

2019 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CCR LANDFILL MONTROSE GENERATING STATION CLINTON, MISSOURI

Presented To:
Energymetro, Inc. (f/k/a Kansas City Power & Light Co.)

SCS ENGINEERS

27213168.19 | January 2020, Revised January 20, 2022

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CERTIFICATIONS

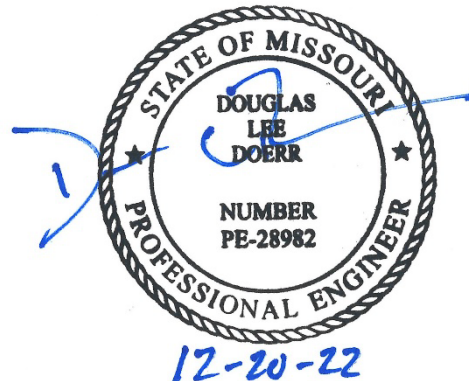
I, John R. Rockhold, being a qualified groundwater scientist and Registered Geologist in the State of Missouri, do hereby certify that the 2019 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Montrose Generating Station was prepared by me or under my direct supervision and fulfills the requirements of 40 CFR 257.90(e).



John R. Rockhold, R.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Missouri, do hereby certify that the 2019 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Montrose Generating Station was prepared by me or under my direct supervision and fulfills the requirements of 40 CFR 257.90(e).



Douglas L. Doerr, P.E.

SCS Engineers

2019 Groundwater Monitoring and Corrective Action Report

Revision Number	Revision Date	Revision Section	Summary of Revisions
0	January 2020	NA	Original Report.
1	December 20, 2022	Addendum 1	Added Addendum 1

Table of Contents

Section	Page
CERTIFICATIONS.....	i
1 INTRODUCTION.....	1
2 § 257.90(e) ANNUAL REPORT REQUIREMENTS.....	1
2.1 § 257.90(e)(1) Site Map.....	1
2.2 § 257.90(e)(2) Monitoring System Changes.....	1
2.3 § 257.90(e)(3) Summary of Sampling Events.....	2
2.4 § 257.90(e)(4) Monitoring Transition Narrative.....	2
2.5 § 257.90(e)(5) Other Requirements.....	2
2.5.1 § 257.90(e) Program Status	2
2.5.2 § 257.94(d)(3) Demonstration for Alternative Detection Monitoring Frequency... 3	3
2.5.3 § 257.94(e)(2) Detection Monitoring Alternate Source Demonstration.....	3
2.5.4 § 257.95(c)(3) Demonstration for Alternative Assessment Monitoring Frequency	4
2.5.5 § 257.95(d)(3) Assessment Monitoring Concentrations and Groundwater Protection Standards	4
2.5.6 § 257.95(g)(3)(ii) Assessment Monitoring Alternate Source Demonstration	4
2.5.7 § 257.96(a) Demonstration for Additional Time for Assessment of Corrective Measures	5
3 GENERAL COMMENTS.....	5

Appendices

Appendix A Figures

Figure 1: Site Map

Appendix B Tables

Table 1: Appendix III Detection Monitoring Results

Table 2: Detection Monitoring Field Measurements

Appendix C Alternative Source Demonstrations

C.1 CCR Landfill Groundwater Monitoring Alternative Source Demonstration Report November 2018 Groundwater Monitoring Event, CCR Landfill, Montrose Generating Station (June 2019).

C.2 CCR Landfill Groundwater Monitoring Alternative Source Demonstration Report May 2019 Groundwater Monitoring Event, CCR Landfill, Montrose Generating Station (December 2019).

Addendum 1 2019 Annual Groundwater Monitoring and Corrective Action Report Addendum 1

1 INTRODUCTION

This 2019 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the “Coal Combustion Residuals (CCR) Final Rule” (Rule) published by the United States Environmental Protection Agency (USEPA) in the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, dated April 17, 2015 (USEPA, 2015). Specifically, this report was prepared for Evergy Metro, Inc. (f/k/a Kansas City Power & Light Company) to fulfill the requirements of 40 CFR 257.90 (e). The applicable sections of the Rule are provided below in *italics*, followed by applicable information relative to the 2019 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Montrose Generating Station.

2 § 257.90(E) ANNUAL REPORT REQUIREMENTS

Annual groundwater monitoring and corrective action report. For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility’s operating record as required by § 257.105(h)(1). At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

2.1 § 257.90(E)(1) SITE MAP

A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;

A site map with an aerial image showing the CCR Landfill and all background (or upgradient) and downgradient monitoring wells with identification numbers for the CCR Landfill groundwater monitoring program is provided as **Figure 1** in **Appendix A**.

2.2 § 257.90(E)(2) MONITORING SYSTEM CHANGES

Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;

No new monitoring wells were installed and no wells were decommissioned as part of the CCR groundwater monitoring program for the CCR Landfill in 2019.

2.3 § 257.90(E)(3) SUMMARY OF SAMPLING EVENTS

In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;

Only detection monitoring was conducted during the reporting period (2019). Samples collected in 2019 were collected and analyzed for Appendix III detection monitoring constituents as indicated in **Appendix B, Table 1** (Appendix III Detection Monitoring Results, and **Table 2** (Detection Monitoring Field Measurements). The dates of sample collection, the monitoring program requiring the sample, and the results of the analyses are also provided in these tables. These tables include Fall 2018 semiannual detection monitoring event verification data taken in 2019; Spring 2019 semiannual detection monitoring data; and the initial Fall 2019 semiannual detection monitoring data.

2.4 § 257.90(E)(4) MONITORING TRANSITION NARRATIVE

A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels); and

There was no transition between monitoring programs in 2019. Only detection monitoring was conducted in 2019.

2.5 § 257.90(e)(5) OTHER REQUIREMENTS

Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.

A summary of potentially required information and the corresponding section of the Rule is provided in the following sections. In addition, the information, if applicable, is provided.

2.5.1 § 257.90(e) Program Status

Status of Groundwater Monitoring and Corrective Action Program.

The groundwater monitoring and corrective action program is in detection monitoring.

Summary of Key Actions Completed.

- a. completion of the Fall 2018 verification sampling and analyses per the certified statistical method,
- b. completion of the statistical evaluation of the Fall 2018 semiannual detection monitoring sampling and analysis event per the certified statistical method,
- c. completion of the 2018 Annual Groundwater Monitoring and Corrective Action Report,
- d. completion of a successful alternative source demonstration for the Fall 2018 semiannual detection monitoring sampling and analysis event,

- e. completion of the Spring 2019 semiannual detection monitoring sampling and analysis event, and subsequent verification sampling per the certified statistical method,
- f. completion of the statistical evaluation of the Spring 2019 semiannual detection monitoring sampling and analysis event per the certified statistical method,
- g. completion of a successful alternative source demonstration for the Spring 2019 semiannual detection monitoring sampling and analysis event, and
- h. initiation of the Fall 2019 semiannual detection monitoring sampling and analysis event.

Description of Any Problems Encountered.

No noteworthy problems were encountered.

Discussion of Actions to Resolve the Problems.

Not applicable because no noteworthy problems were encountered.

Projection of Key Activities for the Upcoming Year (2020).

Completion of verification sampling and data analysis, and the statistical evaluation of Fall 2019 detection monitoring sampling and analysis event. Semiannual Spring and Fall 2020 groundwater sampling and analysis. Completion of the statistical evaluation of the Spring 2020 detection monitoring sampling and analysis event, and, if required, alternative source demonstration(s).

2.5.2 § 257.94(d)(3) Demonstration for Alternative Detection Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable because no alternative monitoring frequency for detection monitoring and certification was pursued.

2.5.3 § 257.94(e)(2) Detection Monitoring Alternate Source Demonstration

Demonstration that a source other than the CCR unit caused the statistically significant increase (SSI) over background levels for a constituent or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. In addition, certification of the demonstration is to be included in the annual report.

The following demonstration reports are included as **Appendix C**:

2019 Groundwater Monitoring and Corrective Action Report

- C.1 CCR Landfill Groundwater Monitoring Alternative Source Demonstration Report November 2018 Groundwater Monitoring Event, CCR Landfill, Montrose Generating Station (June 2019).
- C.2 CCR Landfill Groundwater Monitoring Alternative Source Demonstration Report May 2019 Groundwater Monitoring Event, CCR Landfill, Montrose Generating Station (December 2019).

2.5.4 § 257.95(c)(3) Demonstration for Alternative Assessment Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer or the approval from the Participating State Director or the approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable because there was no assessment monitoring conducted.

2.5.5 § 257.95(d)(3) Assessment Monitoring Concentrations and Groundwater Protection Standards

Include the concentrations of Appendix III and detected Appendix IV constituents from the assessment monitoring, the established background concentrations, and the established groundwater protection standards.

Not applicable because there was no assessment monitoring conducted.

2.5.6 § 257.95(g)(3)(ii) Assessment Monitoring Alternate Source Demonstration

Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the constituents in appendices III and IV to this part are at or below background as specified in paragraph (e) of this section. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

Not applicable because there was no assessment monitoring conducted.

2.5.7 § 257.96(a) Demonstration for Additional Time for Assessment of Corrective Measures

Within 90 days of finding that any constituent listed in appendix IV to this part has been detected at a statistically significant level exceeding the groundwater protection standard defined under § 257.95(h), or immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions. The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

Not applicable because there was no assessment monitoring conducted.

3 GENERAL COMMENTS

This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. The information contained in this report is a reflection of the conditions encountered at the Montrose Generating Station at the time of fieldwork. This report includes a review and compilation of the required information and does not reflect any variations of the subsurface, which may occur between sampling locations. Actual subsurface conditions may vary and the extent of such variations may not become evident without further investigation.

Conclusions drawn by others from the result of this work should recognize the limitation of the methods used. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of Evergy Metro, Inc. for specific application to the Montrose Generating Station CCR Landfill. No warranties, express or implied, are intended or made.

APPENDIX A

FIGURES

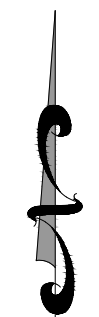
Figure 1: Site Map

N:\KCP\PROJECTS\GROUNDWATER\DWG\MONTROSE\2018\ANNUAL CCR REPORTING\FIGURE 1_MONT LF.DWG



- LEGEND:**
- PERMITTED SOLID WASTE FACILITY BOUNDARY (APPROXIMATE)
 - CCR LANDFILL UNIT BOUNDARY (APPROXIMATE)
 - ▲ MW-602 CCR GROUNDWATER MONITORING SYSTEM WELLS
 - ASH IMPOUNDMENT UNIT BOUNDARY (APPROXIMATE)

- NOTES:**
1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD 83)
 2. VERTICAL DATUM: NAVD 88
 3. GOOGLE EARTH IMAGE DATED 10/20/2014. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE.
 4. BOUNDARY AND MONITOR WELL LOCATIONS PROVIDED BY AECOM



	REV.	DATE	CK BY	BY
	1	-	-	-
SHEET TITLE				
SITE MAP CCR LANDFILL CCR GROUNDWATER MONITORING SYSTEM				
PROJECT TITLE				
2019 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT				
CLIENT				
EVERGY METRO, INC MONTRÖSE GENERATING STATION MONTRÖSE, MISSOURI				
SCS ENGINEERS ENVIRONMENTAL CONSULTANTS AND CONTRACTORS 8575 W. 110th St. Ste. 100 Overland Park, Kansas 66210 PH. (813) 881-0030 FAX. (813) 881-0012				
PROJ. NO. 27213168.19	DRAWN BY TCW	CHECK BY JRR	DATE 1/07/20	SCALE AS SHOWN
FIGURE NO.				
1				

APPENDIX B

TABLES

Table 1: Appendix III Detection Monitoring Results

Table 2: Detection Monitoring Field Measurements

Table 1
CCR Landfill
Appendix III Detection Monitoring Results
Energy Montrose Generating Station

Well Number	Sample Date	Appendix III Constituents						
		Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
MW-506	5/21/2019	<0.200	357	76.0	0.108	5.49	2130	2460
MW-506	11/5/2019	<0.200	341	74.5	<0.100	5.44	1760	2280
MW-601	5/21/2019	<0.200	472	55.5	0.487	5.34	3230	4410
MW-601	7/15/2019	---	---	*56.5	---	**5.96	---	---
MW-601	8/19/2019	---	---	*54.5	---	**5.41	---	---
MW-601	11/5/2019	<0.200	457	52.8	0.402	5.20	2950	3880
MW-602	1/10/2019	---	---	---	---	**5.90	---	*1870
MW-602	5/21/2019	4.48	342	4.11	0.132	5.77	1260	1870
MW-602	11/5/2019	4.16	325	3.69	0.140	6.00	1110	1880
MW-603	5/21/2019	7.35	429	8.24	0.365	4.32	2480	2990
MW-603	7/15/2019	*6.49	---	*8.75	---	**5.13	---	---
MW-603	8/19/2019	---	---	*6.54	---	**4.46	---	---
MW-603	11/5/2019	5.96	410	6.66	0.436	4.56	2010	2530
MW-604	5/21/2019	4.86	476	15.5	0.519	5.82	2090	3270
MW-604	7/15/2019	---	---	---	---	**6.20	---	*2680
MW-604	11/5/2019	4.30	407	12.5	0.428	5.89	1650	2340
MW-605	1/10/2019	---	---	*50.9	---	**5.79	---	---
MW-605	3/13/2019	---	---	*52.4	---	**5.73	---	---
MW-605	5/21/2019	1.65	416	55.4	0.222	5.64	1970	2810
MW-605	7/15/2019	---	---	*57.8	---	**5.85	---	---
MW-605	8/19/2019	---	---	*57.9	---	**5.42	---	---
MW-605	11/5/2019	1.50	399	59.1	0.195	5.59	1730	2380

* Verification Sample obtained per certified statistical method and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009.

**Extra Sample for Quality Control Validation or per Standard Sampling Procedure

mg/L - milligrams per liter

pCi/L - picocuries per liter

S.U. - Standard Units

--- Not Sampled

Table 2
CCR Landfill
Detection Monitoring Field Measurements
Evergy Montrose Generating Station

Well Number	Sample Date	pH (S.U.)	Specific Conductivity (µS)	Temperature (°C)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Water Level (ft btoc)	Groundwater Elevation (ft NGVD)
MW-506	5/21/2019	5.49	3230	11.15	9.5	131	0.68	3.02	758.55
MW-506	11/5/2019	5.44	3050	16.59	23.3	179	0.79	3.21	758.36
MW-601	5/21/2019	5.34	4960	11.62	21.0	93	0.00	8.49	756.62
MW-601	7/15/2019	**5.96	4780	15.54	23.6	154	6.63	8.78	756.33
MW-601	8/19/2019	**5.41	4510	19.20	21.5	239	0.12	9.96	755.15
MW-601	11/5/2019	5.20	4700	16.65	18.5	167	0.55	9.40	755.71
MW-602	1/10/2019	**5.90	2350	13.60	6.8	-59	7.41	3.98	751.88
MW-602	5/21/2019	5.77	2230	14.30	9.9	25	5.85	3.81	752.05
MW-602	11/5/2019	6.00	2060	15.48	0.0	85	1.01	3.70	752.16
MW-603	5/21/2019	4.32	3580	14.51	5.4	181	0.00	11.55	752.09
MW-603	7/15/2019	**5.13	3290	16.50	0.0	151	1.23	12.55	751.09
MW-603	8/19/2019	**4.46	3080	20.85	0.0	389	0.00	12.37	751.27
MW-603	11/5/2019	4.56	3200	15.31	0.0	137	0.89	11.32	752.32
MW-604	5/21/2019	5.82	3300	14.23	0.0	214	0.71	11.38	752.01
MW-604	7/15/2019	**6.20	2770	16.05	0.0	133	0.97	12.65	750.74
MW-604	11/5/2019	5.89	2820	15.36	0.0	114	0.73	11.33	752.06
MW-605	1/10/2019	**5.79	3140	14.40	0.0	425	0.00	12.07	752.04
MW-605	3/13/2019	**5.73	3370	15.68	0.0	258	0.46	12.91	751.20
MW-605	5/21/2019	5.64	3210	13.83	0.0	216	1.55	12.15	751.96
MW-605	7/15/2019	**5.85	3110	16.91	0.0	129	0.96	12.60	751.51
MW-605	8/19/2019	**5.42	2920	19.49	0.0	237	0.00	12.51	751.60
MW-605	11/5/2019	5.59	3020	16.32	0.0	118	0.76	11.64	752.47

* Verification Sample obtained per certified statistical method and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009.

**Extra Sample for Quality Control Validation or per Standard Sampling Procedure

S.U. - Standard Units

µS - microsiemens

°C - Degrees Celsius

ft btoc - Feet Below Top of Casing

ft NGVD - National Geodetic Vertical Datum (NAVD 88)

NTU - Nephelometric Turbidity Unit

APPENDIX C

ALTERNATIVE SOURCE DEMONSTRATIONS

- C.1 CCR Landfill Groundwater Monitoring Alternative Source Demonstration Report November 2018 Groundwater Monitoring Event, CCR Landfill, Montrose Generating Station (June 2019)
- C.2 CCR Landfill Groundwater Monitoring Alternative Source Demonstration Report May 2019 Groundwater Monitoring Event, CCR Landfill, Montrose Generating Station (December 2019)

C.1 CCR Landfill Groundwater Monitoring Alternative Source
Demonstration Report November 2018 Groundwater Monitoring
Event, CCR Landfill, Montrose Generating Station (June 2019)

**CCR LANDFILL GROUNDWATER MONITORING
ALTERNATIVE SOURCE DEMONSTRATION REPORT
NOVEMBER 2018 GROUNDWATER MONITORING EVENT**

**CCR LANDFILL
MONTROSE GENERATING STATION
CLINTON, MISSOURI**

Presented To:

Kansas City Power & Light Company

Presented By:

SCS ENGINEERS

8575 West 110th Street, Suite 100

Overland Park, Kansas 66210

June 2019

File No. 27213168.18

CERTIFICATIONS

I, John R. Rockhold, being a qualified groundwater scientist and Registered Geologist in the State of Missouri, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill at the Montrose Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted hydrogeological practices and the local standard of care.



John R. Rockhold, R.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Missouri, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill at the Montrose Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted engineering practices and the local standard of care.



Douglas L. Doerr, P.E.

SCS Engineers

Table of Contents

Section	Page
CERTIFICATIONS	i
1 Regulatory Framework	1
2 Statistical Results	1
3 Alternative Source Demonstration	2
3.1 Box and Whiskers Plots.....	2
3.2 Piper Diagram Plots.....	2
3.3 Time Series Plots.....	3
4 Conclusion	3
5 General Comments	3

Appendices

- Appendix A Box and Whiskers Plots**
- Appendix B Piper Diagram**
- Appendix C Time Series Plots**

1 REGULATORY FRAMEWORK

Certain owners or operators of Coal Combustion Residuals (CCR) units are required to complete groundwater monitoring activities to evaluate whether a release from the unit has occurred. Included in the activities is the completion of a statistical analysis of the groundwater quality data as prescribed in § 257.93(h) of the CCR Final Rule. If the initial analysis indicates a statistically significant increase (SSI) over background levels, the owner or operator may perform an alternative source demonstration (ASD). In accordance with § 257.94(e)(2), the owner or operator of the CCR unit may demonstrate that a source other than the CCR unit caused the SSI over background levels for a constituent, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a SSI over background levels to include obtaining a certification from a qualified professional engineer verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under § 257.94. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under § 257.95. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

2 STATISTICAL RESULTS

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Montrose Generating Station has been completed in substantial compliance with the “Statistical Method Certification by A Qualified Professional Engineer” dated October 12, 2017. Detection monitoring groundwater samples were collected on November 19, 2018. Review and validation of the results from the November 2018 Detection Monitoring Event was completed on December 31, 2018, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was an SSI over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on January 10, 2019 and March 13, 2019.

The completed statistical evaluation identified one Appendix III constituent above its prediction limit. The prediction limit for chloride in monitoring well MW-605 is 50.32 mg/L. The detection monitoring sample was reported at 51.7 mg/L. The first verification re-sample was collected on January 10, 2019 with a result of 50.9 mg/L. The second verification re-sample was collected on March 13, 2019 with a result of 52.4 mg/L.

Therefore, in accordance with the Statistical Method Certification, the detection monitoring sample for chloride from monitoring well MW-605 exceeds its prediction limit and is a confirmed statistically significant increase (SSI) over background.

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified an SSI above the background prediction limit for chloride in monitoring well MW-605.

3 ALTERNATIVE SOURCE DEMONSTRATION

An Alternative Source Demonstration (ASD) is a means to provide supporting lines of evidence that something other than a release from a regulated CCR unit caused an SSI. For the above identified SSI for the CCR Landfill at the Montrose Generating Station, there are multiple lines of supporting evidence to indicate the above SSI was not caused by a release from the CCR Landfill. Select multiple lines of supporting evidence are described as follows.

3.1 BOX AND WHISKERS PLOTS

A commonly accepted method to demonstrate and visualize the distribution of data in a given data set is to construct box and whiskers plots. The basic box plotted graphically locates the median, 25th and 75th percentiles of the data set; the "whiskers" extend to the minimum and maximum values of the data set. The range between the ends of a box plot represents the Interquartile Range, which can be used as an estimate of spread or variability. The mean is denoted by a "+".

