	0.225173	0.5056	0.113848
2	1.93442	2.11505	0.180634	0.329	0.0594287
3	1.95586	2.0464	0.0905412	0.2521	0.0228254
4	1.95727	2.0149	0.0576291	0.1939	0.0111743
5	1.96571	2.00956	0.0438426	0.1447	0.00634403
6	1.97408	1.99334	0.0192578	0.1005	0.00193541
7	1.97408	1.9865	0.0124225	0.0593	0.000736655
8	1.97824	1.97824	0	0.0196	0
9	1.97824	1.97824	0		
10	1.9865	1.97408	-0.0124225		
11	1.99334	1.97408	-0.0192578		
12	2.00956	1.96571	-0.0438426		
13	2.0149	1.95727	-0.0576291		
14	2.0464	1.95586	-0.0905412		
15	2.11505	1.93442	-0.180634		
16	2.15524	1.93007	-0.225173		

Sum of b values = 0.216292

Sample Standard Deviation = 0.0613197

W Statistic = 0.829449

5% Critical value of 0.887 exceeds 0.829449

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.829449

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-04

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	7	7.53	0.53	0.5056	0.267968
2	7.02	7.44	0.42	0.329	0.13818
3	7.02	7.22	0.2	0.2521	0.05042
4	7.02	7.19	0.17	0.1939	0.032963
5	7.04	7.15	0.11	0.1447	0.015917
6	7.04	7.13	0.09	0.1005	0.009045
7	7.08	7.11	0.03	0.0593	0.001779
8	7.1	7.11	0.01	0.0196	0.000196
9	7.11	7.1	-0.01		
10	7.11	7.08	-0.03		
11	7.13	7.04	-0.09		
12	7.15	7.04	-0.11		
13	7.19	7.02	-0.17		
14	7.22	7.02	-0.2		
15	7.44	7.02	-0.42		
16	7.53	7	-0.53		

Sum of b values = 0.516468

Sample Standard Deviation = 0.150754

W Statistic = 0.782456

5% Critical value of 0.887 exceeds 0.782456

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.782456

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-04

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1.94591	2.0189	0.0729849	0.5056	0.0369012
2	1.94876	2.00687	0.0581076	0.329	0.0191174
3	1.94876	1.97685	0.0280917	0.2521	0.00708193
4	1.94876	1.97269	0.023928	0.1939	0.00463963
5	1.95161	1.96711	0.0155042	0.1447	0.00224346
6	1.95161	1.96431	0.0127031	0.1005	0.00127666
7	1.95727	1.9615	0.00422834	0.0593	0.00025074
8	1.96009	1.9615	0.00140746	0.0196	2.75862e-005
9	1.9615	1.96009	-0.00140746		
10	1.9615	1.95727	-0.00422834		
11	1.96431	1.95161	-0.0127031		
12	1.96711	1.95161	-0.0155042		
13	1.97269	1.94876	-0.023928		
14	1.97685	1.94876	-0.0280917		
15	2.00687	1.94876	-0.0581076		
16	2.0189	1.94591	-0.0729849		

Sum of b values = 0.0715386

Sample Standard Deviation = 0.0207915

W Statistic = 0.789255

5% Critical value of 0.887 exceeds 0.789255

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.789255

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-05

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	6.89	7.67	0.78	0.5056	0.394368
2	6.92	7.3	0.38	0.329	0.12502
3	6.93	7.15	0.22	0.2521	0.055462
4	6.95	7.12	0.17	0.1939	0.032963
5	6.99	7.12	0.13	0.1447	0.018811
6	7	7.1	0.1	0.1005	0.01005
7	7.04	7.08	0.04	0.0593	0.002372
8	7.05	7.08	0.03	0.0196	0.000588
9	7.08	7.05	-0.03		
10	7.08	7.04	-0.04		
11	7.1	7	-0.1		
12	7.12	6.99	-0.13		
13	7.12	6.95	-0.17		
14	7.15	6.93	-0.22		
15	7.3	6.92	-0.38		
16	7.67	6.89	-0.78		

Sum of b values = 0.639634

Sample Standard Deviation = 0.186609

W Statistic = 0.783261

5% Critical value of 0.887 exceeds 0.783261

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.783261

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-05

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1.93007	2.03732	0.107246	0.5056	0.0542233
2	1.93442	1.98787	0.0534586	0.329	0.0175879
3	1.93586	1.96711	0.0312525	0.2521	0.00787877
4	1.93874	1.96291	0.0241661	0.1939	0.0046858
5	1.94448	1.96291	0.0184272	0.1447	0.00266641
6	1.94591	1.96009	0.0141846	0.1005	0.00142556
7	1.95161	1.95727	0.00566574	0.0593	0.000335978
8	1.95303	1.95727	0.00424629	0.0196	8.32273e-005
9	1.95727	1.95303	-0.00424629		
10	1.95727	1.95161	-0.00566574		
11	1.96009	1.94591	-0.0141846		
12	1.96291	1.94448	-0.0184272		
13	1.96291	1.93874	-0.0241661		
14	1.96711	1.93586	-0.0312525		
15	1.98787	1.93442	-0.0534586		
16	2.03732	1.93007	-0.107246		

Sum of b values = 0.088887

Sample Standard Deviation = 0.025706

W Statistic = 0.797103

5% Critical value of 0.887 exceeds 0.797103

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.797103

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-06

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	6.965	7.33	0.365	0.5056	0.184544
2	6.98	7.27	0.29	0.329	0.09541
3	7.01	7.14	0.13	0.2521	0.032773
4	7.01	7.11	0.1	0.1939	0.01939
5	7.03	7.07	0.04	0.1447	0.005788
6	7.05	7.07	0.02	0.1005	0.00201
7	7.05	7.06	0.01	0.0593	0.000593
8	7.05	7.06	0.01	0.0196	0.000196
9	7.06	7.05	-0.01		
10	7.06	7.05	-0.01		
11	7.07	7.05	-0.02		
12	7.07	7.03	-0.04		
13	7.11	7.01	-0.1		
14	7.14	7.01	-0.13		
15	7.27	6.98	-0.29		
16	7.33	6.965	-0.365		

Sum of b values = 0.340704

Sample Standard Deviation = 0.0973947

W Statistic = 0.815817

5% Critical value of 0.887 exceeds 0.815817

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.815817

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-06

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1.9409	1.99198	0.0510779	0.5056	0.025825
2	1.94305	1.98376	0.0407074	0.329	0.0133927
3	1.94734	1.96571	0.0183751	0.2521	0.00463236
4	1.94734	1.9615	0.0141645	0.1939	0.0027465
5	1.95019	1.95586	0.00567377	0.1447	0.000820995
6	1.95303	1.95586	0.00283286	0.1005	0.000284703
7	1.95303	1.95445	0.00141743	0.0593	8.40539e-005
8	1.95303	1.95445	0.00141743	0.0196	2.77817e-005
9	1.95445	1.95303	-0.00141743		
10	1.95445	1.95303	-0.00141743		
11	1.95586	1.95303	-0.00283286		
12	1.95586	1.95019	-0.00567377		
13	1.9615	1.94734	-0.0141645		
14	1.96571	1.94734	-0.0183751		
15	1.98376	1.94305	-0.0407074		
16	1.99198	1.9409	-0.0510779		

Sum of b values = 0.0478141

Sample Standard Deviation = 0.0136269

W Statistic = 0.820775

5% Critical value of 0.887 exceeds 0.820775

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.820775

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-07

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	6.89	7.4	0.51	0.5056	0.257856
2	6.9	7.31	0.41	0.329	0.13489
3	6.92	7.15	0.23	0.2521	0.057983
4	6.95	7.11	0.16	0.1939	0.031024
5	6.96	7.1	0.14	0.1447	0.020258
6	6.96	7.05	0.09	0.1005	0.009045
7	6.96	7.03	0.07	0.0593	0.004151
8	6.97	6.98	0.01	0.0196	0.000196
9	6.98	6.97	-0.01		
10	7.03	6.96	-0.07		
11	7.05	6.96	-0.09		
12	7.1	6.96	-0.14		
13	7.11	6.95	-0.16		
14	7.15	6.92	-0.23		
15	7.31	6.9	-0.41		
16	7.4	6.89	-0.51		