When comparing multiple wells or well groups, box plots for each well can be lined up on the same axis to roughly compare the variability in each well. This may be used as an exploratory screening for the test of homogeneity of variance across multiple wells.

An SSI was identified in well MW-605 for chloride. Therefore, box and whiskers plots for chloride in MW-605 and the two upgradient wells MW-506 and MW-601 were prepared to allow comparison of the chloride concentrations between wells. The comparison between wells indicates the chloride concentrations in well MW-605 are within or below the range of chloride in upgradient wells. This demonstrates that a source other than the CCR Landfill caused the SSI in chloride over background levels, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Box and whisker plots are provided in **Appendix A**.

3.2 PIPER DIAGRAM PLOTS

Piper diagrams are a form of tri-linear diagram, and a widely-accepted method to provide a visual representation of the ion concentration of groundwater. Piper diagrams portray water compositions and facilitate the interpretation and presentation of chemical analyses. They may be used to visually compare the chemical composition of water quality across wells, and aid in determining whether the waters are similar or dis-similar, and can over time indicate whether the waters are mixing.

A piper diagram has two triangular plots on the right and left side of a 4-sided center field. The three major cations are plotted in the left triangle and anions in the right. Each of the three cation/anion variables, in milliequivalents, is divided by the sum of the three values, to produce a percent of total cation/anions. These percentages determine the location of the associated symbol. The data points in the center field are located by extending the points in the lower triangles to the point of intersection. In order for a piper diagram to be produced, the selected data file must contain the following constituents: Sodium (Na), Potassium (K), Calcium (Ca), Magnesium (Mg), Chloride (Cl), Sulfate (SO₄), Carbonate (CO₃), and Bicarbonate (HCO₃).

A piper diagram generated for MW-605 and landfill leachate is provided in **Appendix B** and indicates the groundwater from this well does not exhibit the same geochemical characteristics as the leachate. The groundwater and the leachate plot in totally different hydrochemical facies indicating there is no mixing of the two types of water (groundwater and leachate). This demonstrates that a source other than the CCR Landfill caused the SSIs over background levels for chloride or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

3.3 TIME SERIES PLOTS

Time series plots provide a graphical method to view changes in data at a particular well (monitoring point) or wells over time. Time series plots display the variability in concentration levels over time and can be used to indicate possible outliers or data errors. More than one well can be compared on the same plot to look for differences between wells. Non-detect data is plotted as censored data at one-half of the laboratory reporting limit. Time series plots can also be used to examine the data for trends.

Time series plots for the chloride concentrations in MW-605 were plotted along with the chloride concentrations for upgradient wells MW-506 and MW-601. The plots indicate the chloride concentrations in MW-605 are below the concentrations in MW-506 and are typically below or very near the concentrations in MW-601. This demonstrates that a source other than the CCR Landfill caused the SSI over background levels, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Time series plots are provided in **Appendix C**.

4 CONCLUSION

Our opinion is that a sufficient body of evidence is available and presented above to demonstrate that a source other than the CCR Landfill caused the SSI over background levels, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Based on the successful ASD, the owner or operator of the CCR Landfill may continue with the detection monitoring program under § 257.94.

5 GENERAL COMMENTS

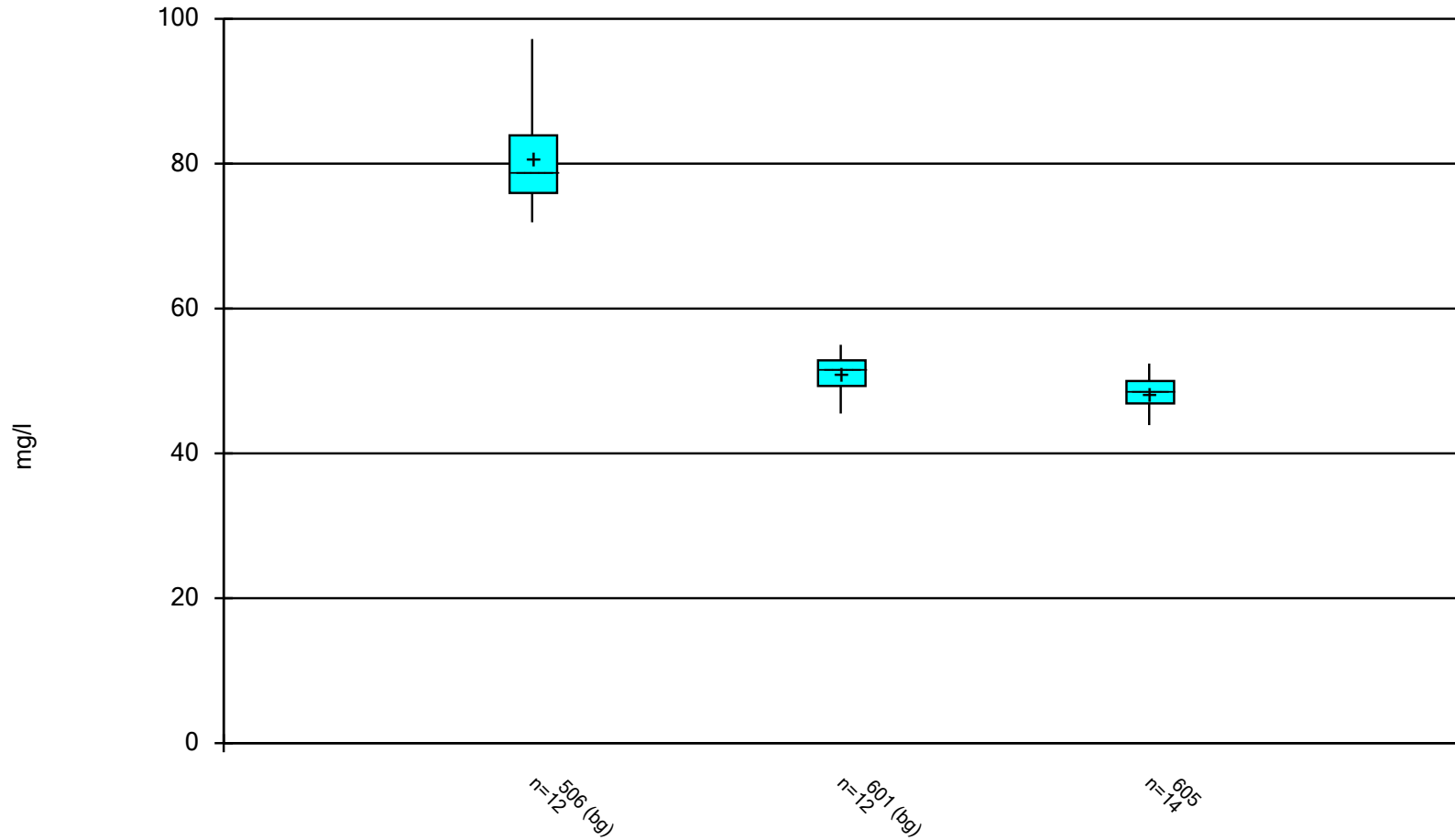
This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of KCP&L for specific application to the Montrose Generating Station. No warranties, express or implied, are intended or made.

The signatures of the certifying registered geologist and professional engineer on this document represent that to the best of their knowledge, information, and belief in the exercise of their professional judgement in accordance with the standard of practice, it is their professional opinions that the aforementioned information is accurate as of the date of such signatures. Any opinion or decisions by them are made on the basis of their experience, qualifications, and professional judgement and are not to be construed as warranties or guaranties. In addition, opinions relating to regulatory, environmental, geologic, geochemical and geotechnical conditions interpretations or other estimates are based on available data, and actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care.

Appendix A

Box and Whiskers Plots

Box & Whiskers Plot



Constituent: Chloride Analysis Run 4/10/2019 5:54 PM View: CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Box & Whiskers Plot

Constituent: Chloride (mg/l) Analysis Run 4/10/2019 5:54 PM View: CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506 (bg)	601 (bg)	605
12/16/2015	92.4	52.5	
12/17/2015			43.9
2/16/2016	97.2	53	45.7
5/23/2016	84.7	50.6	47.3
8/22/2016	77.5	45.5	46.5
11/7/2016			48.2
11/8/2016	73.1	47.5	
2/7/2017	79	49	48
5/1/2017	79.2		
5/2/2017		51.1	48.7
7/31/2017	71.9	52.7	49.1
10/2/2017	74.4	52.4	48.7
11/15/2017	77.7	54.2	48.8
5/14/2018	79	55	47.8
11/19/2018	83.1	49.6	51.7
1/10/2019			50.9
3/13/2019			52.4
Median	79	51.75	48.45
LowerQ.	75.95	49.3	46.9
UpperQ.	83.9	52.85	50
Min	71.9	45.5	43.9
Max	97.2	55	52.4
Mean	80.77	51.09	48.41

Box & Whiskers Plot

Montrose Generating Station UWL Client: SCS Engineers Data: Montrose Printed 4/10/2019, 5:54 PM

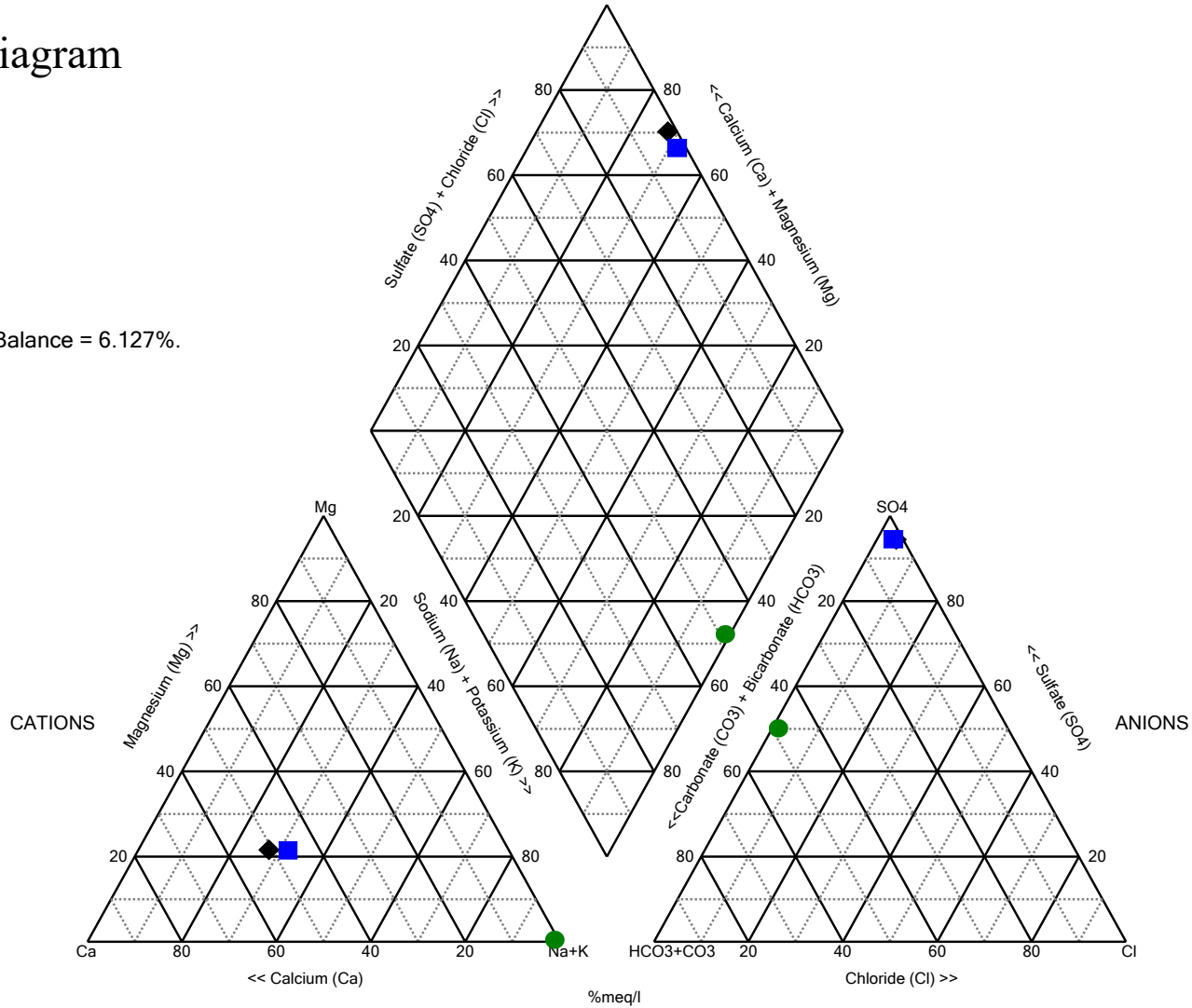
<u>Constituent</u>	<u>Well</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Std. Err.</u>	<u>Median</u>	<u>Min.</u>	<u>Max.</u>	<u>%NDs</u>
Chloride (mg/l)	506 (bg)	12	80.77	7.586	2.19	79	71.9	97.2	0
Chloride (mg/l)	601 (bg)	12	51.09	2.794	0.8066	51.75	45.5	55	0
Chloride (mg/l)	605	14	48.41	2.268	0.6062	48.45	43.9	52.4	0

Appendix B

Piper Diagram

Piper Diagram

Cation-Anion Balance = 6.127%.



◆ 605 1/10/2019

■ 605 2/7/2017

● LEACHATE 2/7/2017

Analysis Run 4/11/2019 9:50 AM View: Piper Dates

Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Piper Diagram

Analysis Run 4/11/2019 9:51 AM View: Piper Dates

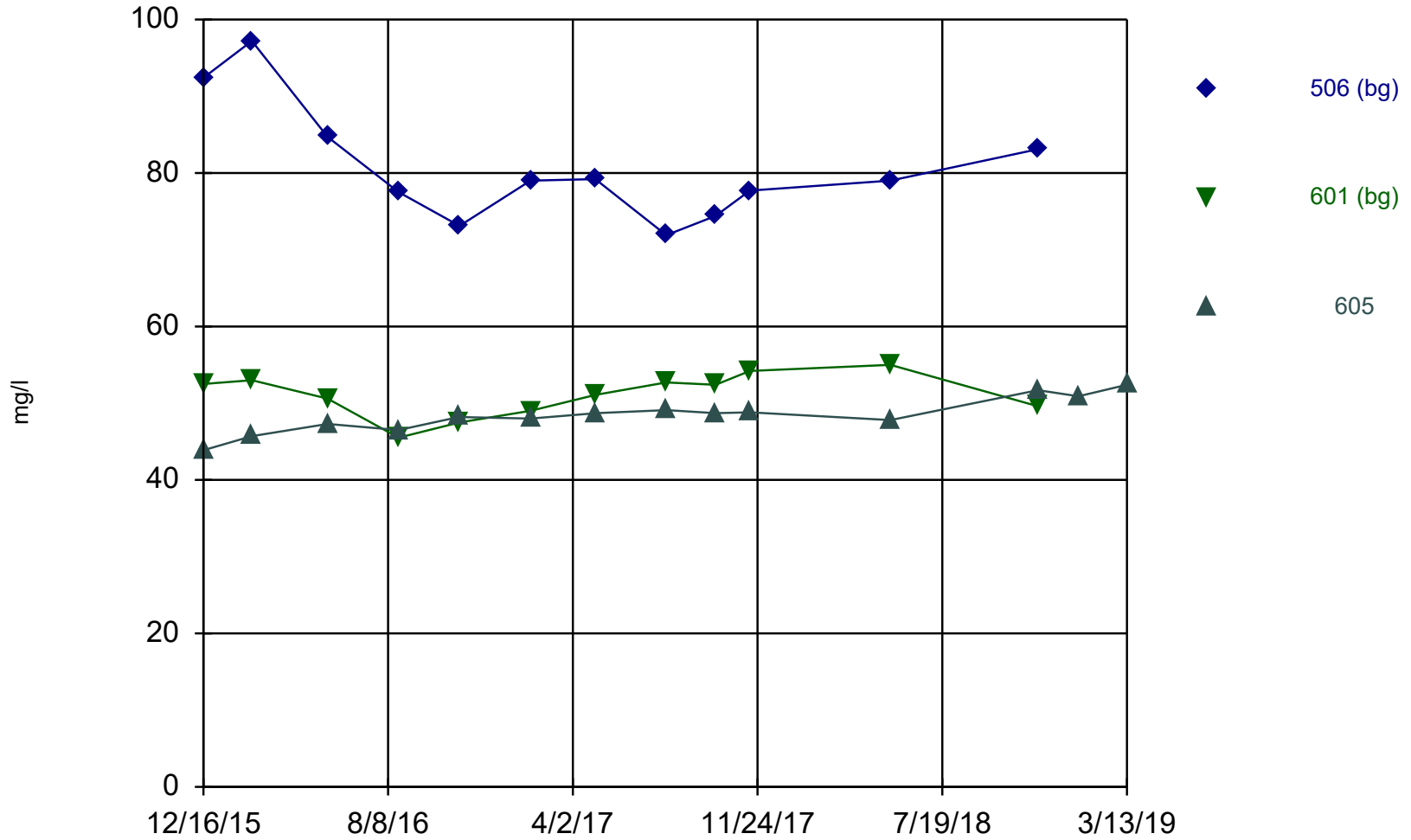
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Totals (ppm)	Na	K	Ca	Mg	Cl	SO4	HCO3	CO3
605 2/7/2017	284	2.71	367	101	48	2050	48.1	10
605 1/10/2019	264	2.79	421	107	50.9	1870	42	10
LEACHATE 2/7/2017	1050	23.9	5.47	0.5	16.3	1360	10	840

Appendix C

Time Series Plots

Time Series



Constituent: Chloride Analysis Run 4/10/2019 5:53 PM View: CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Time Series

Constituent: Chloride (mg/l) Analysis Run 4/10/2019 5:54 PM View: CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506 (bg)	601 (bg)	605
12/16/2015	92.4	52.5	
12/17/2015			43.9
2/16/2016	97.2	53	45.7
5/23/2016	84.7	50.6	47.3
8/22/2016	77.5	45.5	46.5
11/7/2016			48.2
11/8/2016	73.1	47.5	
2/7/2017	79	49	48
5/1/2017	79.2		
5/2/2017		51.1	48.7
7/31/2017	71.9	52.7	49.1
10/2/2017	74.4	52.4	48.7
11/15/2017	77.7	54.2	48.8
5/14/2018	79	55	47.8
11/19/2018	83.1	49.6	51.7
1/10/2019			50.9
3/13/2019			52.4

C.2 CCR Landfill Groundwater Monitoring Alternative Source
Demonstration Report May 2019 Groundwater Monitoring
Event, CCR Landfill, Montrose Generating Station (December
2019)

**CCR LANDFILL GROUNDWATER MONITORING
ALTERNATIVE SOURCE DEMONSTRATION REPORT
MAY 2019 GROUNDWATER MONITORING EVENT**

**CCR LANDFILL
MONTROSE GENERATING STATION
CLINTON, MISSOURI**

Presented To:

Evergy Metro, Inc.

Presented By:

SCS ENGINEERS

8575 West 110th Street, Suite 100

Overland Park, Kansas 66210

December 2019

File No. 27213168.18

CERTIFICATIONS

I, John R. Rockhold, being a qualified groundwater scientist and Registered Geologist in the State of Missouri, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill at the Montrose Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted hydrogeological practices and the local standard of care.



John R. Rockhold, R.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Missouri, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill at the Montrose Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted engineering practices and the local standard of care.



Douglas L. Doerr, P.E.

SCS Engineers

Table of Contents

Section	Page
CERTIFICATIONS.....	i
1 Regulatory Framework	1
2 Statistical Results.....	1
3 Alternative Source Demonstration.....	2
3.1 Box and Whiskers Plots	2
3.2 Piper Diagram Plots	2
3.3 Time Series Plots	3
4 Conclusion	3
5 General Comments	3

Appendices

- Appendix A Box and Whiskers Plots**
- Appendix B Piper Diagram**
- Appendix C Time Series Plots**

1 REGULATORY FRAMEWORK

Certain owners or operators of Coal Combustion Residuals (CCR) units are required to complete groundwater monitoring activities to evaluate whether a release from the unit has occurred. Included in the activities is the completion of a statistical analysis of the groundwater quality data as prescribed in § 257.93(h) of the CCR Final Rule. If the initial analysis indicates a statistically significant increase (SSI) over background levels, the owner or operator may perform an alternative source demonstration (ASD). In accordance with § 257.94(e)(2), the owner or operator of the CCR unit may demonstrate that a source other than the CCR unit caused the SSI over background levels for a constituent, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a SSI over background levels to include obtaining a certification from a qualified professional engineer verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under § 257.94. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under § 257.95. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

2 STATISTICAL RESULTS

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Montrose Generating Station has been completed in substantial compliance with the “Statistical Method Certification by A Qualified Professional Engineer” dated October 12, 2017. Detection monitoring groundwater samples were collected on May 21, 2019. Review and validation of the results from the May 2019 Detection Monitoring Event was completed on July 3, 2019, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on July 15, 2019 and August 19, 2019.

The completed statistical evaluation identified one Appendix III constituent above its prediction limit in monitoring well MW-605.

Constituent/Monitoring Well	*UPL	Observation May 21, 2019	1st Verification July 15, 2019	2nd Verification August 19, 2019
Chloride 605	50.32	55.4	57.8	57.9

*UPL – Upper Prediction Limit

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified an SSI above the background prediction limit for chloride in monitoring well MW-605.

3 ALTERNATIVE SOURCE DEMONSTRATION

An Alternative Source Demonstration (ASD) is a means to provide supporting lines of evidence that something other than a release from a regulated CCR unit caused an SSI. For the above identified SSI for the CCR Landfill at the Montrose Generating Station, there are multiple lines of supporting evidence to indicate the above SSI was not caused by a release from the CCR Landfill. Select multiple lines of supporting evidence are described as follows.

3.1 BOX AND WHISKERS PLOTS

A commonly accepted method to demonstrate and visualize the distribution of data in a given data set is to construct box and whiskers plots. The basic box plotted graphically locates the median, 25th and 75th percentiles of the data set; the "whiskers" extend to the minimum and maximum values of the data set. The range between the ends of a box plot represents the Interquartile Range, which can be used as an estimate of spread or variability. The mean is denoted by a "+".

When comparing multiple wells or well groups, box plots for each well can be lined up on the same axis to roughly compare the variability in each well. This may be used as an exploratory screening for the test of homogeneity of variance across multiple wells.

An SSI was identified in well MW-605 for chloride. Therefore, box and whiskers plots for chloride in MW-605 and the two upgradient wells MW-506 and MW-601 were prepared to allow comparison of the chloride concentrations between wells. The comparison between wells indicates the chloride concentrations in well MW-605 are within or below the range of chloride in upgradient wells. This demonstrates that a source other than the CCR Landfill caused the SSI in chloride over background levels, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Box and whisker plots are provided in **Appendix A**.

3.2 PIPER DIAGRAM PLOTS

Piper diagrams are a form of tri-linear diagram, and a widely-accepted method to provide a visual representation of the ion concentration of groundwater. Piper diagrams portray water compositions and facilitate the interpretation and presentation of chemical analyses. They may be used to visually compare the chemical composition of water quality across wells, and aid in determining whether the waters are similar or dis-similar, and can over time indicate whether the waters are mixing.

A piper diagram has two triangular plots on the right and left side of a 4-sided center field. The three major cations are plotted in the left triangle and anions in the right. Each of the three cation/anion variables, in milliequivalents, is divided by the sum of the three values, to produce a percent of total cation/anions. These percentages determine the location of the associated symbol. The data points in the center field are located by extending the points in the lower triangles to the point of intersection. In order for a piper diagram to be produced, the selected data file must contain the following constituents: Sodium (Na), Potassium (K), Calcium (Ca), Magnesium (Mg), Chloride (Cl), Sulfate (SO₄), Carbonate (CO₃), and Bicarbonate (HCO₃).

A piper diagram generated for MW-605 and landfill leachate is provided in **Appendix B** and indicates the groundwater from this well does not exhibit the same geochemical characteristics as the leachate. The

groundwater and the leachate plot in totally different hydrochemical facies indicating there is no mixing of the two types of water (groundwater and leachate). This demonstrates that a source other than the CCR Landfill caused the SSI over background levels for chloride or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

3.3 TIME SERIES PLOTS

Time series plots provide a graphical method to view changes in data at a particular well (monitoring point) or wells over time. Time series plots display the variability in concentration levels over time and can be used to indicate possible outliers or data errors. More than one well can be compared on the same plot to look for differences between wells. Non-detect data is plotted as censored data at one-half of the laboratory reporting limit. Time series plots can also be used to examine the data for trends.

Time series plots for the chloride concentrations in MW-605 were plotted along with the chloride concentrations for upgradient wells MW-506 and MW-601. The plots indicate the chloride concentrations in MW-605 are below the concentrations in MW-506 and are typically below or very near the concentrations in MW-601. This demonstrates that a source other than the CCR Landfill caused the SSI over background levels, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Time series plots are provided in **Appendix C**.

4 CONCLUSION

Our opinion is that a sufficient body of evidence is available and presented above to demonstrate that a source other than the CCR Landfill caused the SSI over background levels, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Based on the successful ASD, the owner or operator of the CCR Landfill may continue with the detection monitoring program under § 257.94.

5 GENERAL COMMENTS

This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of Evergy Metro, Inc. for specific application to the Montrose Generating Station. No warranties, express or implied, are intended or made.

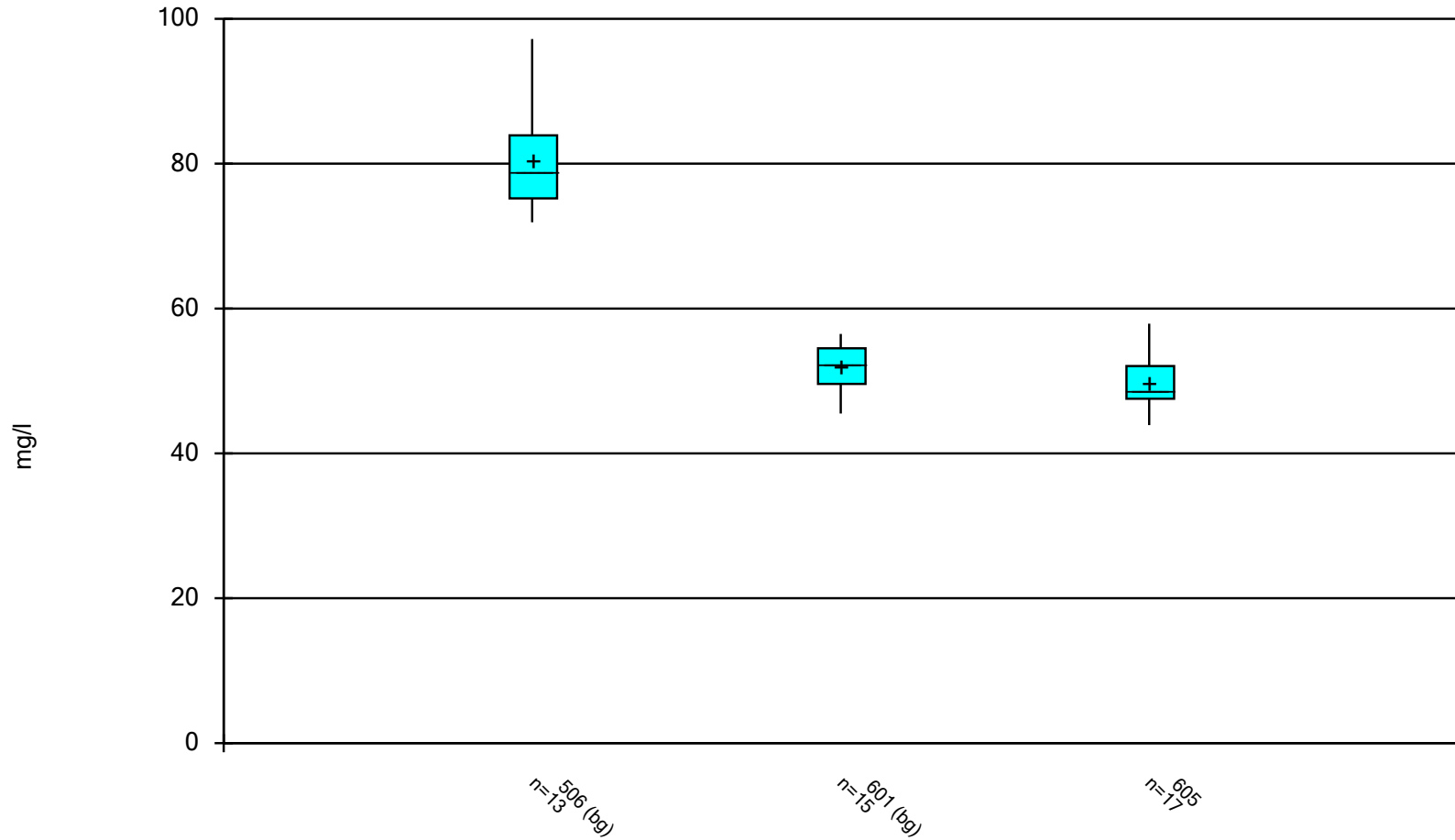
The signatures of the certifying registered geologist and professional engineer on this document represent that to the best of their knowledge, information, and belief in the exercise of their professional judgement in accordance with the standard of practice, it is their professional opinions that the aforementioned information is accurate as of the date of such signatures. Any opinion or decisions by them are made on the basis of their experience, qualifications, and professional judgement and are not to be construed as warranties or guaranties. In addition, opinions relating to regulatory, environmental, geologic, geochemical and geotechnical conditions interpretations or other estimates are based on available data,

and actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care.

Appendix A

Box and Whiskers Plots

Box & Whiskers Plot



Constituent: Chloride Analysis Run 11/4/2019 10:06 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Box & Whiskers Plot

Constituent: Chloride (mg/l) Analysis Run 11/4/2019 10:07 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506 (bg)	601 (bg)	605
12/16/2015	92.4	52.5	
12/17/2015			43.9
2/16/2016	97.2	53	45.7
5/23/2016	84.7	50.6	47.3
8/22/2016	77.5	45.5	46.5
11/7/2016			48.2
11/8/2016	73.1	47.5	
2/7/2017	79	49	48
5/1/2017	79.2		
5/2/2017		51.1	48.7
7/31/2017	71.9	52.7	49.1
10/2/2017	74.4	52.4	48.7
11/15/2017	77.7	54.2	48.8
5/14/2018	79	55	47.8
11/19/2018	83.1	49.6	51.7
1/10/2019			50.9
3/13/2019			52.4
5/21/2019	76	55.5	55.4
7/15/2019		56.5	57.8
8/19/2019		54.5	57.9
Median	79	52.5	48.7
LowerQ.	75.2	49.6	47.55
UpperQ.	83.9	54.5	52.05
Min	71.9	45.5	43.9
Max	97.2	56.5	57.9
Mean	80.4	51.97	49.93

Box & Whiskers Plot

Montrose Generating Station UWL Client: SCS Engineers Data: Montrose Printed 11/4/2019, 10:07 AM

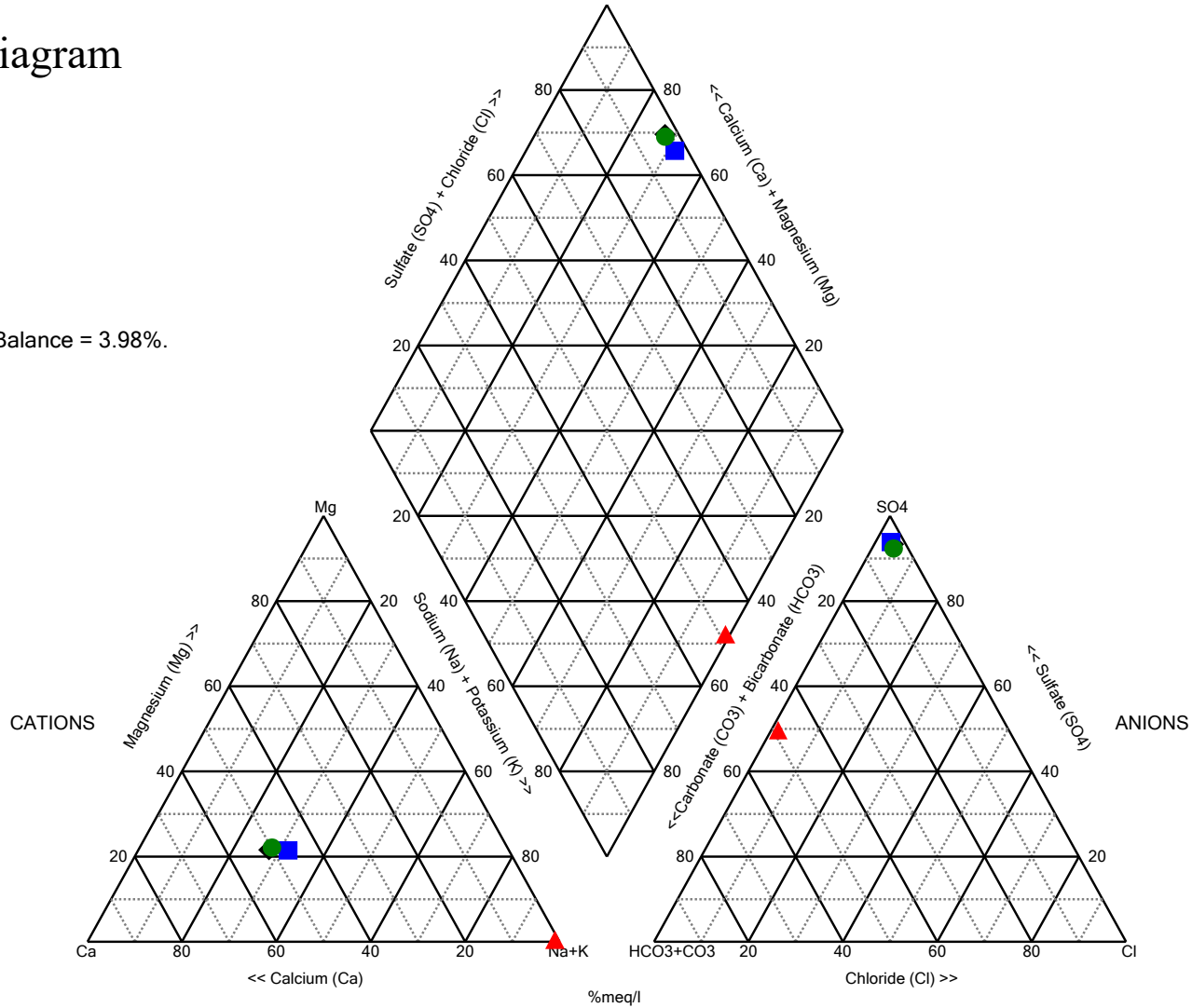
<u>Constituent</u>	<u>Well</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Std. Err.</u>	<u>Median</u>	<u>Min.</u>	<u>Max.</u>	<u>%NDs</u>
Chloride (mg/l)	506 (bg)	13	80.4	7.382	2.047	79	71.9	97.2	0
Chloride (mg/l)	601 (bg)	15	51.97	3.1	0.8003	52.5	45.5	56.5	0
Chloride (mg/l)	605	17	49.93	3.99	0.9677	48.7	43.9	57.9	0

Appendix B

Piper Diagram

Piper Diagram

Cation-Anion Balance = 3.98%.



Analysis Run 11/4/2019 10:11 AM View: LF CCR III

Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Piper Diagram

Analysis Run 11/4/2019 10:12 AM View: LF CCR III

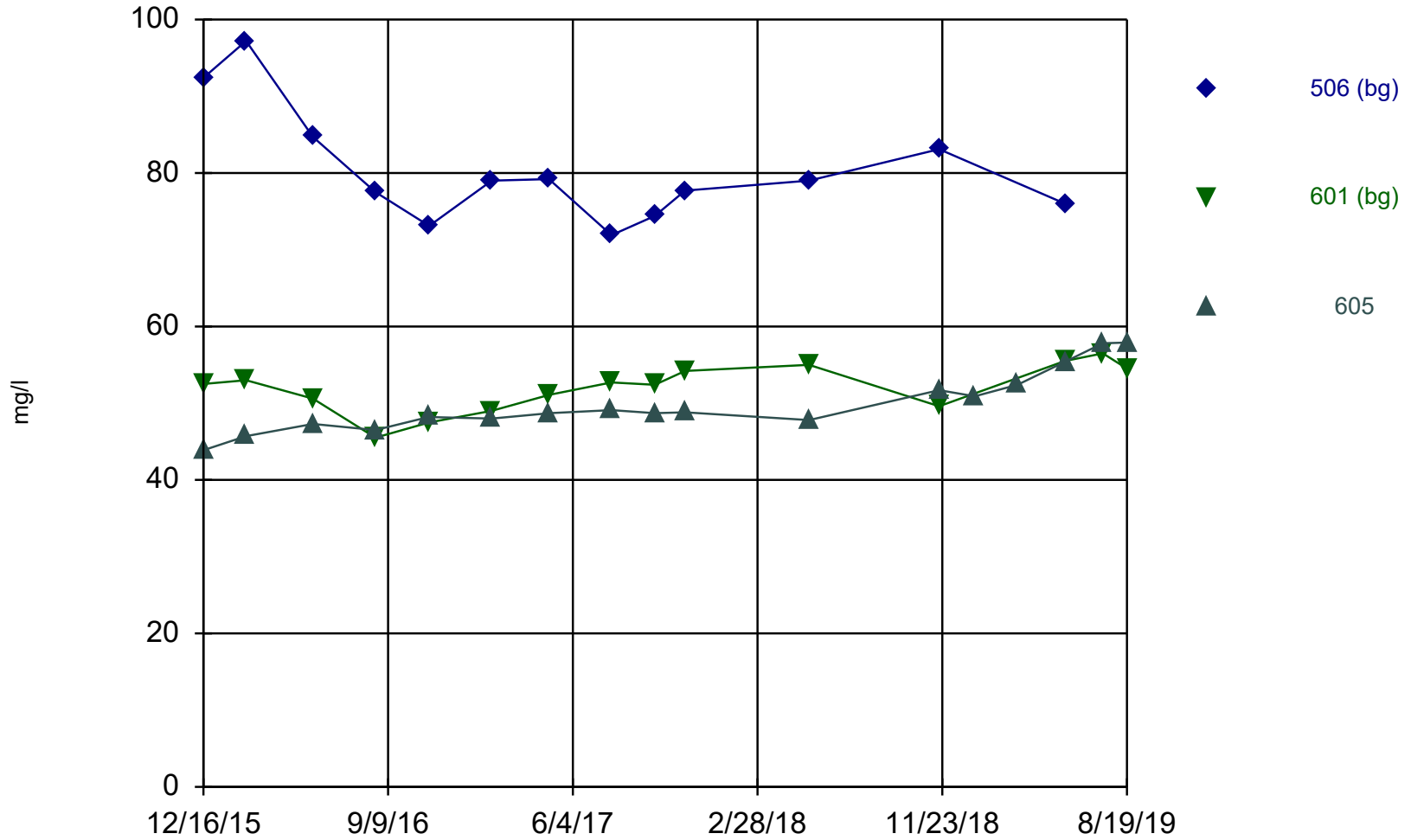
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Totals (ppm)	Na	K	Ca	Mg	Cl	SO4	HCO3	CO3
605 2/7/2017	284	2.71	367	101	48	2050	48.1	20
605 1/10/2019	264	2.79	421	107	50.9	1870	42	20
605 7/15/2019	261	2.73	407	108	57.8	1640	41.6	20
LEACHATE 2/7/2017	1050	23.9	5.47	1	16.3	1360	20	840

Appendix C

Time Series Plots

Time Series



Constituent: Chloride Analysis Run 11/4/2019 10:04 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Time Series

Constituent: Chloride (mg/l) Analysis Run 11/4/2019 10:05 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506 (bg)	601 (bg)	605
12/16/2015	92.4	52.5	
12/17/2015			43.9
2/16/2016	97.2	53	45.7
5/23/2016	84.7	50.6	47.3
8/22/2016	77.5	45.5	46.5
11/7/2016			48.2
11/8/2016	73.1	47.5	
2/7/2017	79	49	48
5/1/2017	79.2		
5/2/2017		51.1	48.7
7/31/2017	71.9	52.7	49.1
10/2/2017	74.4	52.4	48.7
11/15/2017	77.7	54.2	48.8
5/14/2018	79	55	47.8
11/19/2018	83.1	49.6	51.7
1/10/2019			50.9
3/13/2019			52.4
5/21/2019	76	55.5	55.4
7/15/2019		56.5	57.8
8/19/2019		54.5	57.9

ADDENDUM 1

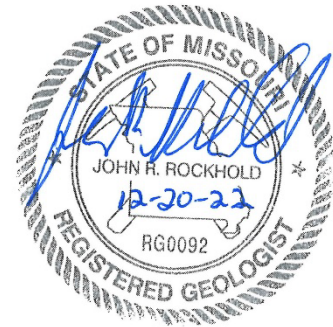
2019 Annual Groundwater Monitoring and Corrective Action Report Addendum 1

December 20, 2022
File No. 27213168.19

To: Evergy Metro, Inc.
Jared Morrison – Director, Water and Waste Programs

From: SCS Engineers
Douglas L. Doerr, P.E.
John R. Rockhold, P.G.

Subject: 2019 Annual Groundwater Monitoring and Corrective Action Report Addendum 1
Evergy Metro, Inc.
CCR Landfill
Montrose Generating Station – Clinton, Missouri



The CCR Landfill at the Montrose Generating Station is subject to the groundwater monitoring and corrective action requirements of the “Coal Combustion Residuals (CCR) Final Rule” (Rule); as described in CFR 40 257.90 through CFR 40 257.98. An Annual Groundwater Monitoring and Corrective Action (GWMCA) Report documenting activities completed in 2019 for the CCR Landfill was completed and placed in the facility’s operating record on January 30, 2020, as required by the Rule. The Annual GWMCA report was to fulfill the requirements specified in 40 CFR 257.90(e).

This Addendum has been prepared to supplement the operating record in recognition of comments received by Evergy from the U.S. Environmental Protection Agency (USEPA) on January 11, 2022. In addition to the information listed in 40 CFR 257.90(e), the USEPA indicated in their comments that the GWMCA Report contain the following:

- Results of laboratory analysis of groundwater or other environmental media samples for 40 CFR 257 Appendix III and Appendix IV constituents or other constituents, such as those supporting characterization of site conditions that may ultimately affect a remedy.
- Required statistical analysis performed on laboratory analysis results; and
- Calculated groundwater flow rate and direction.