Sum of b values = 0.515403

Sample Standard Deviation = 0.145052

W Statistic = 0.841699

5% Critical value of 0.887 exceeds 0.841699

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.841699

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-07

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1.93007	2.00148	0.0714089	0.5056	0.0361043
2	1.93152	1.98924	0.0577219	0.329	0.0189905
3	1.93442	1.96711	0.0326966	0.2521	0.00824281
4	1.93874	1.9615	0.0227606	0.1939	0.00441328
5	1.94018	1.96009	0.0199153	0.1447	0.00288175
6	1.94018	1.95303	0.0128481	0.1005	0.00129124
7	1.94018	1.95019	0.0100072	0.0593	0.000593429
8	1.94162	1.94305	0.00143369	0.0196	2.81004e-005
9	1.94305	1.94162	-0.00143369		
10	1.95019	1.94018	-0.0100072		
11	1.95303	1.94018	-0.0128481		
12	1.96009	1.94018	-0.0199153		
13	1.9615	1.93874	-0.0227606		
14	1.96711	1.93442	-0.0326966		
15	1.98924	1.93152	-0.0577219		
16	2.00148	1.93007	-0.0714089		

Sum of b values = 0.0725454
Sample Standard Deviation = 0.0203482
W Statistic = 0.847378

5% Critical value of 0.887 exceeds 0.847378
Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 is less than 0.847378
Data is normally distributed at 99% level of significance

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-01

Parameter: pH, Field

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 8.63
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/8/2016	8.63
	9/27/2016	8.29
	11/14/2016	7.74
	1/17/2017	7.46
	3/6/2017	7.34
	4/26/2017	7.23
	6/13/2017	7.2
	7/17/2017	7.23
	9/18/2017	6.92
	4/2/2018	7.14
	10/8/2018	7.07
	3/26/2019	7.08
	9/23/2019	7.2
	4/8/2020	7.5
	10/5/2020	7.29

Date	Count	Mean	Significant
4/6/2021	1	6.89	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-02

Parameter: pH, Field

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% Two-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	7.07
	9/27/2016	7.3
	11/15/2016	7.06
	1/17/2017	7.09
	3/7/2017	7.15
	4/25/2017	6.99
	6/12/2017	7.04
	7/18/2017	7.02
	9/18/2017	7.01
	4/3/2018	6.99
	10/8/2018	7.08
	3/25/2019	7.06
	9/23/2019	7.16
	4/8/2020	7.14
	10/6/2020	7.08

From 15 baseline samples
Baseline mean = 7.08267
Baseline std Dev = 0.0803978

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1)/2 = 97.5 %
t is Percentile of Student's T-Test (0.95/1/2) = 0.975
Degrees of Freedom = 15 (background observations) - 1
t(0.975, 15) = 2.14479

Date	Samples	Mean	Interval	Significant
4/6/2021	1	6.91	[6.9, 7.26]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-03

Parameter: pH, Field

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% Two-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	6.93
	9/27/2016	7.17
	11/15/2016	7.04
	1/17/2017	6.72
	3/7/2017	7.13
	4/25/2017	6.98
	6/12/2017	7.02
	7/18/2017	6.97
	9/19/2017	6.89
	4/3/2018	6.97
	10/8/2018	7.05
	3/25/2019	6.7
	9/23/2019	7.12
	4/8/2020	7.08
	10/6/2020	7.07

From 15 baseline samples
Baseline mean = 6.98933
Baseline std Dev = 0.136772

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1)/2 = 97.5 %
t is Percentile of Student's T-Test (0.95/1/2) = 0.975
Degrees of Freedom = 15 (background observations) - 1
t(0.975, 15) = 2.14479

Date	Samples	Mean	Interval	Significant
4/5/2021	1	6.92	[6.69, 7.29]	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-04

Parameter: pH, Field

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 7.53
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/9/2016	7.02
	9/26/2016	7.53
	11/15/2016	7.11
	1/17/2017	7.02
	3/7/2017	7.19
	4/25/2017	7.04
	6/12/2017	7.1
	7/17/2017	7.22
	9/19/2017	7.02
	4/3/2018	7
	10/8/2018	7.13
	3/25/2019	7.04
	9/23/2019	7.15
	4/8/2020	7.08
	10/5/2020	7.44

Date	Count	Mean	Significant
4/5/2021	1	7.11	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-05

Parameter: pH, Field

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 7.67
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/8/2016	7.3
	9/26/2016	7.67
	11/15/2016	7.12
	1/17/2017	6.95
	3/7/2017	7.15
	4/25/2017	7
	6/12/2017	7.05
	7/17/2017	7.12
	9/19/2017	6.89
	4/3/2018	6.99
	10/8/2018	7.08
	3/25/2019	6.93
	9/25/2019	7.04
	4/8/2020	7.08
	10/6/2020	7.1