This information is not specifically referred to in 40 CFR 257.90(e) for inclusion in the GWMCA Reports; however, it is routinely collected, determined and maintained in Evergy’s files and is being provided in the attachments to this addendum.

The attachments to this addendum are as follows:

- Attachment 1 – Laboratory Analytical Reports:
Includes laboratory data packages with supporting information such as case narrative, sample and method summary, analytical results, quality control, and chain-of-custody documentation. The laboratory data packages for the following sampling events are provided:



- January 2019 – First verification sampling for the Fall 2018 detection monitoring event.
 - March 2019 – Second verification sampling for the Fall 2018 detection monitoring event.
 - May 2019 – Spring 2019 semiannual detection monitoring sampling event.
 - July 2019 – First verification sampling for the Spring 2019 detection monitoring sampling event.
 - August 2019 – Second verification sampling for the Spring 2019 detection monitoring sampling event.
 - November 2019 - Fall 2019 semiannual detection monitoring sampling event.
- Attachment 2 - Statistical Analyses:

Includes summary of statistical results, prediction limit plots, prediction limit background data, detection sample results, first and second verification re-sample results (when applicable), extra sample results for pH (collected as part of the approved sampling procedures), input parameters, and a Prediction Limit summary table. Statistical analyses completed in 2019 included the following:

 - Fall 2018 semiannual detection monitoring statistical analyses.
 - Spring 2019 semiannual detection monitoring statistical analyses.
- Attachment 3 - Groundwater Potentiometric Surface Maps:

Includes groundwater potentiometric surface maps with the measured groundwater elevations at each well and the generalized groundwater flow direction and the calculated groundwater flow rate. Maps for the following sampling events are provided:

 - May 2019 - Spring 2019 semiannual detection monitoring sampling event.
 - November 2019 - Fall 2019 semiannual detection monitoring sampling event.

Jared Morrison
December 20, 2022

ATTACHMENT 1
Laboratory Analytical Reports

Jared Morrison
December 20, 2022

ATTACHMENT 1-1
January 2019 Sampling Event Laboratory Report

January 21, 2019

SCS Engineers - KS

Sample Delivery Group: L1060634
Samples Received: 01/12/2019
Project Number: 27213168.18
Description: KCPL - Montrose Generating Station

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:



Jeff Carr
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1	1 Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	2 Tc
Cn: Case Narrative	5	
Sr: Sample Results	6	3 Ss
MW-602 L1060634-01	6	
DUPLCATE 1 L1060634-02	7	4 Cn
MW-605 L1060634-03	8	5 Sr
MW-705 L1060634-04	9	
DUPLICATE 2 L1060634-05	10	6 Qc
MW-702 L1060634-06	11	
DUPLICATE 3 L1060634-07	12	7 Gl
MW-703 L1060634-08	13	8 Al
DUPLICATE 4 L1060634-09	14	9 Sc
Qc: Quality Control Summary	15	
Gravimetric Analysis by Method 2540 C-2011	15	
Wet Chemistry by Method 9056A	16	
Metals (ICP) by Method 6010B	18	
Gl: Glossary of Terms	19	
Al: Accreditations & Locations	20	
Sc: Sample Chain of Custody	21	

SAMPLE SUMMARY



MW-602 L1060634-01 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1223839	1	01/16/19 10:48	01/16/19 11:47	AJS

Collected by	Collected date/time	Received date/time
Whit Martin	01/10/19 11:50	01/12/19 08:30

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

DUPLICATE 1 L1060634-02 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1223839	1	01/16/19 10:48	01/16/19 11:47	AJS

Collected by	Collected date/time	Received date/time
Whit Martin	01/10/19 11:50	01/12/19 08:30

MW-605 L1060634-03 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1223919	1	01/18/19 00:02	01/18/19 00:02	ELN

Collected by	Collected date/time	Received date/time
Whit Martin	01/10/19 12:45	01/12/19 08:30

MW-705 L1060634-04 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1223919	1	01/18/19 00:18	01/18/19 00:18	ELN

Collected by	Collected date/time	Received date/time
Whit Martin	01/10/19 15:10	01/12/19 08:30

DUPLICATE 2 L1060634-05 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1223919	1	01/18/19 01:20	01/18/19 01:20	ELN

Collected by	Collected date/time	Received date/time
Whit Martin	01/10/19 15:10	01/12/19 08:30

MW-702 L1060634-06 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1223291	1	01/14/19 18:41	01/15/19 11:08	TRB

Collected by	Collected date/time	Received date/time
Whit Martin	01/10/19 13:30	01/12/19 08:30

DUPLICATE 3 L1060634-07 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1223291	1	01/14/19 18:41	01/15/19 11:47	TRB

Collected by	Collected date/time	Received date/time
Whit Martin	01/10/19 13:30	01/12/19 08:30

MW-703 L1060634-08 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1224700	20	01/18/19 17:04	01/18/19 17:04	ELN

Collected by	Collected date/time	Received date/time
Whit Martin	01/10/19 14:25	01/12/19 08:30

SAMPLE SUMMARY



DUPLICATE 4 L1060634-09 GW

Collected by Whit Martin
 Collected date/time 01/10/19 14:25
 Received date/time 01/12/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1224700	20	01/18/19 17:14	01/18/19 17:14	ELN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	1870000		25000	1	01/16/2019 11:47	WG1223839

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	1950000		25000	1	01/16/2019 11:47	WG1223839

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	50900		1000	1	01/18/2019 00:02	WG1223919

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	13400		1000	1	01/18/2019 00:18	WG1223919

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	13500		1000	1	01/18/2019 01:20	WG1223919

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	01/15/2019 11:08	WG1223291

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	01/15/2019 11:47	WG1223291

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	962000		100000	20	01/18/2019 17:04	WG1224700

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	939000		100000	20	01/18/2019 17:14	WG1224700

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3376566-1 01/16/19 11:47

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		2820	10000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

L1060411-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1060411-04 01/16/19 11:47 • (DUP) R3376566-3 01/16/19 11:47

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	369000	364000	1	1.36		5

Laboratory Control Sample (LCS)

(LCS) R3376566-2 01/16/19 11:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8660000	98.4	85.0-115	

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3376793-1 01/17/19 16:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1060411-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1060411-06 01/17/19 18:23 • (DUP) R3376793-3 01/17/19 18:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	56000	56000	1	0.131		15

L1060634-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1060634-04 01/18/19 00:18 • (DUP) R3376793-5 01/18/19 00:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	13400	13500	1	0.273		15

Laboratory Control Sample (LCS)

(LCS) R3376793-2 01/17/19 17:10

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	38600	96.5	80.0-120	

L1060411-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1060411-06 01/17/19 18:23 • (MS) R3376793-4 01/17/19 18:54

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	56000	103000	95.1	1	80.0-120	E

L1060634-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1060634-04 01/18/19 00:18 • (MS) R3376793-6 01/18/19 00:49 • (MSD) R3376793-7 01/18/19 01:04

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	13400	63900	64000	101	101	1	80.0-120			0.143	15



Method Blank (MB)

(MB) R3377160-1 01/18/19 15:30

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1060639-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1060639-05 01/18/19 18:20 • (DUP) R3377160-7 01/18/19 18:31

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	42200	42400	1	0.437		15

L1060642-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1060642-08 01/18/19 20:52 • (DUP) R3377160-8 01/18/19 21:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	31900	32000	1	0.396		15

Laboratory Control Sample (LCS)

(LCS) R3377160-2 01/18/19 15:41

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Sulfate	40000	38200	95.6	80.0-120	

L1060634-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1060634-08 01/18/19 16:31 • (MS) R3377160-3 01/18/19 16:42 • (MSD) R3377160-4 01/18/19 16:53

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	50000	878000	900000	911000	43.6	65.4	1	80.0-120	<u>EV</u>	<u>EV</u>	1.20	15

L1060639-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1060639-04 01/18/19 17:25 • (MS) R3377160-5 01/18/19 17:36 • (MSD) R3377160-6 01/18/19 18:09

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	50000	43300	88100	88000	89.5	89.3	1	80.0-120			0.103	15



Method Blank (MB)

(MB) R3375870-1 01/15/19 11:01

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		12.6	200

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3375870-2 01/15/19 11:03 • (LCSD) R3375870-3 01/15/19 11:06

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Boron	1000	975	956	97.5	95.6	80.0-120			2.02	20

⁷Gl

⁸Al

L1060634-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1060634-06 01/15/19 11:08 • (MS) R3375870-5 01/15/19 11:14 • (MSD) R3375870-6 01/15/19 11:16

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	ND	1170	1180	97.6	98.1	1	75.0-125			0.439	20

⁹Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
V	The sample concentration is too high to evaluate accurate spike recoveries.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

Billing Information:

Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Report to:
Jason Franks

Email To: jfranks@scsengineers.com;
jay.martin@kcpl.com;

Project
Description: **KCPL - Montrose Generating Station**

City/State
Collected:

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project #
27213168.18

Lab Project #
AQUAOPKS-MONTROSE

Collected by (print):
Whit Martin

Site/Facility ID #

P.O. #

Collected by (signature):
Whit Martin

Rush? (Lab MUST Be Notified)

Quote #

Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Date Results Needed

Standard

No.
of
Ctrs

Immediately
Packed on Ice N Y

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Ctrs	Boron - 6010 250mlHDPE-HNO3	CHLORIDE 125mlHDPE-NoPres	SULFATE 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres										
MW-602	Grab	GW		1/10/19	1150	1														
DUPLICATE 1	Grab	GW		1/10/19	1150	1														
MW-602 MS/MSD	Grab	GW		1/10/19	1155	1														
MW-605	Grab	GW		1/10/19	1245	1			X											
MW-705	Grab	GW		1/10/19	1510	1			X											
DUPLICATE 2	Grab	GW		1/10/19	1510	1			X											
MW-705MS/MSD	Grab	GW		1/10/19	1515	1			X											
MW-702	Grab	GW		1/10/19	1330	1	X													
DUPLICATE 3	Grab	GW		1/10/19	1330	1	X													
MW-702 MS/MSD	Grab	GW		1/10/19	1335	1	X													



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L# *L1060634*

A151

Acctnum: **AQUAOPKS**

Template: **T144749**

Prelogin: **P689187**

TSR: **206 - Jeff Carr**

PB:

Shipped Via:

Remarks Sample # (lab only)

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

RAD SCREEN: <0.5

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:
 UPS FedEx Courier

Tracking # *4510 1655 8684*

pH _____ Temp _____
Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
COC Signed/Accurate:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Bottles arrive intact:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Correct bottles used:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Sufficient volume sent:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
If Applicable	
VOA Zero Headspace:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Preservation Correct/Checked:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N

Relinquished by: (Signature) <i>Whit Martin</i>	Date: <i>1/11/19</i>	Time: <i>1326</i>	Received by: (Signature) <i>[Signature]</i>	Trip Blank Received: Yes/No HCL/MeOH TBR
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C <i>10:10.9</i>
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) <i>[Signature]</i>	Bottles Received: <i>13</i> Date: <i>01/12/19</i> Time: <i>8:30</i>

If preservation required by Login: Date/Time
Hold:
Condition: *NCF / OK*

Jared Morrison
December 20, 2022

ATTACHMENT 1-2
March 2019 Sampling Event Laboratory Report

March 21, 2019

SCS Engineers - KS

Sample Delivery Group: L1078837
Samples Received: 03/14/2019
Project Number: 27213168.18
Description: KCPL - Montrose Generating Station

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210










Entire Report Reviewed By:



Jeff Carr
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1	
Tc: Table of Contents	2	
Ss: Sample Summary	3	
Cn: Case Narrative	4	
Sr: Sample Results	5	
MW-605 L1078837-01	5	
DUPLICATE 1 L1078837-02	6	
Qc: Quality Control Summary	7	
Wet Chemistry by Method 9056A	7	
Gl: Glossary of Terms	8	
Al: Accreditations & Locations	9	
Sc: Sample Chain of Custody	10	
		

SAMPLE SUMMARY



MW-605 L1078837-01 GW

Collected by: Whit Martin
 Collected date/time: 03/13/19 11:00
 Received date/time: 03/14/19 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1252509	1	03/20/19 18:45	03/20/19 18:45	ELN	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

DUPLICATE 1 L1078837-02 GW

Collected by: Whit Martin
 Collected date/time: 03/13/19 11:00
 Received date/time: 03/14/19 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1252509	1	03/20/19 20:14	03/20/19 20:14	ELN	Mt. Juliet, TN

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	52400		1000	1	03/20/2019 18:45	WG1252509

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	53100		1000	1	03/20/2019 20:14	WG1252509

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3393631-1 03/20/19 15:17

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1078837-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1078837-01 03/20/19 18:45 • (DUP) R3393631-3 03/20/19 19:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	52400	53200	1	1.43		15

Laboratory Control Sample (LCS)

(LCS) R3393631-2 03/20/19 15:32

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39600	99.1	80.0-120	

L1078837-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1078837-01 03/20/19 18:45 • (MS) R3393631-4 03/20/19 19:15 • (MSD) R3393631-5 03/20/19 19:30

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	52400	103000	103000	102	101	1	80.0-120	<u>E</u>	<u>E</u>	0.264	15

L1078975-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1078975-03 03/21/19 00:13 • (MS) R3393631-7 03/21/19 00:43

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	37300	87300	99.9	1	80.0-120	



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

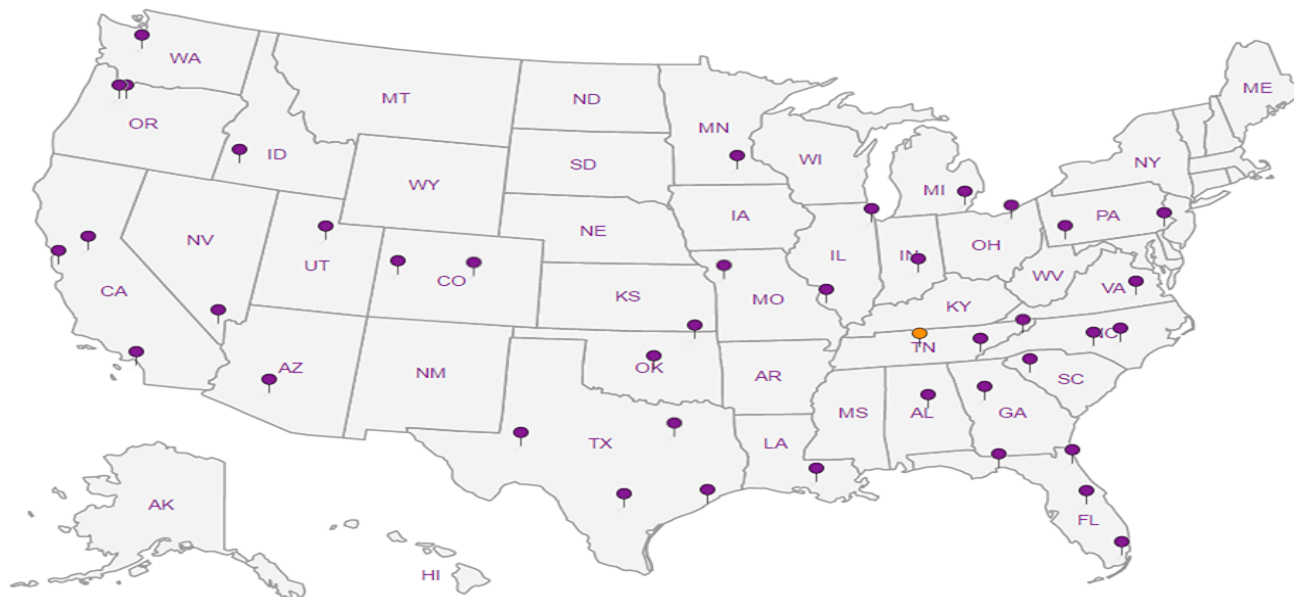
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Jared Morrison
December 20, 2022

ATTACHMENT 1-3
May 2019 Sampling Event Laboratory Report

SCS Engineers - KS

Sample Delivery Group: L1102016
Samples Received: 05/23/2019
Project Number: 27213168.19
Description: KCPL - Montrose Generating Station

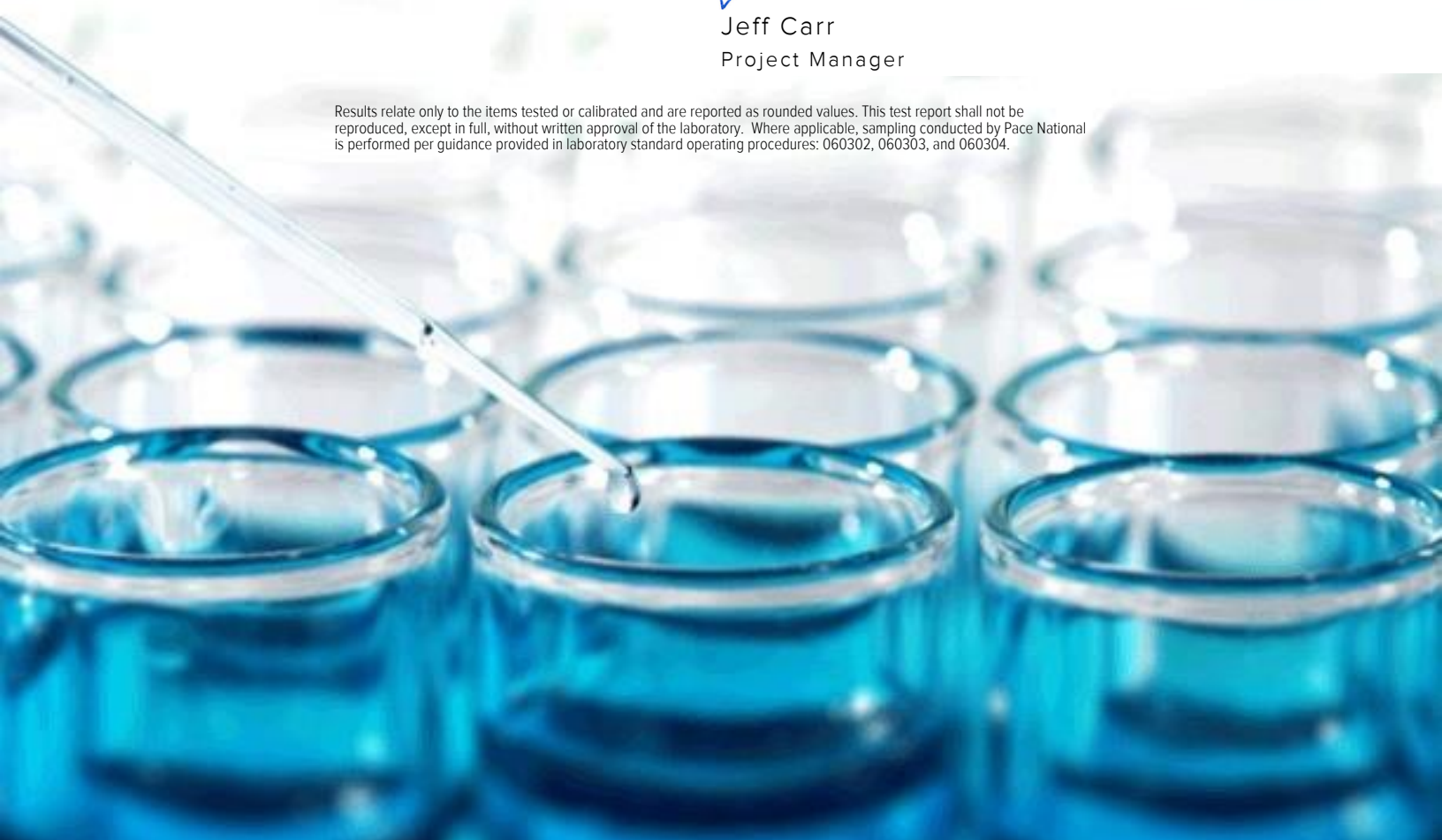
Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:



Jeff Carr
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





Cp: Cover Page	1	¹Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	²Tc
Cn: Case Narrative	5	
Sr: Sample Results	6	³Ss
MW-601 L1102016-01	6	
MW-602 L1102016-02	7	⁴Cn
MW-603 L1102016-03	8	⁵Sr
MW-604 L1102016-04	9	
MW-605 L1102016-05	10	⁶Qc
MW-701 L1102016-06	11	
MW-702 L1102016-07	12	⁷Gl
MW-703 L1102016-08	13	⁸Al
MW-704 L1102016-09	14	
MW-705 L1102016-10	15	⁹Sc
MW-706 L1102016-11	16	
DUPLICATE 2 L1102016-12	17	
Qc: Quality Control Summary	18	
Gravimetric Analysis by Method 2540 C-2011	18	
Wet Chemistry by Method 9056A	20	
Metals (ICP) by Method 6010B	22	
Gl: Glossary of Terms	23	
Al: Accreditations & Locations	24	
Sc: Sample Chain of Custody	25	

SAMPLE SUMMARY



MW-601 L1102016-01 GW

Collected by Jason R Franks
Collected date/time 05/21/19 12:25
Received date/time 05/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1287261	1	05/28/19 19:21	05/28/19 19:50	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	1	06/01/19 11:32	06/01/19 11:32	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	100	06/01/19 11:45	06/01/19 11:45	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1286048	1	05/29/19 07:39	05/31/19 18:07	CCE	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

MW-602 L1102016-02 GW

Collected by Jason R Franks
Collected date/time 05/21/19 12:25
Received date/time 05/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1287261	1	05/28/19 19:21	05/28/19 19:50	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	1	06/01/19 12:00	06/01/19 12:00	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	50	06/01/19 12:14	06/01/19 12:14	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1286048	1	05/29/19 07:39	05/31/19 18:10	CCE	Mt. Juliet, TN

MW-603 L1102016-03 GW

Collected by Jason R Franks
Collected date/time 05/21/19 14:00
Received date/time 05/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1287262	1	05/28/19 18:11	05/28/19 18:33	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	1	06/01/19 12:29	06/01/19 12:29	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	100	06/01/19 13:47	06/01/19 13:47	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1286048	1	05/29/19 07:39	05/31/19 17:56	CCE	Mt. Juliet, TN

MW-604 L1102016-04 GW

Collected by Jason R Franks
Collected date/time 05/21/19 13:20
Received date/time 05/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1287262	1	05/28/19 18:11	05/28/19 18:33	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	1	06/01/19 14:02	06/01/19 14:02	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	100	06/01/19 14:16	06/01/19 14:16	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1286048	1	05/29/19 07:39	05/31/19 18:13	CCE	Mt. Juliet, TN

MW-605 L1102016-05 GW

Collected by Jason R Franks
Collected date/time 05/21/19 12:35
Received date/time 05/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1287262	1	05/28/19 18:11	05/28/19 18:33	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	1	06/01/19 14:30	06/01/19 14:30	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	100	06/01/19 14:45	06/01/19 14:45	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1286048	1	05/29/19 07:39	05/31/19 18:21	CCE	Mt. Juliet, TN

MW-701 L1102016-06 GW

Collected by Jason R Franks
Collected date/time 05/21/19 15:00
Received date/time 05/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1287262	1	05/28/19 18:11	05/28/19 18:33	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	1	06/01/19 14:59	06/01/19 14:59	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	100	06/01/19 15:14	06/01/19 15:14	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1286048	1	05/29/19 07:39	05/31/19 18:24	CCE	Mt. Juliet, TN

SAMPLE SUMMARY



MW-702 L1102016-07 GW

Collected by Jason R Franks
Collected date/time 05/21/19 15:35
Received date/time 05/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1287262	1	05/28/19 18:11	05/28/19 18:33	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	1	06/01/19 15:28	06/01/19 15:28	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	50	06/01/19 15:42	06/01/19 15:42	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1286048	1	05/29/19 07:39	05/31/19 18:27	CCE	Mt. Juliet, TN

- 1
Cp
- 2
Tc
- 3
Ss
- 4
Cn
- 5
Sr
- 6
Qc
- 7
Gl
- 8
Al
- 9
Sc

MW-703 L1102016-08 GW

Collected by Jason R Franks
Collected date/time 05/21/19 12:00
Received date/time 05/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1287262	1	05/28/19 18:11	05/28/19 18:33	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	1	06/01/19 15:57	06/01/19 15:57	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	20	06/01/19 16:40	06/01/19 16:40	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1286048	1	05/29/19 07:39	05/31/19 18:29	CCE	Mt. Juliet, TN

MW-704 L1102016-09 GW

Collected by Jason R Franks
Collected date/time 05/21/19 15:50
Received date/time 05/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1287262	1	05/28/19 18:11	05/28/19 18:33	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	1	06/01/19 16:55	06/01/19 16:55	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	20	06/01/19 17:09	06/01/19 17:09	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1286048	1	05/29/19 07:39	05/31/19 18:32	CCE	Mt. Juliet, TN

MW-705 L1102016-10 GW

Collected by Jason R Franks
Collected date/time 05/21/19 16:15
Received date/time 05/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1287262	1	05/28/19 18:11	05/28/19 18:33	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	1	06/01/19 17:23	06/01/19 17:23	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	10	06/01/19 17:52	06/01/19 17:52	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1286048	1	05/29/19 07:39	05/31/19 18:35	CCE	Mt. Juliet, TN

MW-706 L1102016-11 GW

Collected by Jason R Franks
Collected date/time 05/21/19 16:10
Received date/time 05/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1287262	1	05/28/19 18:11	05/28/19 18:33	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	1	06/01/19 18:21	06/01/19 18:21	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	20	06/01/19 18:35	06/01/19 18:35	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1286048	1	05/29/19 07:39	05/31/19 18:37	CCE	Mt. Juliet, TN

DUPLICATE 2 L1102016-12 GW

Collected by Jason R Franks
Collected date/time 05/21/19 14:00
Received date/time 05/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1287262	1	05/28/19 18:11	05/28/19 18:33	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	1	06/01/19 18:50	06/01/19 18:50	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287708	100	06/01/19 19:33	06/01/19 19:33	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1286048	1	05/29/19 07:39	05/31/19 18:40	CCE	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	4410000		50000	1	05/28/2019 19:50	WG1287261

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	55500		1000	1	06/01/2019 11:32	WG1287708
Fluoride	487		100	1	06/01/2019 11:32	WG1287708
Sulfate	3230000		500000	100	06/01/2019 11:45	WG1287708

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	05/31/2019 18:07	WG1286048
Calcium	472000		1000	1	05/31/2019 18:07	WG1286048

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	1870000		25000	1	05/28/2019 19:50	WG1287261

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	410		1000	1	06/01/2019 12:00	WG1287708
Fluoride	132		100	1	06/01/2019 12:00	WG1287708
Sulfate	1260000		250000	50	06/01/2019 12:14	WG1287708

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	4480		200	1	05/31/2019 18:10	WG1286048
Calcium	342000		1000	1	05/31/2019 18:10	WG1286048

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2990000	J3	50000	1	05/28/2019 18:33	WG1287262

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	8240		1000	1	06/01/2019 12:29	WG1287708
Fluoride	365		100	1	06/01/2019 12:29	WG1287708
Sulfate	2480000		500000	100	06/01/2019 13:47	WG1287708

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	7350	O1	200	1	05/31/2019 17:56	WG1286048
Calcium	429000	O1V	1000	1	05/31/2019 17:56	WG1286048

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	3270000		50000	1	05/28/2019 18:33	WG1287262

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	15500		1000	1	06/01/2019 14:02	WG1287708
Fluoride	519		100	1	06/01/2019 14:02	WG1287708
Sulfate	2090000		500000	100	06/01/2019 14:16	WG1287708

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	4860		200	1	05/31/2019 18:13	WG1286048
Calcium	476000		1000	1	05/31/2019 18:13	WG1286048

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2810000		50000	1	05/28/2019 18:33	WG1287262

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	55400		1000	1	06/01/2019 14:30	WG1287708
Fluoride	222		100	1	06/01/2019 14:30	WG1287708
Sulfate	1970000		500000	100	06/01/2019 14:45	WG1287708

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	1650		200	1	05/31/2019 18:21	WG1286048
Calcium	416000		1000	1	05/31/2019 18:21	WG1286048

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2930000		50000	1	05/28/2019 18:33	WG1287262

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	355000		100000	100	06/01/2019 15:14	WG1287708
Fluoride	1170		100	1	06/01/2019 14:59	WG1287708
Sulfate	2080000		500000	100	06/01/2019 15:14	WG1287708

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	05/31/2019 18:24	WG1286048
Calcium	402000		1000	1	05/31/2019 18:24	WG1286048

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	3010000		50000	1	05/28/2019 18:33	WG1287262

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	271000		50000	50	06/01/2019 15:42	WG1287708
Fluoride	243		100	1	06/01/2019 15:28	WG1287708
Sulfate	1510000		250000	50	06/01/2019 15:42	WG1287708

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	05/31/2019 18:27	WG1286048
Calcium	450000		1000	1	05/31/2019 18:27	WG1286048

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	1410000		20000	1	05/28/2019 18:33	WG1287262

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	16500		1000	1	06/01/2019 15:57	WG1287708
Fluoride	157		100	1	06/01/2019 15:57	WG1287708
Sulfate	988000		100000	20	06/01/2019 16:40	WG1287708

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	05/31/2019 18:29	WG1286048
Calcium	226000		1000	1	05/31/2019 18:29	WG1286048

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	1120000		20000	1	05/28/2019 18:33	WG1287262

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	4170		1000	1	06/01/2019 16:55	WG1287708
Fluoride	204		100	1	06/01/2019 16:55	WG1287708
Sulfate	786000		100000	20	06/01/2019 17:09	WG1287708

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	05/31/2019 18:32	WG1286048
Calcium	159000		1000	1	05/31/2019 18:32	WG1286048

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	1210000		20000	1	05/28/2019 18:33	WG1287262

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	13300		1000	1	06/01/2019 17:23	WG1287708
Fluoride	202		100	1	06/01/2019 17:23	WG1287708
Sulfate	741000		50000	10	06/01/2019 17:52	WG1287708

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	05/31/2019 18:35	WG1286048
Calcium	162000		1000	1	05/31/2019 18:35	WG1286048

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	1770000		25000	1	05/28/2019 18:33	WG1287262

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	31500		1000	1	06/01/2019 18:21	WG1287708
Fluoride	135		100	1	06/01/2019 18:21	WG1287708
Sulfate	1280000		100000	20	06/01/2019 18:35	WG1287708

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	282		200	1	05/31/2019 18:37	WG1286048
Calcium	278000		1000	1	05/31/2019 18:37	WG1286048

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	3920000		50000	1	05/28/2019 18:33	WG1287262

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	8230		1000	1	06/01/2019 18:50	WG1287708
Fluoride	378		100	1	06/01/2019 18:50	WG1287708
Sulfate	2460000		500000	100	06/01/2019 19:33	WG1287708

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	7230		200	1	05/31/2019 18:40	WG1286048
Calcium	430000		1000	1	05/31/2019 18:40	WG1286048

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3416327-1 05/28/19 19:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		2820	10000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

L1099549-23 Original Sample (OS) • Duplicate (DUP)

(OS) L1099549-23 05/28/19 19:50 • (DUP) R3416327-3 05/28/19 19:50

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	480000	520000	1	8.00	J3	5

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS)

(LCS) R3416327-2 05/28/19 19:50

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8720000	99.1	85.0-115	



Method Blank (MB)

(MB) R3416367-1 05/28/19 18:33

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

L1102016-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1102016-03 05/28/19 18:33 • (DUP) R3416367-3 05/28/19 18:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	2990000	3260000	1	8.81	J3	5

Laboratory Control Sample (LCS)

(LCS) R3416367-2 05/28/19 18:33

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Dissolved Solids	8800000	8550000	97.2	85.0-115	

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3416973-1 06/01/19 08:27

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000
Fluoride	U		9.90	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1102016-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1102016-10 06/01/19 17:23 • (DUP) R3416973-5 06/01/19 17:38

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	13300	13300	1	0.0654		15
Fluoride	202	206	1	2.35		15

L1102016-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1102016-10 06/01/19 17:52 • (DUP) R3416973-6 06/01/19 18:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	741000	742000	10	0.0191		15

L1102021-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1102021-01 06/01/19 23:38 • (DUP) R3416973-7 06/01/19 23:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	ND	350	1	0.000		15
Fluoride	201	187	1	6.96		15
Sulfate	ND	0.000	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3416973-2 06/01/19 08:41

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	40300	101	80.0-120	
Fluoride	8000	8200	103	80.0-120	
Sulfate	40000	40900	102	80.0-120	



L1102016-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1102016-03 06/01/19 12:29 • (MS) R3416973-3 06/01/19 12:43 • (MSD) R3416973-4 06/01/19 13:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	8240	60500	60600	105	105	1	80.0-120			0.0705	15
Fluoride	5000	365	5300	5280	98.7	98.2	1	80.0-120			0.444	15
Sulfate	50000	2190000	2120000	2130000	0.000	0.000	1	80.0-120	EV	EV	0.186	15

L1102021-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1102021-01 06/01/19 23:38 • (MS) R3416973-8 06/02/19 00:07 • (MSD) R3416973-9 06/02/19 00:21

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	ND	52400	52600	104	104	1	80.0-120			0.373	15
Fluoride	5000	201	5420	5450	104	105	1	80.0-120			0.576	15
Sulfate	50000	ND	51200	51500	102	103	1	80.0-120			0.593	15

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3417058-1 05/31/19 17:48

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		12.6	200
Calcium	U		46.3	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3417058-2 05/31/19 17:51 • (LCSD) R3417058-3 05/31/19 17:53

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Boron	1000	1010	1010	101	101	80.0-120			0.119	20
Calcium	10000	10100	10100	101	101	80.0-120			0.589	20

L1102016-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1102016-03 05/31/19 17:56 • (MS) R3417058-5 05/31/19 18:01 • (MSD) R3417058-6 05/31/19 18:04

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	7350	8200	8120	84.6	77.0	1	75.0-125			0.941	20
Calcium	10000	429000	430000	428000	12.6	0.000	1	75.0-125	V	V	0.304	20



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J3	The associated batch QC was outside the established quality control range for precision.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

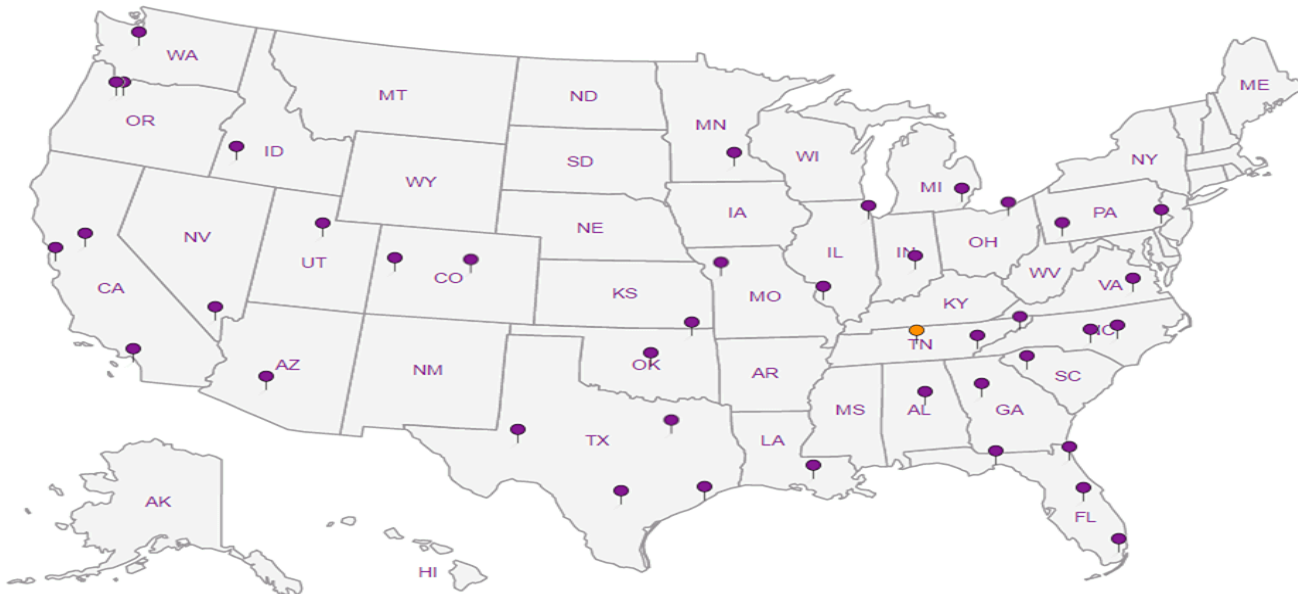
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 2



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Jason Franks

Email To: jfranks@scsengineers.com;
jay.martin@kcpl.com;

Project
Description: **KCPL - Montrose Generating Station**

City/State
Collected: **Montrose, MO**

Phone: 913-681-0030
Fax: 913-681-0012

Client Project #
27213168.18

Lab Project #
AQUAOPKS-MONTROSE

Collected by (print):
Jason R. Franks

Site/Facility ID #

P.O. #

Collected by (signature):
Jason R. Franks

Rush? (Lab MUST Be Notified)

Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #

Date Results Needed

Immediately
Packed on Ice N Y

No.
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cl, F, SO4)	B, Ca	TDS	125mlHDPE-NoPres	250mlHDPE-HNO3	250mlHDPE-NoPres
MW-601	GRAB	GW	-	5/21/19	1225	3	X	X	X			
MW-602		GW	-		1225	3	X	X	X			
MW-603		GW	-		1400	3	X	X	X			
MW-604		GW	-		1320	3	X	X	X			
MW-605		GW	-		1235	3	X	X	X			
MW-701		GW	-		1500	3	X	X	X			
MW-702		GW	-		1535	3	X	X	X			
MW-703		GW	-		1200	3	X	X	X			
MW-704		GW	-		1550	3	X	X	X			
MW-705		GW	-		1615	3	X	X	X			

L# **1102016**

F121

Acctnum: **AQUAOPKS**

Template: **T135966**

Prelogin: **P709140**

TSR: **206 - Jeff Carr**

PB:

Shipped Via:

Remarks Sample # (lab only)

-01
-02
-03
-04
-05
-06
-07
-08
-09
-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:
 UPS FedEx Courier **SWA**

Tracking #

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero HeadSpace: Y N
Preservation Correct/Checked: Y N

Relinquished by: (Signature)
Jason R. Franks

Date: **5/22/19**

Time: **1130**

Received by: (Signature)
SWA

Trip Blank Received: Yes/No
HCL / MeOH
TBR

Relinquished by: (Signature)
SWA

Date: **5/22/19**

Time: **1700**

Received by: (Signature)
SWA

1.21.0
0.2

Temp: **1.72 ± 0.1 °C**
1.72 ± 0.1 °C
Bottles Received: **39**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)
OK Farris

Date: **5/23/19** Time: **0800**

Hold:

Condition:
NCF / OK

SCS Engineers - KS

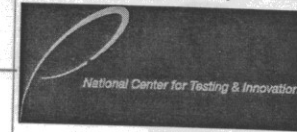
8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 2 of 2



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Jason Franks

Email To: jfranks@scsengineers.com;
jay.martin@kcpl.com;

Project
Description: **KCPL - Montrose Generating Station**

City/State
Collected: **MONTROSE, MO**
Lab Project #
AQUAOPKS-MONTROSE

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project #
27213168.18

Collected by (print):
Jason R Franks

Site/Facility ID #

P.O. #

Collected by (signature):
Jason R Franks

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
Date Results Needed

Immediately
Packed on Ice N Y

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cl, F, SO4)	125mIHDPE-NoPres	B, Ca - 6010 250mIHDPE-HNO3	TDS 250mIHDPE-NoPres								
MW-706	GRAB	GW	-	5/21/19	1610	3	X	X	X									
1003 MS/MSD	↓	GW	-	5/21/19	1400	3	X	X	X									-11
MSD		GW	-			3	X	X	X									-03
DUPLICATE		GW	-	5/21/19	1400	3	X	X	X									

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 Samples returned via:
 UPS FedEx Courier **SWA**

pH _____ Temp _____
 Flow _____ Other _____

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headpace: Y N
 Preservation Correct/Checked: Y N

Relinquished by: (Signature) **Jason R Franks** Date: **5/22/19** Time: **1130**
 Relinquished by: (Signature) **[Signature]** Date: **5/22/19** Time: **1700**
 Relinquished by: (Signature) _____ Date: _____ Time: _____

Received by: (Signature) **[Signature]** Trip Blank Received: Yes/No HCL / MeOH TBR
 Received by: (Signature) **SWA** Temp: **1.22.0** Bottles Received: **39**
 Received for lab by: (Signature) **[Signature]** Date: **5/23/19** Time: **0800**

If preservation required by Login: Date/Time
 Hold: _____ Condition: **NCF / OK**

SCS Engineers - KS

Sample Delivery Group: L1102009
Samples Received: 05/23/2019
Project Number: 27213168.18
Description: KCPL - Montrose Generating Station