Date	Count	Mean	Significant
4/5/2021	1	6.92	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-06

Parameter: pH, Field

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 7.33
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/9/2016	7.06
	9/27/2016	7.33
	11/15/2016	7.07
	1/17/2017	7.01
	3/6/2017	7.05
	4/25/2017	7.01
	6/13/2017	7.05
	7/17/2017	7.11
	9/18/2017 ~	6.965
	4/2/2018	7.06
	10/8/2018	6.98
	3/25/2019	7.03
	9/23/2019	7.14
	4/8/2020 ~	7.27
	10/6/2020	7.05

Date	Count	Mean	Significant
4/6/2021	1	7.07	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-07

Parameter: pH, Field

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 7.4
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/8/2016	6.96
	9/26/2016	7.4
	11/15/2016	7.05
	1/17/2017	6.92
	3/6/2017	6.96
	4/25/2017	6.97
	6/12/2017	6.95
	7/17/2017	6.96
	9/19/2017 ~	6.89
	4/2/2018	6.98
	10/8/2018	7.03
	3/26/2019	7.11
	9/23/2019	7.15
	4/8/2020	7.31
	10/6/2020	7.1

Date	Count	Mean	Significant
4/5/2021	1	6.9	FALSE

Skewness Coefficient

Parameter: Sulfate

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	16	1437.5	61.9139	-0.380765
MW-16-02	16	1525	77.4597	-0.444444
MW-16-03	16	1562.5	61.9139	0.380765
MW-16-04	16	1381.25	65.5108	0.177933
MW-16-05	16	1450	73.0297	0
MW-16-06	16	1484.38	67.6233	0.0893666
MW-16-07	16	1450	63.2456	0.816497

All Locations

Obs.	Mean	Std. Dev.	Skewness
112	1470.09	86.0703	0.0980535

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-01

Parameter: Sulfate

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	1400
	9/27/2016	1500
	11/14/2016	1500
	1/17/2017	1400
	3/6/2017	1300
	4/26/2017	1400
	6/13/2017	1400
	7/17/2017	1400
	9/18/2017	1500
	4/2/2018	1500
	10/8/2018	1500
	3/26/2019	1400
	9/23/2019	1500
	4/8/2020	1400
	10/5/2020 ~	1500

From 15 baseline samples
Baseline mean = 1440
Baseline std Dev = 63.2456

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/6/2021	1	1400	[0, 1555.05]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-02

Parameter: Sulfate

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	1600
	9/27/2016	1600
	11/15/2016	1600
	1/17/2017	1500
	3/7/2017	1400
	4/25/2017	1600
	6/12/2017	1500
	7/18/2017	1500
	9/18/2017	1500
	4/3/2018	1500
	10/8/2018	1600
	3/25/2019	1500
	9/23/2019	1600
	4/8/2020	1400
	10/6/2020	1600

From 15 baseline samples
Baseline mean = 1533.33
Baseline std Dev = 72.3747

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/6/2021	1	1400	[0, 1664.99]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-03

Parameter: Sulfate

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	1600
	9/27/2016	1600
	11/15/2016	1600
	1/17/2017	1600
	3/7/2017	1500
	4/25/2017	1500
	6/12/2017	1500
	7/18/2017	1500
	9/19/2017	1500
	4/3/2018	1600
	10/8/2018	1600
	3/25/2019	1600
	9/23/2019	1600
	4/8/2020	1500
	10/6/2020	1700

From 15 baseline samples
Baseline mean = 1566.67
Baseline std Dev = 61.7213

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	1500	[0, 1678.94]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-04

Parameter: Sulfate

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	1400
	9/26/2016	1400
	11/15/2016	1500
	1/17/2017	1400
	3/7/2017	1300
	4/25/2017	1300
	6/12/2017	1400
	7/17/2017	1400
	9/19/2017	1300
	4/3/2018	1400
	10/8/2018	1500
	3/25/2019	1400
	9/23/2019	1400
	4/8/2020	1300
	10/5/2020	1400

From 15 baseline samples
Baseline mean = 1386.67
Baseline std Dev = 63.994

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	1300	[0, 1503.08]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-05

Parameter: Sulfate

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	1500
	9/26/2016	1500
	11/15/2016	1500
	1/17/2017	1400
	3/7/2017	1400
	4/25/2017	1400
	6/12/2017	1500
	7/17/2017	1500
	9/19/2017	1400
	4/3/2018	1400
	10/8/2018	1600
	3/25/2019	1500
	9/25/2019	1400
	4/8/2020	1400
	10/6/2020	1500