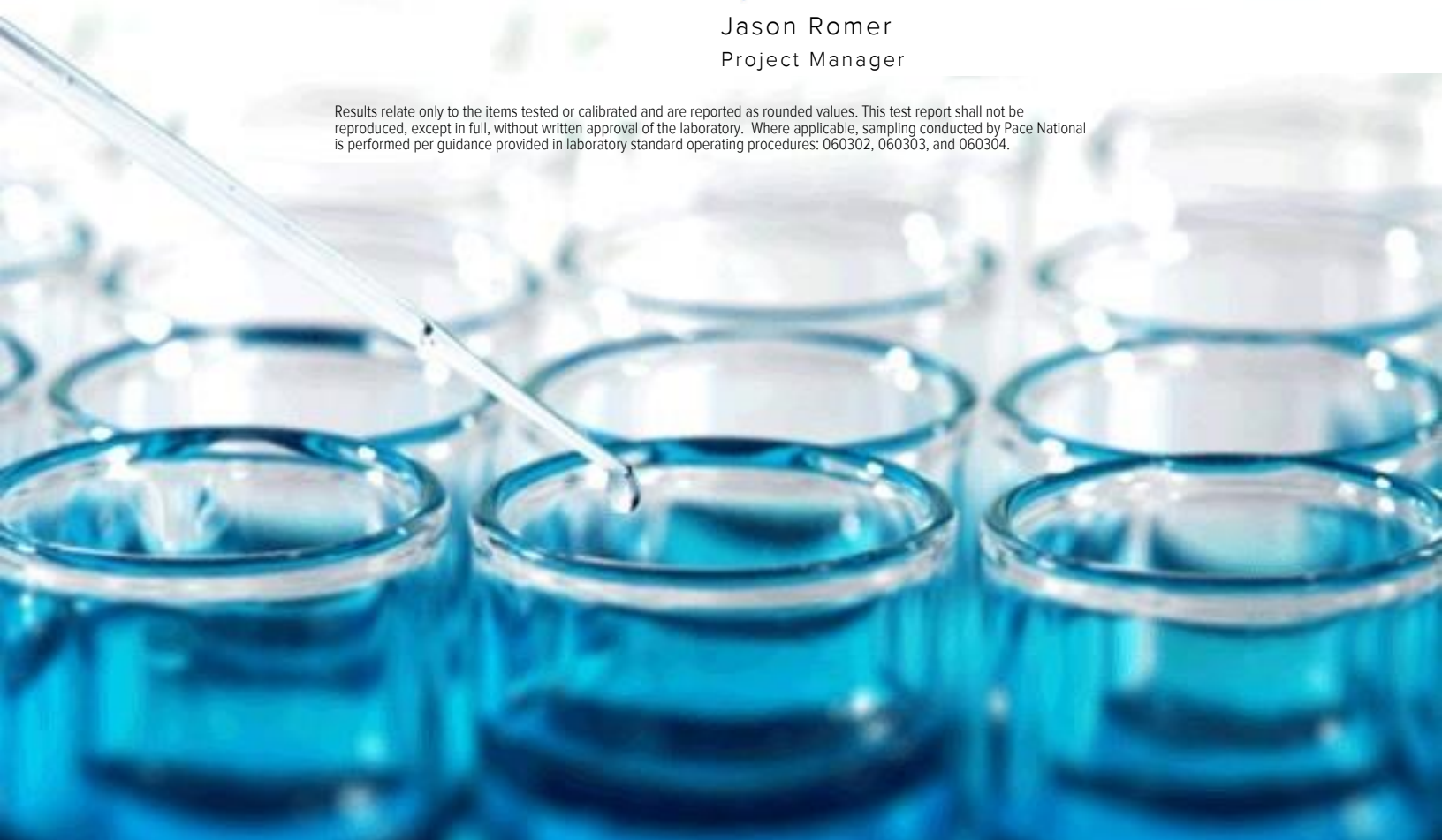
Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:



Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





Cp: Cover Page	1	¹Cp
Tc: Table of Contents	2	²Tc
Ss: Sample Summary	3	³Ss
Cn: Case Narrative	4	⁴Cn
Sr: Sample Results	5	⁵Sr
MW-506 L1102009-01	5	
DUPLICATE L1102009-02	6	
Qc: Quality Control Summary	7	⁶Qc
Gravimetric Analysis by Method 2540 C-2011	7	
Wet Chemistry by Method 9056A	8	
Metals (ICP) by Method 6010B	10	
Gl: Glossary of Terms	11	⁷Gl
Al: Accreditations & Locations	12	⁸Al
Sc: Sample Chain of Custody	13	⁹Sc

SAMPLE SUMMARY

MW-506 L1102009-01 GW

Collected by Jason R. Frank
 Collected date/time 05/21/19 13:00
 Received date/time 05/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1287261	1	05/28/19 19:21	05/28/19 19:50	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287703	1	05/30/19 18:04	05/30/19 18:04	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287703	50	05/30/19 18:37	05/30/19 18:37	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1286047	1	05/24/19 10:04	05/25/19 00:05	TRB	Mt. Juliet, TN

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

DUPLICATE L1102009-02 GW

Collected by Jason R. Frank
 Collected date/time 05/21/19 13:00
 Received date/time 05/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1287261	1	05/28/19 19:21	05/28/19 19:50	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287703	1	05/30/19 18:48	05/30/19 18:48	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1287703	50	05/30/19 18:59	05/30/19 18:59	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1286047	1	05/24/19 10:04	05/24/19 22:53	TRB	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2460000		50000	1	05/28/2019 19:50	WG1287261

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	76000		1000	1	05/30/2019 18:04	WG1287703
Fluoride	108		100	1	05/30/2019 18:04	WG1287703
Sulfate	2130000		250000	50	05/30/2019 18:37	WG1287703

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	05/25/2019 00:05	WG1286047
Calcium	357000		1000	1	05/25/2019 00:05	WG1286047

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 05/21/19 13:00

L1102009

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2920000		50000	1	05/28/2019 19:50	WG1287261

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	77400		1000	1	05/30/2019 18:48	WG1287703
Fluoride	116		100	1	05/30/2019 18:48	WG1287703
Sulfate	1790000		250000	50	05/30/2019 18:59	WG1287703

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	05/24/2019 22:53	WG1286047
Calcium	359000	<u>V</u>	1000	1	05/24/2019 22:53	WG1286047

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3416327-1 05/28/19 19:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		2820	10000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1099549-23 Original Sample (OS) • Duplicate (DUP)

(OS) L1099549-23 05/28/19 19:50 • (DUP) R3416327-3 05/28/19 19:50

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	480000	520000	1	8.00	<u>J3</u>	5

Laboratory Control Sample (LCS)

(LCS) R3416327-2 05/28/19 19:50

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8720000	99.1	85.0-115	



Method Blank (MB)

(MB) R3416506-1 05/30/19 12:44

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Fluoride	U		9.90	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1101801-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1101801-03 05/30/19 14:16 • (DUP) R3416506-3 05/30/19 14:27

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	39300	39200	1	0.249		15
Fluoride	638	642	1	0.641		15
Sulfate	32600	32800	1	0.864		15

L1101857-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1101857-05 05/30/19 17:42 • (DUP) R3416506-5 05/30/19 17:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	1810	1790	1	1.05		15
Fluoride	ND	72.7	1	1.64	J	15
Sulfate	ND	1730	1	3.77	J	15

Laboratory Control Sample (LCS)

(LCS) R3416506-2 05/30/19 12:54

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	40800	102	80.0-120	
Fluoride	8000	8710	109	80.0-120	
Sulfate	40000	41400	103	80.0-120	



L1101801-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1101801-03 05/30/19 14:16 • (MS) R3416506-4 05/30/19 14:37

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	50000	39300	88800	98.9	1	80.0-120	
Fluoride	5000	638	5460	96.5	1	80.0-120	
Sulfate	50000	32600	84000	103	1	80.0-120	

L1102009-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1102009-01 05/30/19 18:04 • (MS) R3416506-6 05/30/19 18:15 • (MSD) R3416506-7 05/30/19 18:26

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	50000	76000	124000	127000	95.9	101	1	80.0-120	<u>E</u>	<u>E</u>	2.09	15
Fluoride	5000	108	4840	5010	94.7	98.1	1	80.0-120			3.47	15
Sulfate	50000	1600000	1610000	1630000	36.0	74.0	1	80.0-120	<u>E V</u>	<u>E V</u>	1.17	15

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3414885-1 05/24/19 22:45

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		12.6	200
Calcium	U		46.3	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3414885-2 05/24/19 22:48 • (LCSD) R3414885-3 05/24/19 22:51

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Boron	1000	949	974	94.9	97.4	80.0-120			2.53	20
Calcium	10000	9860	9910	98.6	99.1	80.0-120			0.494	20

L1102009-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1102009-02 05/24/19 22:53 • (MS) R3414885-5 05/24/19 22:59 • (MSD) R3414885-6 05/24/19 23:02

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	ND	1040	1070	95.1	98.0	1	75.0-125			2.72	20
Calcium	10000	359000	358000	360000	0.000	7.21	1	75.0-125	V	V	0.532	20



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

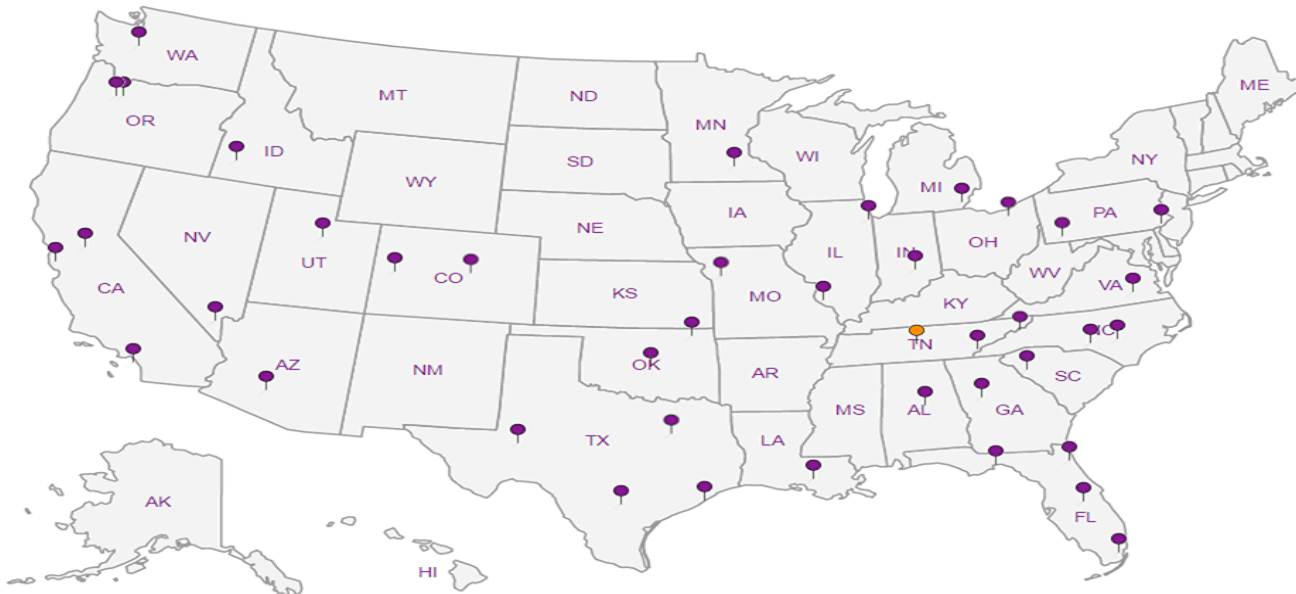
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Jared Morrison
December 20, 2022

ATTACHMENT 1-4
July 2019 Sampling Event Laboratory Report

July 24, 2019

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SCS Engineers - KS

Sample Delivery Group: L1118897
Samples Received: 07/16/2019
Project Number: 27213168.18
Description: KCPL - Montrose Generating Station

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210










Entire Report Reviewed By:



Jeff Carr
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Cp: Cover Page	1	
Tc: Table of Contents	2	
Ss: Sample Summary	3	
Cn: Case Narrative	4	
Sr: Sample Results	5	
MW-601 L1118897-01	5	
MW-603 L1118897-02	6	
MW-604 L1118897-03	7	
DUPLCATE 1 L1118897-04	8	
MW-605 L1118897-05	9	
MW-706 L1118897-06	10	
DUPLICATE 2 L1118897-07	11	
Qc: Quality Control Summary	12	
Gravimetric Analysis by Method 2540 C-2011	12	
Wet Chemistry by Method 9056A	13	
Metals (ICP) by Method 6010B	16	
Gl: Glossary of Terms	17	
Al: Accreditations & Locations	18	
Sc: Sample Chain of Custody	19	

SAMPLE SUMMARY



MW-601 L1118897-01 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1314688	5	07/22/19 09:28	07/22/19 09:28	ST	Mt. Juliet, TN

Collected by Whit Martin
 Collected date/time 07/15/19 10:35
 Received date/time 07/16/19 08:45

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

MW-603 L1118897-02 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1314688	5	07/22/19 09:42	07/22/19 09:42	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1312461	1	07/16/19 22:03	07/17/19 10:45	TRB	Mt. Juliet, TN

Collected by Whit Martin
 Collected date/time 07/15/19 11:20
 Received date/time 07/16/19 08:45

MW-604 L1118897-03 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1312373	1	07/17/19 08:09	07/17/19 08:24	TH	Mt. Juliet, TN

Collected by Whit Martin
 Collected date/time 07/15/19 12:00
 Received date/time 07/16/19 08:45

DUPLICATE 1 L1118897-04 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1312373	1	07/17/19 08:09	07/17/19 08:24	TH	Mt. Juliet, TN

Collected by Whit Martin
 Collected date/time 07/15/19 00:00
 Received date/time 07/16/19 08:45

MW-605 L1118897-05 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1314706	1	07/22/19 01:36	07/22/19 01:36	ST	Mt. Juliet, TN

Collected by Whit Martin
 Collected date/time 07/15/19 12:40
 Received date/time 07/16/19 08:45

MW-706 L1118897-06 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1314706	1	07/22/19 02:10	07/22/19 02:10	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1314706	20	07/22/19 03:03	07/22/19 03:03	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1312461	1	07/16/19 22:03	07/17/19 09:52	TRB	Mt. Juliet, TN

Collected by Whit Martin
 Collected date/time 07/15/19 13:20
 Received date/time 07/16/19 08:45

DUPLICATE 2 L1118897-07 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1314706	1	07/22/19 03:21	07/22/19 03:21	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1314706	20	07/22/19 03:39	07/22/19 03:39	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1312461	1	07/16/19 22:03	07/17/19 10:47	TRB	Mt. Juliet, TN

Collected by Whit Martin
 Collected date/time 07/15/19 00:00
 Received date/time 07/16/19 08:45



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	56500		5000	5	07/22/2019 09:28	WG1314688

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	8750		5000	5	07/22/2019 09:42	WG1314688

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	6490		200	1	07/17/2019 10:45	WG1312461

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2680000		50000	1	07/17/2019 08:24	WG1312373

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2660000		50000	1	07/17/2019 08:24	WG1312373

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	57800		1000	1	07/22/2019 01:36	WG1314706

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	29900		1000	1	07/22/2019 02:10	WG1314706
Sulfate	1150000		100000	20	07/22/2019 03:03	WG1314706

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	234		200	1	07/17/2019 09:52	WG1312461

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	29900		1000	1	07/22/2019 03:21	WG1314706
Sulfate	1160000		100000	20	07/22/2019 03:39	WG1314706

1 Cp

2 Tc

3 Ss

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	245		200	1	07/17/2019 10:47	WG1312461

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3432060-1 07/17/19 08:24

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	11000		2820	10000

1 Cp

2 Tc

3 Ss

L1118897-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1118897-04 07/17/19 08:24 • (DUP) R3432060-3 07/17/19 08:24

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	2660000	2640000	1	0.756		5

4 Cn

5 Sr

Laboratory Control Sample (LCS)

(LCS) R3432060-2 07/17/19 08:24

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8910000	101	85.0-115	

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3432969-1 07/21/19 21:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1118662-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1118662-01 07/22/19 00:21 • (DUP) R3432969-3 07/22/19 00:35

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	56200	56100	1	0.264		15

L1118867-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1118867-01 07/22/19 06:49 • (DUP) R3432969-5 07/22/19 07:04

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	17700	17800	1	0.716		15

Laboratory Control Sample (LCS)

(LCS) R3432969-2 07/21/19 21:34

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39800	99.6	80.0-120	

L1118662-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1118662-01 07/22/19 00:21 • (MS) R3432969-4 07/22/19 00:49

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	56200	105000	97.0	1	80.0-120	E

L1118896-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1118896-07 07/22/19 08:45 • (MS) R3432969-6 07/22/19 08:59 • (MSD) R3432969-7 07/22/19 09:14

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	70900	118000	119000	94.6	96.4	1	80.0-120	E	E	0.722	15



Method Blank (MB)

(MB) R3432978-1 07/21/19 22:01

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000
Sulfate	U		77.4	5000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1118897-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1118897-05 07/22/19 01:36 • (DUP) R3432978-3 07/22/19 01:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	57800	57500	1	0.448		15
Sulfate	ND	0.000	1	0.000		15

L1119208-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1119208-01 07/22/19 08:38 • (DUP) R3432978-6 07/22/19 08:56

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	5850	5780	1	1.21		15
Sulfate	23100	24300	1	4.98		15

Laboratory Control Sample (LCS)

(LCS) R3432978-2 07/21/19 22:19

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	40000	100	80.0-120	
Sulfate	40000	39000	97.4	80.0-120	

L1118897-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1118897-06 07/22/19 02:10 • (MS) R3432978-4 07/22/19 02:28 • (MSD) R3432978-5 07/22/19 02:46

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	29900	80600	81000	101	102	1	80.0-120			0.524	15
Sulfate	50000	1130000	1110000	1110000	0.000	0.000	1	80.0-120	<u>E V</u>	<u>E V</u>	0.276	15



L1119208-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1119208-01 07/22/19 08:38 • (MS) R3432978-7 07/22/19 09:13

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	50000	5850	55600	99.4	1	80.0-120	
Sulfate	50000	23100	70900	95.6	1	80.0-120	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3431497-1 07/17/19 09:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		12.6	200

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3431497-2 07/17/19 09:47 • (LCSD) R3431497-3 07/17/19 09:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Boron	1000	1000	1010	100	101	80.0-120			0.339	20

L1118897-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1118897-06 07/17/19 09:52 • (MS) R3431497-5 07/17/19 09:57 • (MSD) R3431497-6 07/17/19 09:59

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	234	1270	1250	104	102	1	75.0-125			2.03	20



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

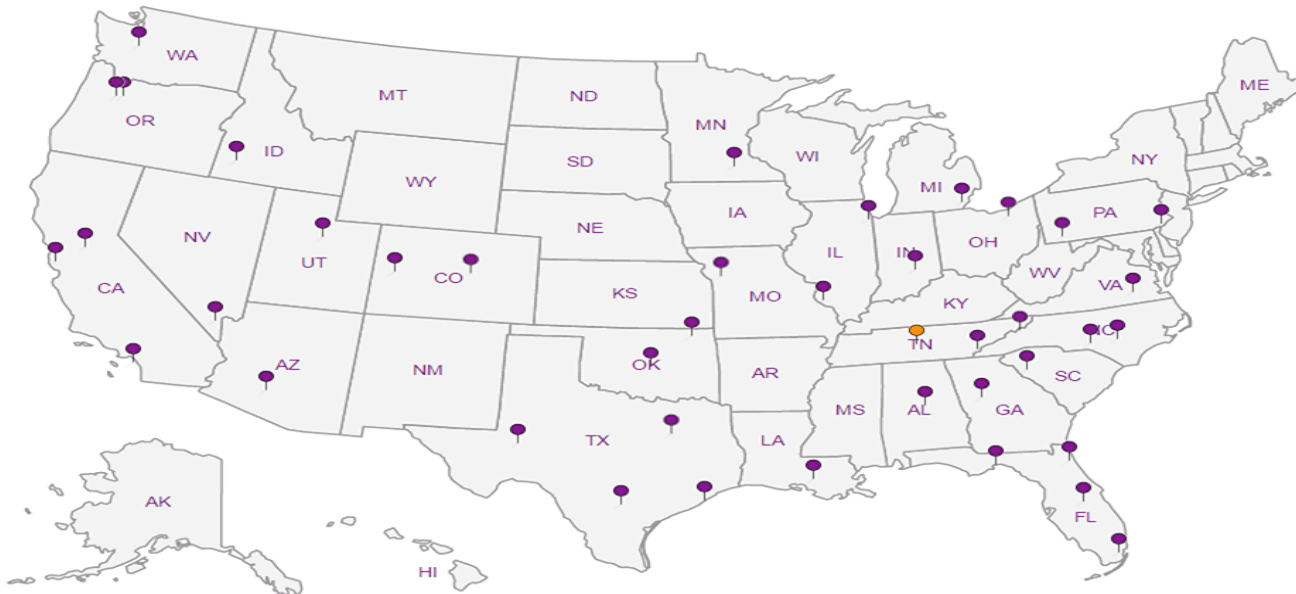
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SCS Engineers - KS

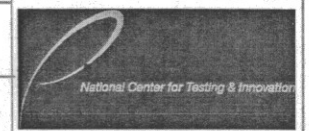
8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Jason Franks

Email To: jfranks@scsengineers.com;
jay.martin@kcpl.com;

Project
Description: **KCPL - Montrose Generating Station**

City/State
Collected: **Montrose, MO**

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project #
27213168.18

Lab Project #
AQUAOPKS-MONTROSE

Collected by (print):
Whit Martin

Site/Facility ID #

P.O. #

Collected by (signature):
Whit Martin

Rush? (Lab MUST Be Notified)

Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #

Date Results Needed

Std

Immediately
Packed on Ice N Y

No.
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron - 6010 250mlHDPE-HNO3	Chloride 125mlHDPE-NoPres	Chloride, SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-601	Grab	GW		7/15/19	1035	1		X				-01
MW-603	Grab	GW		7/15/19	1120	2	X	X				02
MW-604	Grab	GW		7/15/19	1200	1			X			03
DUPLICATE 1	Grab	GW		7/15/19	-	1			X			04
MW-605	Grab	GW		7/15/19	1240	1		X				05
MW-706	Grab	GW		7/15/19	1320	2	X		X			06
MW-706 MS / MSD	Grab	GW		7/15/19	1325	2	X		X			06
DUPLICATE 2	Grab	GW		7/15/19	-	2	X		X			07
MW-604 MS/MSD	Grab	GW		7/15/19	1205	1			X			03

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:
 UPS FedEx Courier

Tracking # **4794 8839 2437**

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

RAD SCREEN: <0.5 mR/hr

Relinquished by: (Signature)

Whit Martin

Date:

7/15/19

Time:

1540

Received by: (Signature)

Jim Bull

Trip Blank Received: Yes / No

HCL / MeOH
TBR

Relinquished by: (Signature)

Jim Bull

Date:

7/15/19

Time:

1800

Received by: (Signature)

FEDEx

Temp: **13.0F °C**

2.4 ± 1 = 2.5

Bottles Received:

15

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Jim Bull

Date:

7/26/19

Time:

0845

Received for lab by: (Signature)

Jim Fair

Date:

7/26/19

Time:

0845

Hold:

Condition:

NCF **OK**

Jared Morrison
December 20, 2022

ATTACHMENT 1-5
August 2019 Sampling Event Laboratory Report

SCS Engineers - KS

Sample Delivery Group: L1131383
Samples Received: 08/21/2019
Project Number: 27213168.18
Description: KCPL - Montrose Generating Station

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:



Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1	¹Cp
Tc: Table of Contents	2	²Tc
Ss: Sample Summary	3	³Ss
Cn: Case Narrative	4	⁴Cn
Sr: Sample Results	5	⁵Sr
MW-601 L1131383-01	5	
MW-603 L1131383-02	6	
MW-605 L1131383-03	7	
DUPLICATE L1131383-04	8	
Qc: Quality Control Summary	9	⁶Qc
Wet Chemistry by Method 9056A	9	
Gl: Glossary of Terms	11	⁷Gl
Al: Accreditations & Locations	12	⁸Al
Sc: Sample Chain of Custody	13	⁹Sc

SAMPLE SUMMARY



MW-601 L1131383-01 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1332945	1	08/22/19 17:21	08/22/19 17:21	ST	Mt. Juliet, TN

Collected by Whit Martin
 Collected date/time 08/19/19 12:20
 Received date/time 08/21/19 08:45

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

MW-603 L1131383-02 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1332945	1	08/22/19 17:38	08/22/19 17:38	ST	Mt. Juliet, TN

Collected by Whit Martin
 Collected date/time 08/19/19 13:00
 Received date/time 08/21/19 08:45

MW-605 L1131383-03 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1332945	1	08/22/19 17:54	08/22/19 17:54	ST	Mt. Juliet, TN

Collected by Whit Martin
 Collected date/time 08/19/19 13:30
 Received date/time 08/21/19 08:45

DUPLICATE L1131383-04 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1332945	1	08/22/19 18:43	08/22/19 18:43	ST	Mt. Juliet, TN

Collected by Whit Martin
 Collected date/time 08/19/19 13:30
 Received date/time 08/21/19 08:45



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	54500		1000	1	08/22/2019 17:21	WG1332945

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	6540		1000	1	08/22/2019 17:38	WG1332945

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	57900		1000	1	08/22/2019 17:54	WG1332945

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	57900		1000	1	08/22/2019 18:43	WG1332945

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3443434-1 08/22/19 08:27

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1131208-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1131208-01 08/22/19 11:20 • (DUP) R3443434-3 08/22/19 11:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	4780	4890	1	2.36		15

L1131383-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1131383-04 08/22/19 18:43 • (DUP) R3443434-10 08/22/19 19:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	57900	57800	1	0.213		15

Laboratory Control Sample (LCS)

(LCS) R3443434-2 08/22/19 08:44

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39100	97.8	80.0-120	

L1131379-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1131379-02 08/22/19 14:21 • (MS) R3443434-4 08/22/19 14:37 • (MSD) R3443434-5 08/22/19 14:54

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	1270	51600	51000	101	99.5	1	80.0-120			1.11	15

L1131379-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1131379-04 08/22/19 15:26 • (MS) R3443434-6 08/22/19 15:43 • (MSD) R3443434-7 08/22/19 15:59

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	28700	78700	79000	100	101	1	80.0-120			0.353	15



L1131383-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1131383-03 08/22/19 17:54 • (MS) R3443434-8 08/22/19 18:11 • (MSD) R3443434-9 08/22/19 18:27

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	57900	106000	106000	96.7	96.9	1	80.0-120	E	E	0.108	15

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier Description

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
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Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

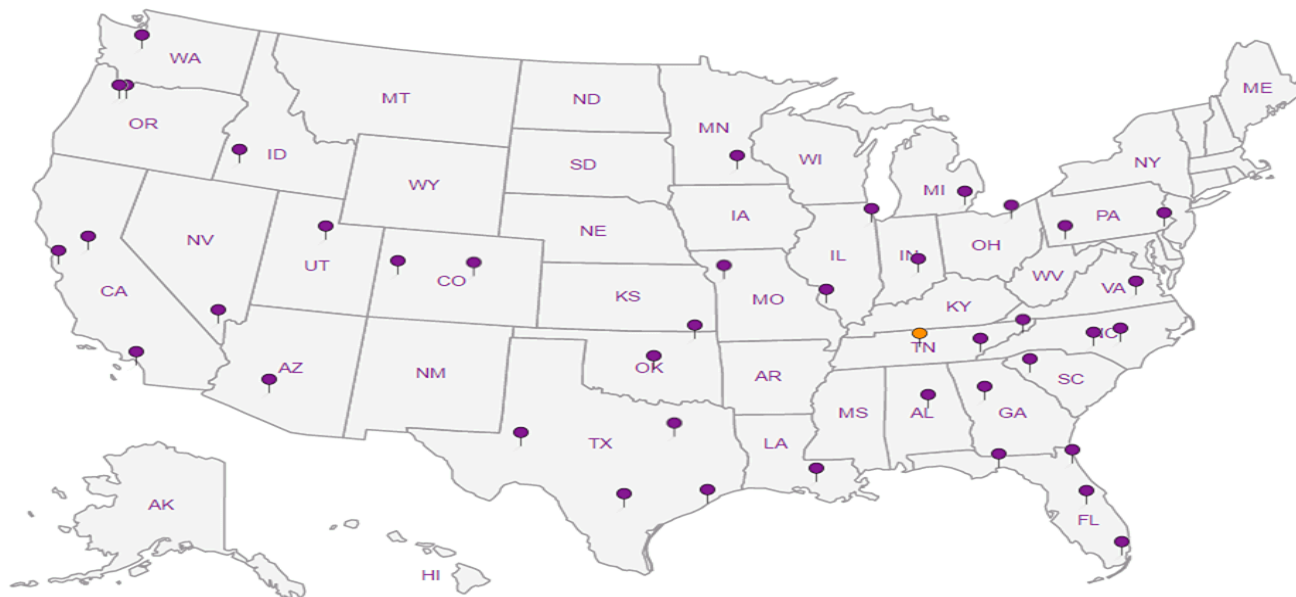
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres
Chk

Report to:
Jason Franks

Email To: jfranks@scsengineers.com;
jay.martin@kcpl.com;

Project Description: **KCPL - Montrose Generating St**

City/State Collected:

Please Circle:
PT MT CT ET

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project #
27213168.18

Lab Project #
AQUAOPKS-MONTROSE

Collected by (print):
Whit Martin

Site/Facility ID #

P.O. #

Collected by (signature):
Whit Martin

Rush? (Lab MUST Be Notified)

Quote #

___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Std

Immediately Packed on Ice N ___ Y **X**

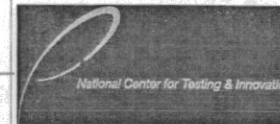
No.
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	
MW-601	Grab	GW		8/19/19	1220	1	X
MW-603	Grab	GW		8/19/19	1300	1	X
MW-605	Grab	GW		8/19/19	1330	1	X
DUPLICATE	Grab	GW		8/19/19	1330	1	X
605 MS / MSD	Grab	GW		8/19/19	1330	1	X

Chloride 125mlHDPE-NoPres

Analysis / Container / Preservative

Chain of Custody Page ___ of ___



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



SDG # **1131383**

D058

Accnum: **AQUAOPKS**

Template: **T144749**

Prelogin: **P724506**

PM: **206 - Jeff Carr**

PB:

Shipped Via:

Remarks Sample # (lab only)

1
2
3
4

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Samples returned via:
___ UPS ___ FedEx ___ Courier

Tracking # **4794 8839 2264**

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Trip Blank Received: Yes No

HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C Bottles Received: **3.4 + 1 = 3.5 5**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: **8/21** Time: **0845**

Hold:

Condition:
NCF **10K**

Jared Morrison
December 20, 2022

ATTACHMENT 1-6
November 2019 Sampling Event Laboratory Report

SCS Engineers - KS

Sample Delivery Group: L1158415
Samples Received: 11/07/2019
Project Number: 27213168.18
Description: KCPL - Montrose Generating Station

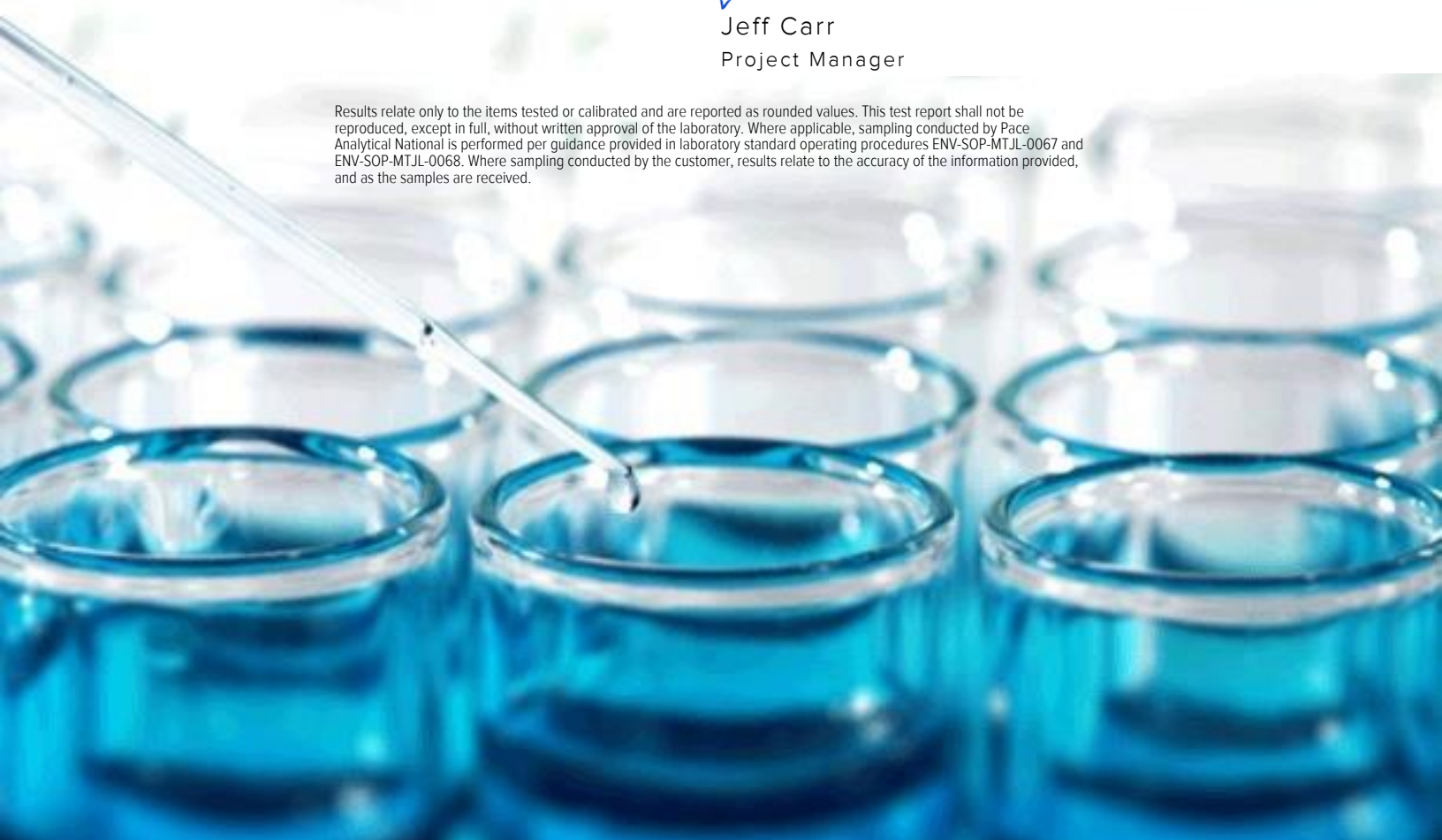
Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:











Jeff Carr
Project Manager

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Sr: Sample Results	6	
MW-601 L1158415-01	6	
MW-602 L1158415-02	7	
MW-603 L1158415-03	8	
MW-604 L1158415-04	9	
MW-605 L1158415-05	10	
MW-701 L1158415-06	11	
MW-702 L1158415-07	12	
MW-703 L1158415-08	13	
MW-704 L1158415-09	14	
MW-705 L1158415-10	15	
MW-706 L1158415-11	16	
DUPLICATE L1158415-12	17	
Qc: Quality Control Summary	18	
Gravimetric Analysis by Method 2540 C-2011	18	
Wet Chemistry by Method 9056A	19	
Metals (ICP) by Method 6010B	21	
Gl: Glossary of Terms	22	
Al: Accreditations & Locations	23	
Sc: Sample Chain of Custody	24	

SAMPLE SUMMARY



MW-601 L1158415-01 GW

Collected by
G. Penaflor
Collected date/time
11/05/19 11:15
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378173	1	11/10/19 12:32	11/10/19 13:23	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	1	11/11/19 12:36	11/11/19 12:36	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	100	11/11/19 12:52	11/11/19 12:52	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379525	1	11/13/19 19:53	11/14/19 04:52	TRB	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

MW-602 L1158415-02 GW

Collected by
G. Penaflor
Collected date/time
11/05/19 13:00
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378173	1	11/10/19 12:32	11/10/19 13:23	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	1	11/11/19 13:08	11/11/19 13:08	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	50	11/11/19 13:56	11/11/19 13:56	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379525	1	11/13/19 19:53	11/14/19 04:55	TRB	Mt. Juliet, TN

MW-603 L1158415-03 GW

Collected by
G. Penaflor
Collected date/time
11/05/19 13:40
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378173	1	11/10/19 12:32	11/10/19 13:23	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	1	11/11/19 14:11	11/11/19 14:11	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	50	11/11/19 14:59	11/11/19 14:59	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379525	1	11/13/19 19:53	11/14/19 04:58	TRB	Mt. Juliet, TN

MW-604 L1158415-04 GW

Collected by
G. Penaflor
Collected date/time
11/05/19 14:10
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378173	1	11/10/19 12:32	11/10/19 13:23	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	1	11/11/19 15:15	11/11/19 15:15	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	50	11/11/19 15:31	11/11/19 15:31	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379525	1	11/13/19 19:53	11/14/19 05:00	TRB	Mt. Juliet, TN

MW-605 L1158415-05 GW

Collected by
G. Penaflor
Collected date/time
11/05/19 14:40
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378173	1	11/10/19 12:32	11/10/19 13:23	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	1	11/11/19 15:46	11/11/19 15:46	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	50	11/11/19 16:02	11/11/19 16:02	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379525	1	11/13/19 19:53	11/14/19 05:03	TRB	Mt. Juliet, TN

MW-701 L1158415-06 GW

Collected by
G. Penaflor
Collected date/time
11/05/19 14:10
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378173	1	11/10/19 12:32	11/10/19 13:23	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	1	11/11/19 16:18	11/11/19 16:18	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	50	11/11/19 16:34	11/11/19 16:34	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379525	1	11/13/19 19:53	11/14/19 05:06	TRB	Mt. Juliet, TN

SAMPLE SUMMARY



MW-702 L1158415-07 GW

Collected by
G. Penaflor
Collected date/time
11/05/19 14:40
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378173	1	11/10/19 12:32	11/10/19 13:23	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	1	11/11/19 16:50	11/11/19 16:50	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	50	11/11/19 17:06	11/11/19 17:06	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379525	1	11/13/19 19:53	11/14/19 05:09	TRB	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

MW-703 L1158415-08 GW

Collected by
G. Penaflor
Collected date/time
11/05/19 15:20
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378173	1	11/10/19 12:32	11/10/19 13:23	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	1	11/11/19 17:22	11/11/19 17:22	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	50	11/11/19 18:10	11/11/19 18:10	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379525	1	11/13/19 19:53	11/14/19 05:12	TRB	Mt. Juliet, TN

MW-704 L1158415-09 GW

Collected by
G. Penaflor
Collected date/time
11/05/19 15:35
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378173	1	11/10/19 12:32	11/10/19 13:23	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	1	11/11/19 18:26	11/11/19 18:26	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	50	11/11/19 18:41	11/11/19 18:41	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379525	1	11/13/19 19:53	11/14/19 05:14	TRB	Mt. Juliet, TN

MW-705 L1158415-10 GW

Collected by
G. Penaflor
Collected date/time
11/05/19 13:50
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378173	1	11/10/19 12:32	11/10/19 13:23	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	1	11/11/19 18:57	11/11/19 18:57	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	20	11/11/19 19:29	11/11/19 19:29	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379525	1	11/13/19 19:53	11/14/19 05:17	TRB	Mt. Juliet, TN

MW-706 L1158415-11 GW

Collected by
G. Penaflor
Collected date/time
11/05/19 14:35
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378173	1	11/10/19 12:32	11/10/19 13:23	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	1	11/11/19 20:01	11/11/19 20:01	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	50	11/11/19 21:21	11/11/19 21:21	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379525	1	11/13/19 19:53	11/14/19 04:28	TRB	Mt. Juliet, TN

DUPLICATE L1158415-12 GW

Collected by
G. Penaflor
Collected date/time
11/05/19 14:40
Received date/time
11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378173	1	11/10/19 12:32	11/10/19 13:23	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	1	11/11/19 21:36	11/11/19 21:36	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378385	50	11/11/19 21:52	11/11/19 21:52	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379525	1	11/13/19 19:53	11/14/19 05:25	TRB	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	3880000	J3	50000	1	11/10/2019 13:23	WG1378173

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	52800		1000	1	11/11/2019 12:36	WG1378385
Fluoride	402		100	1	11/11/2019 12:36	WG1378385
Sulfate	2950000		500000	100	11/11/2019 12:52	WG1378385

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	11/14/2019 04:52	WG1379525
Calcium	457000		1000	1	11/14/2019 04:52	WG1379525

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	1880000		20000	1	11/10/2019 13:23	WG1378173

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	3690		1000	1	11/11/2019 13:08	WG1378385
Fluoride	140		100	1	11/11/2019 13:08	WG1378385
Sulfate	1110000		250000	50	11/11/2019 13:56	WG1378385

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	4160		200	1	11/14/2019 04:55	WG1379525
Calcium	325000		1000	1	11/14/2019 04:55	WG1379525

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2530000		50000	1	11/10/2019 13:23	WG1378173

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	6660		1000	1	11/11/2019 14:11	WG1378385
Fluoride	436		100	1	11/11/2019 14:11	WG1378385
Sulfate	2010000		250000	50	11/11/2019 14:59	WG1378385

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	5960		200	1	11/14/2019 04:58	WG1379525
Calcium	410000		1000	1	11/14/2019 04:58	WG1379525

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2340000		50000	1	11/10/2019 13:23	WG1378173

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	12500		1000	1	11/11/2019 15:15	WG1378385
Fluoride	428		100	1	11/11/2019 15:15	WG1378385
Sulfate	1650000		250000	50	11/11/2019 15:31	WG1378385

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	4300		200	1	11/14/2019 05:00	WG1379525
Calcium	407000		1000	1	11/14/2019 05:00	WG1379525

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2380000		50000	1	11/10/2019 13:23	WG1378173

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	59100		1000	1	11/11/2019 15:46	WG1378385
Fluoride	195		100	1	11/11/2019 15:46	WG1378385
Sulfate	1730000		250000	50	11/11/2019 16:02	WG1378385

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	1500		200	1	11/14/2019 05:03	WG1379525
Calcium	399000		1000	1	11/14/2019 05:03	WG1379525

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2700000		50000	1	11/10/2019 13:23	WG1378173

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	319000		50000	50	11/11/2019 16:34	WG1378385
Fluoride	926		100	1	11/11/2019 16:18	WG1378385
Sulfate	1650000		250000	50	11/11/2019 16:34	WG1378385

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	11/14/2019 05:06	WG1379525
Calcium	366000		1000	1	11/14/2019 05:06	WG1379525

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2350000		50000	1	11/10/2019 13:23	WG1378173

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	269000		50000	50	11/11/2019 17:06	WG1378385
Fluoride	227		100	1	11/11/2019 16:50	WG1378385
Sulfate	1330000		250000	50	11/11/2019 17:06	WG1378385

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	11/14/2019 05:09	WG1379525
Calcium	425000		1000	1	11/14/2019 05:09	WG1379525

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	1460000		20000	1	11/10/2019 13:23	WG1378173

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	20000		1000	1	11/11/2019 17:22	WG1378385
Fluoride	158		100	1	11/11/2019 17:22	WG1378385
Sulfate	925000		250000	50	11/11/2019 18:10	WG1378385

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	11/14/2019 05:12	WG1379525
Calcium	238000		1000	1	11/14/2019 05:12	WG1379525