From 15 baseline samples
Baseline mean = 1460
Baseline std Dev = 63.2456

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	1300	[0, 1575.05]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-06

Parameter: Sulfate

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	1500
	9/27/2016	1500
	11/15/2016	1600
	1/17/2017	1500
	3/6/2017	1400
	4/25/2017	1400
	6/13/2017	1400
	7/17/2017	1500
	9/18/2017	1500
	4/2/2018	1500
	10/8/2018	1600
	3/25/2019	1500
	9/23/2019	1500
	4/8/2020	1400
	10/6/2020 ~	1550

From 15 baseline samples
Baseline mean = 1490
Baseline std Dev = 66.0087

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/6/2021	1	1400	[0, 1610.07]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-07

Parameter: Sulfate

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	1500
	9/26/2016	1500
	11/15/2016	1500
	1/17/2017	1400
	3/6/2017	1400
	4/25/2017	1400
	6/12/2017	1400
	7/17/2017	1500
	9/19/2017	1400
	4/2/2018	1400
	10/8/2018	1600
	3/26/2019	1400
	9/23/2019	1500
	4/8/2020	1400
	10/6/2020	1500

From 15 baseline samples
Baseline mean = 1453.33
Baseline std Dev = 63.994

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	1400	[0, 1569.74]	FALSE

Skewness Coefficient

Parameter: Total Dissolved Solids

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	16	2093.75	123.659	**-2.06437**
MW-16-02	16	2200	63.2456	0
MW-16-03	16	2259.38	75.76	-0.207363
MW-16-04	16	2056.25	131.498	-0.957395
MW-16-05	16	2093.75	77.1902	0.101753
MW-16-06	16	2171.88	93.039	0.229678
MW-16-07	16	2062.5	80.6226	-0.812958

All Locations

Obs.	Mean	Std. Dev.	Skewness
112	2133.93	117.254	-0.737954

Skewness Coefficient

Parameter: Total Dissolved Solids

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	16	7.64492	0.0631766	**-2.26803**
MW-16-02	16	7.69582	0.0287724	-0.069581
MW-16-03	16	7.72231	0.0336821	-0.283093
MW-16-04	16	7.62663	0.0663914	**-1.24163**
MW-16-05	16	7.64608	0.0368325	0.0599995
MW-16-06	16	7.68249	0.0427067	0.141807
MW-16-07	16	7.63094	0.0397604	-0.890922

All Locations

Obs.	Mean	Std. Dev.	Skewness
112	7.66417	0.0564504	**-1.05579**

Shapiro-Wilks Test of Normality

Parameter: Total Dissolved Solids

Location: MW-16-01

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1700	2200	500	0.5056	252.8
2	2000	2200	200	0.329	65.8
3	2000	2200	200	0.2521	50.42
4	2100	2200	100	0.1939	19.39
5	2100	2200	100	0.1447	14.47
6	2100	2100	0	0.1005	0
7	2100	2100	0	0.0593	0
8	2100	2100	0	0.0196	0
9	2100	2100	0		
10	2100	2100	0		
11	2100	2100	0		
12	2200	2100	-100		
13	2200	2100	-100		
14	2200	2000	-200		
15	2200	2000	-200		
16	2200	1700	-500		

Sum of b values = 402.88

Sample Standard Deviation = 123.659

W Statistic = 0.707629

5% Critical value of 0.887 exceeds 0.707629

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.707629

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Total Dissolved Solids

Location: MW-16-01

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	7.43838	7.69621	0.257829	0.5056	0.130358
2	7.6009	7.69621	0.0953102	0.329	0.031357
3	7.6009	7.69621	0.0953102	0.2521	0.0240277
4	7.64969	7.69621	0.04652	0.1939	0.00902023
5	7.64969	7.69621	0.04652	0.1447	0.00673145
6	7.64969	7.64969	0	0.1005	0
7	7.64969	7.64969	0	0.0593	0
8	7.64969	7.64969	0	0.0196	0
9	7.64969	7.64969	0		
10	7.64969	7.64969	0		
11	7.64969	7.64969	0		
12	7.69621	7.64969	-0.04652		
13	7.69621	7.64969	-0.04652		
14	7.69621	7.6009	-0.0953102		
15	7.69621	7.6009	-0.0953102		
16	7.69621	7.43838	-0.257829		

Sum of b values = 0.201495

Sample Standard Deviation = 0.0631766

W Statistic = 0.678147

5% Critical value of 0.887 exceeds 0.678147

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.678147

Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-01

Parameter: Total Dissolved Solids

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 2200
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/8/2016	2100
	9/27/2016	2000
	11/14/2016	2000
	1/17/2017	2200
	3/6/2017	2100
	4/26/2017	2100
	6/13/2017	2100
	7/17/2017	2100
	9/18/2017	2200
	4/2/2018	2200
	10/8/2018	2100
	3/26/2019	2200
	9/23/2019	2200
	4/8/2020	1700
	10/5/2020	2100

Date	Count	Mean	Significant
4/6/2021	1	2100	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-02

Parameter: Total Dissolved Solids

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	2200
	9/27/2016	2200
	11/15/2016	2200
	1/17/2017	2300
	3/7/2017	2200
	4/25/2017	2200
	6/12/2017	2200
	7/18/2017	2300
	9/18/2017	2300
	4/3/2018	2100
	10/8/2018	2200
	3/25/2019	2200
	9/23/2019	2200
	4/8/2020	2200
	10/6/2020	2100

From 15 baseline samples
Baseline mean = 2206.67
Baseline std Dev = 59.3617

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/6/2021	1	2100	[0, 2314.65]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-03

Parameter: Total Dissolved Solids

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	2300
	9/27/2016	2200
	11/15/2016	2300
	1/17/2017	2300
	3/7/2017	2200
	4/25/2017	2300
	6/12/2017	2300
	7/18/2017	2300
	9/19/2017	2300
	4/3/2018	2200
	10/8/2018	2200
	3/25/2019	2200
	9/23/2019 ~	2400
	4/8/2020	2200
	10/6/2020	2100

From 15 baseline samples
Baseline mean = 2253.33
Baseline std Dev = 74.3223

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	2350	[0, 2388.53]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-04

Parameter: Total Dissolved Solids

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	2100
	9/26/2016	2100
	11/15/2016	1700
	1/17/2017	2100
	3/7/2017	2200
	4/25/2017	2100
	6/12/2017	2100
	7/17/2017	2100
	9/19/2017	2100
	4/3/2018	2000
	10/8/2018	2000
	3/25/2019	2100
	9/23/2019 ~	2300
	4/8/2020	2000
	10/5/2020	1900

From 15 baseline samples
Baseline mean = 2060
Baseline std Dev = 135.225

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	2000	[0, 2305.98]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-05

Parameter: Total Dissolved Solids

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	2100
	9/26/2016	2000
	11/15/2016	2100
	1/17/2017	2100
	3/7/2017	2200
	4/25/2017	2100
	6/12/2017	2200
	7/17/2017	2100
	9/19/2017	2100
	4/3/2018	2000
	10/8/2018	2000
	3/25/2019	2200
	9/25/2019	2100
	4/8/2020	2000
	10/6/2020	2000

From 15 baseline samples
Baseline mean = 2086.67
Baseline std Dev = 74.3223

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	2200	[0, 2221.86]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-06

Parameter: Total Dissolved Solids

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/9/2016	2200
	9/27/2016	2100
	11/15/2016	2200
	1/17/2017	2200
	3/6/2017	2100
	4/25/2017	2100
	6/13/2017	2200
	7/17/2017	2200
	9/18/2017	2300
	4/2/2018 ~	2350
	10/8/2018	2100
	3/25/2019	2100
	9/23/2019	2300
	4/8/2020	2100
	10/6/2020	2000

From 15 baseline samples
Baseline mean = 2170
Baseline std Dev = 95.9911

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/6/2021	1	2200	[0, 2344.61]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-07

Parameter: Total Dissolved Solids

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/8/2016	2100
	9/26/2016	2000
	11/15/2016	2100
	1/17/2017	2100
	3/6/2017	2100
	4/25/2017	2100
	6/12/2017	2200
	7/17/2017	2100
	9/19/2017	2100
	4/2/2018	2000
	10/8/2018	2100
	3/26/2019	2100
	9/23/2019	2100
	4/8/2020	1900
	10/6/2020	1900

From 15 baseline samples
Baseline mean = 2066.67
Baseline std Dev = 81.6497

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/5/2021	1	2000	[0, 2215.19]	FALSE