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	1110000		20000	1	11/10/2019 13:23	WG1378173

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	3470		1000	1	11/11/2019 18:26	WG1378385
Fluoride	138		100	1	11/11/2019 18:26	WG1378385
Sulfate	644000		250000	50	11/11/2019 18:41	WG1378385

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	11/14/2019 05:14	WG1379525
Calcium	156000		1000	1	11/14/2019 05:14	WG1379525

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	843000		13300	1	11/10/2019 13:23	WG1378173

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	13000		1000	1	11/11/2019 18:57	WG1378385
Fluoride	185		100	1	11/11/2019 18:57	WG1378385
Sulfate	489000		100000	20	11/11/2019 19:29	WG1378385

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	11/14/2019 05:17	WG1379525
Calcium	108000		1000	1	11/14/2019 05:17	WG1379525

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	1800000		25000	1	11/10/2019 13:23	WG1378173

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	28800		1000	1	11/11/2019 20:01	WG1378385
Fluoride	186		100	1	11/11/2019 20:01	WG1378385
Sulfate	1040000		250000	50	11/11/2019 21:21	WG1378385

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	11/14/2019 04:28	WG1379525
Calcium	287000	<u>V</u>	1000	1	11/14/2019 04:28	WG1379525

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	1740000		25000	1	11/10/2019 13:23	WG1378173

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	28800		1000	1	11/11/2019 21:36	WG1378385
Fluoride	184		100	1	11/11/2019 21:36	WG1378385
Sulfate	1050000		250000	50	11/11/2019 21:52	WG1378385

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	200		200	1	11/14/2019 05:25	WG1379525
Calcium	282000		1000	1	11/14/2019 05:25	WG1379525

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3470627-1 11/10/19 13:23

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1158415-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158415-01 11/10/19 13:23 • (DUP) R3470627-3 11/10/19 13:23

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	3880000	4270000	1	9.70	J3	5

L1158421-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1158421-03 11/10/19 13:23 • (DUP) R3470627-4 11/10/19 13:23

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	2680000	2910000	1	8.23	J3	5

Laboratory Control Sample (LCS)

(LCS) R3470627-2 11/10/19 13:23

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Dissolved Solids	8800000	8410000	95.6	85.0-115	



Method Blank (MB)

(MB) R3470854-1 11/11/19 11:01

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000
Fluoride	U		9.90	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1158388-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1158388-09 11/11/19 11:48 • (DUP) R3470854-3 11/11/19 12:04

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	ND	0.000	1	0.000		15
Fluoride	ND	0.000	1	0.000		15
Sulfate	ND	0.000	1	0.000		15

L1158415-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1158415-10 11/11/19 18:57 • (DUP) R3470854-5 11/11/19 19:13

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	13000	13000	1	0.293		15
Fluoride	185	183	1	1.09		15

L1158415-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1158415-10 11/11/19 19:29 • (DUP) R3470854-6 11/11/19 19:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	489000	488000	20	0.194		15

Laboratory Control Sample (LCS)

(LCS) R3470854-2 11/11/19 11:17

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	38400	96.0	80.0-120	
Fluoride	8000	7980	99.7	80.0-120	
Sulfate	40000	38700	96.7	80.0-120	



L1158388-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1158388-09 11/11/19 11:48 • (MS) R3470854-4 11/11/19 12:20

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	ND	48600	97.2	1	80.0-120	
Fluoride	5000	ND	4870	97.4	1	80.0-120	
Sulfate	50000	ND	49000	98.1	1	80.0-120	

L1158415-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158415-11 11/11/19 20:01 • (MS) R3470854-7 11/11/19 20:17 • (MSD) R3470854-8 11/11/19 20:33

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	28800	78000	78000	98.4	98.5	1	80.0-120			0.0328	15
Fluoride	5000	186	4880	5020	93.8	96.6	1	80.0-120			2.86	15
Sulfate	50000	1120000	1140000	1140000	47.2	47.8	1	80.0-120	<u>EV</u>	<u>EV</u>	0.0265	15

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3471789-1 11/14/19 04:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Boron	U		12.6	200
Calcium	U		46.3	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3471789-2 11/14/19 04:23 • (LCSD) R3471789-3 11/14/19 04:25

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Boron	1000	940	965	94.0	96.5	80.0-120			2.59	20
Calcium	10000	9620	9670	96.2	96.7	80.0-120			0.497	20

L1158415-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158415-11 11/14/19 04:28 • (MS) R3471789-5 11/14/19 04:33 • (MSD) R3471789-6 11/14/19 04:36

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Boron	1000	ND	1160	1170	98.3	99.2	1	75.0-125			0.776	20
Calcium	10000	287000	291000	292000	36.5	44.7	1	75.0-125	V	V	0.280	20



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier Description

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J3	The associated batch QC was outside the established quality control range for precision.
V	The sample concentration is too high to evaluate accurate spike recoveries.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

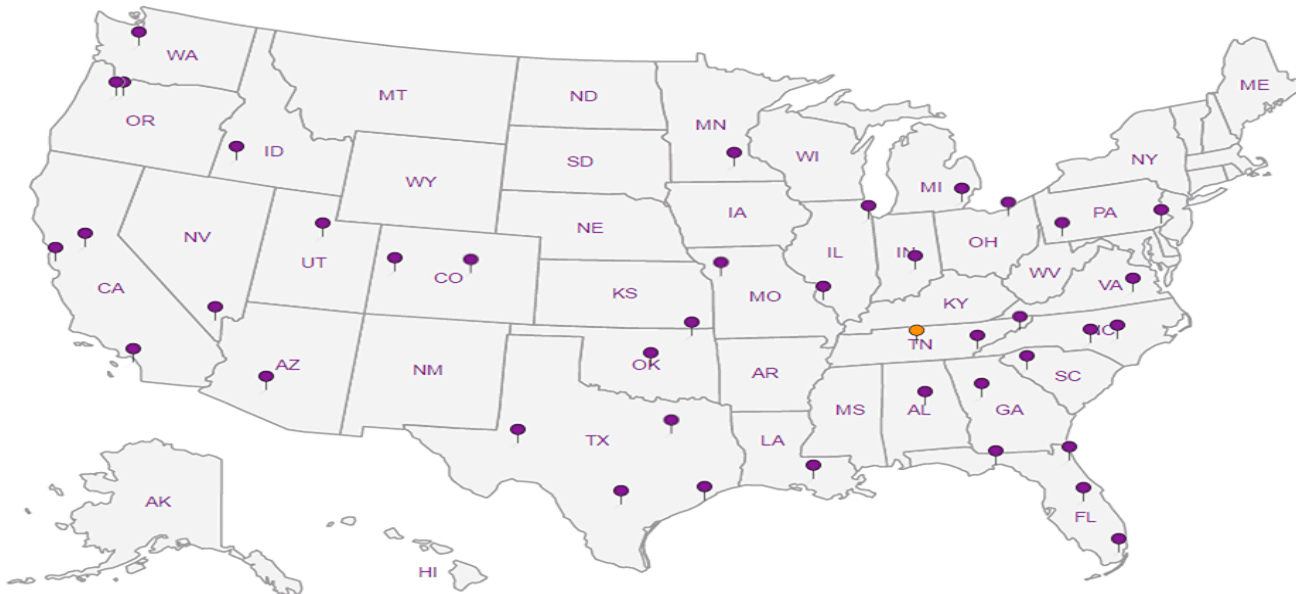
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

Billing Information:

Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres
Chk

Analysis / Container / Preservative



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Jason Franks

Email To: jfranks@scsengineers.com;
jay.martin@kcpl.com;

Project: **EVERGY**
Description: **KCPL - Montrose Generating St**

City/State Collected: **Montrose, MO**

Please Circle:
PT MT ET

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project #
27213168.18

Lab Project #
AQUAOPKS-MONTROSE

Collected by (print):
G. P. ...

Site/Facility ID #

P.O. #

Collected by (signature):
[Signature]

Rush? (Lab MUST Be Notified)

Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #

Date Results Needed

std

No. of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Analysis	Container	Preservative
MW-601	GRAB	GW	-	11/5/19	1115	3	X	X	X
MW-602		GW	-		1300	3	X	X	X
MW-603		GW	-		1340	3	X	X	X
MW-604		GW	-		1410	3	X	X	X
MW-605		GW	-		1440	3	X	X	X
MW-701		GW	-		1410	3	X	X	X
MW-702		GW	-		1440	3	X	X	X
MW-703		GW	-		1520	3	X	X	X
MW-704		GW	-		1535	3	X	X	X
MW-705		GW	-		1350	3	X	X	X

Anions (Cl, F, SO4) 125mLHDPE-NoPres

B, Ca - 6010 250mLHDPE-HNO3

TDS 250mLHDPE-NoPres

SDG # **1156415**
B162

Accnum: **AQUAOPKS**

Template: **T135966**

Prelogin: **P736915**

PM: **206 - Jeff Carr**

PB:

Shipped Via:

Remarks Sample # (lab only)

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist
COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Samples returned via:
 UPS FedEx Courier

Tracking # **3W**

Relinquished by: (Signature)
[Signature]

Date: **11/6/19**

Time: **1122**

Received by: (Signature)
[Signature]

Trip Blank Received: Yes / No
HCL / MeOH
TBR

Relinquished by: (Signature)
[Signature]

Date: **11/6/19**

Time: **1800**

Received by: (Signature)
[Signature]

Temp: **13.2 °C**
0.873-0.5

Bottles Received: **42**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)
[Signature]

Date: **11/7** Time: **0830**

Hold:

Condition:
NCF OK

SCS Engineers - KS

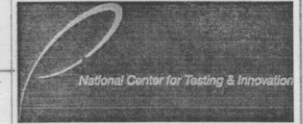
8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 2 of 2



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Jason Franks

Email To: jfranks@scsengineers.com;
jay.martin@kcpl.com;

Project *EVG 454*
Description: **KCPL - Montrose Generating St**

City/State
Collected: *MONTROSE, MO*

Please Circle:
PT MT ET

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project #
27213168.18

Lab Project #
AQUAOPKS-MONTROSE

Collected by (print):
G. Penator

Site/Facility ID #

P.O. #

Collected by (signature):
Gallagher

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #
Date Results Needed
5td

Immediately Packed on Ice N ___ Y

No. of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cl, F, SO4)	B, Ca	TDS	Analysis	Container	Preservative	Remarks	Sample # (lab only)
MW-706	<i>GRAB</i>	<i>GW</i>	<i>-</i>	<i>11/5/19</i>	<i>1435</i>	<i>3</i>	<i>X</i>	<i>X</i>	<i>X</i>					<i>-1</i>
<i>706 MS</i>	<i>↓</i>	<i>GW</i>	<i>-</i>	<i>↓</i>	<i>1445</i>	<i>3</i>	<i>X</i>	<i>X</i>	<i>X</i>					
<i>706 MSD</i>	<i>↓</i>	<i>GW</i>	<i>-</i>	<i>↓</i>	<i>1450</i>	<i>3</i>	<i>X</i>	<i>X</i>	<i>X</i>					
DUPLICATE	<i>↓</i>	<i>GW</i>	<i>-</i>	<i>↓</i>	<i>1440</i>	<i>3</i>	<i>X</i>	<i>X</i>	<i>X</i>					<i>-12</i>

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Sample Receipt Checklist
COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Samples returned via:
___ UPS ___ FedEx ___ Courier

Tracking #

Relinquished by: (Signature)
Jason R. Franks

Date: *11/6/19*

Time: *1122*

Received by: (Signature)
[Signature]

Trip Blank Received: Yes / No
HCL / MeOH
TBR

Relinquished by: (Signature)
[Signature]

Date: *11/6/19*

Time: *1800*

Received by: (Signature)
SWA

Temp: *43°C* Bottles Received: *42*
0.8-3=0.5

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)
[Signature]

Date: *11/7* Time: *0830*

Hold:

Condition:
NCF / OK

SCS Engineers - KS

Sample Delivery Group: L1158426
Samples Received: 11/07/2019
Project Number: 27213168.18
Description: KCPL - Montrose Generating Station

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:



Jeff Carr
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Cp: Cover Page	1	¹Cp
Tc: Table of Contents	2	²Tc
Ss: Sample Summary	3	³Ss
Cn: Case Narrative	4	⁴Cn
Sr: Sample Results	5	⁵Sr
MW-506 L1158426-01	5	
DUPLICATE L1158426-02	6	
Qc: Quality Control Summary	7	⁶Qc
Gravimetric Analysis by Method 2540 C-2011	7	
Wet Chemistry by Method 9056A	8	
Metals (ICP) by Method 6010B	10	
Gl: Glossary of Terms	11	⁷Gl
Al: Accreditations & Locations	12	⁸Al
Sc: Sample Chain of Custody	13	⁹Sc

SAMPLE SUMMARY

MW-506 L1158426-01 GW

Collected by: G. Penaflor
 Collected date/time: 11/05/19 11:55
 Received date/time: 11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1377901	1	11/10/19 12:51	11/10/19 14:16	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378488	1	11/11/19 16:07	11/11/19 16:07	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378488	50	11/11/19 17:19	11/11/19 17:19	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379526	1	11/13/19 10:36	11/14/19 10:32	TRB	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

DUPLICATE L1158426-02 GW

Collected by: G. Penaflor
 Collected date/time: 11/05/19 12:00
 Received date/time: 11/07/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1377901	1	11/10/19 12:51	11/10/19 14:16	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378488	1	11/11/19 17:33	11/11/19 17:33	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1378488	50	11/11/19 17:48	11/11/19 17:48	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379526	1	11/13/19 10:36	11/14/19 11:32	TRB	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2280000	J3	50000	1	11/10/2019 14:16	WG1377901

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	74500		1000	1	11/11/2019 16:07	WG1378488
Fluoride	ND		100	1	11/11/2019 16:07	WG1378488
Sulfate	1760000		250000	50	11/11/2019 17:19	WG1378488

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	11/14/2019 10:32	WG1379526
Calcium	341000	O1V	1000	1	11/14/2019 10:32	WG1379526

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2190000		50000	1	11/10/2019 14:16	WG1377901

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	74600		1000	1	11/11/2019 17:33	WG1378488
Fluoride	101		100	1	11/11/2019 17:33	WG1378488
Sulfate	1740000		250000	50	11/11/2019 17:48	WG1378488

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	11/14/2019 11:32	WG1379526
Calcium	343000		1000	1	11/14/2019 11:32	WG1379526

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3470723-1 11/10/19 14:16

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1158426-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158426-01 11/10/19 14:16 • (DUP) R3470723-3 11/10/19 14:16

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	2280000	2630000	1	14.1	J3	5

L1158718-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1158718-12 11/10/19 14:16 • (DUP) R3470723-4 11/10/19 14:16

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	2000000	2150000	1	7.48	J3	5

Laboratory Control Sample (LCS)

(LCS) R3470723-2 11/10/19 14:16

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Dissolved Solids	8800000	8200000	93.2	85.0-115	



Method Blank (MB)

(MB) R3470914-1 11/11/19 13:35

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000
Fluoride	U		9.90	100
Sulfate	U		77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1159341-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1159341-03 11/11/19 19:57 • (DUP) R3470914-6 11/11/19 20:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	1600000	1600000	1	0.00434	E	15
Fluoride	226	216	1	4.12		15
Sulfate	6650	6690	1	0.667		15

Laboratory Control Sample (LCS)

(LCS) R3470914-2 11/11/19 13:50

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39100	97.8	80.0-120	
Fluoride	8000	7990	99.9	80.0-120	
Sulfate	40000	40100	100	80.0-120	

L1158426-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158426-01 11/11/19 16:07 • (MS) R3470914-3 11/11/19 16:21 • (MSD) R3470914-4 11/11/19 17:04

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	74500	120000	121000	91.7	92.6	1	80.0-120	E	E	0.372	15
Fluoride	5000	ND	4950	5020	97.1	98.6	1	80.0-120			1.52	15
Sulfate	50000	1660000	1640000	1650000	0.000	0.000	1	80.0-120	E V	E V	0.787	15

L1159341-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1159341-05 11/11/19 20:41 • (MS) R3470914-7 11/11/19 20:55

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	373000	400000	54.3	1	80.0-120	E V
Fluoride	5000	547	5090	90.9	1	80.0-120	



L1159341-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1159341-05 11/11/19 20:41 • (MS) R3470914-7 11/11/19 20:55

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Sulfate	50000	24800	72600	95.5	1	80.0-120	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3471999-1 11/14/19 10:24

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Boron	U		12.6	200
Calcium	U		46.3	1000

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3471999-2 11/14/19 10:27 • (LCSD) R3471999-3 11/14/19 10:29

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Boron	1000	941	939	94.1	93.9	80.0-120			0.161	20
Calcium	10000	9620	9580	96.2	95.8	80.0-120			0.424	20

5 Sr

6 Qc

L1158426-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158426-01 11/14/19 10:32 • (MS) R3471999-5 11/14/19 10:38 • (MSD) R3471999-6 11/14/19 10:41

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Boron	1000	ND	1040	1040	94.3	94.3	1	75.0-125			0.0321	20
Calcium	10000	341000	344000	345000	34.4	41.9	1	75.0-125	V	V	0.218	20

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J3	The associated batch QC was outside the established quality control range for precision.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
V	The sample concentration is too high to evaluate accurate spike recoveries.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

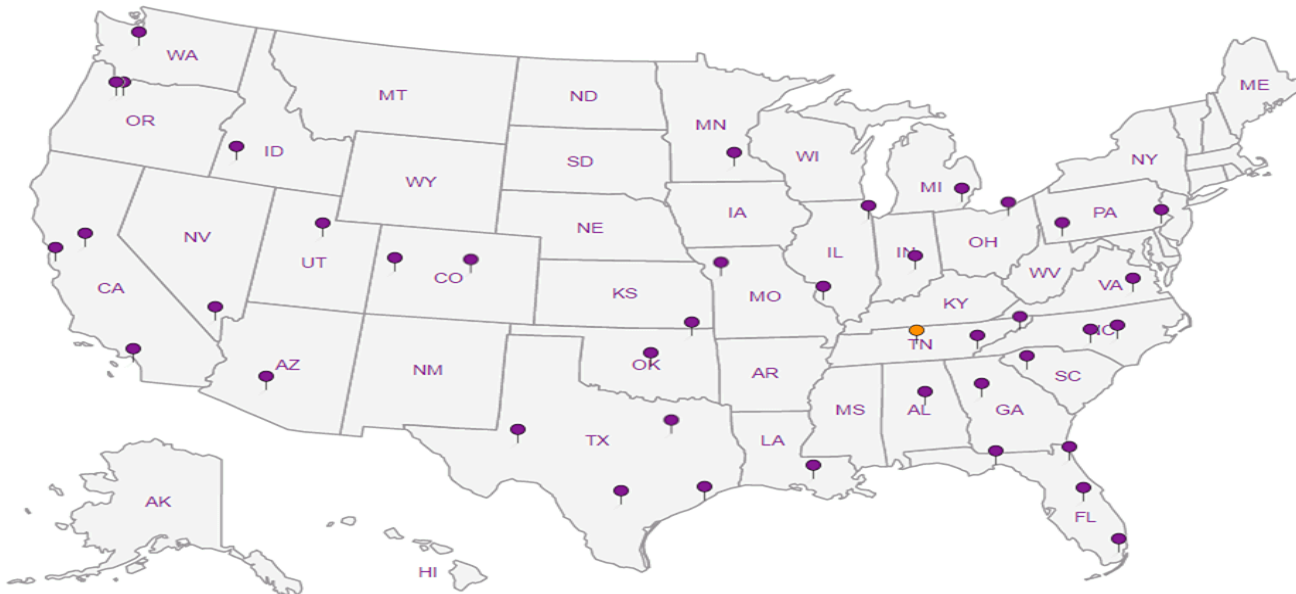
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Jared Morrison
December 20, 2022

ATTACHMENT 2
Statistical Analyses

Jared Morrison
December 20, 2022

ATTACHMENT 2-1
Fall 2018 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

March 29, 2019
Revised June 3, 2019

To: **Montrose Generating Station**
400 SW Highway P
Clinton, MO 64735
Kansas City Power & Light Company



From: **SCS Engineers**

RE: **Determination of Statistically Significant Increases - CCR Landfill**
Fall 2018 Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Montrose Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Detection monitoring groundwater samples were collected on November 19, 2018. Review and validation of the results from the November 2018 Detection Monitoring Event was completed on December 31, 2018, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on January 10, 2019 and March 13, 2019.

The completed statistical evaluation identified one Appendix III constituent above its prediction limit. The prediction limit for chloride in monitoring well MW-605 is 50.32 mg/L. The detection monitoring sample was reported at 51.7 mg/L. The first verification re-sample was collected on January 10, 2019 with a result of 50.9 mg/L. The second verification re-sample was collected on March 13, 2019 with a result of 52.4 mg/L.

Therefore, in accordance with the Statistical Method Certification, the detection monitoring sample for calcium from monitoring well MW-605 exceeds its prediction limit and is a confirmed statistically significant increase (SSI) over background.

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified an SSI above the background prediction limit for chloride in monitoring well MW-605.

Attached to this memorandum are the following backup information:

Attachment 1: Sanitas™ Output:

Statistical evaluation output from Sanitas™ for the prediction limit analysis. This includes prediction limit plots, prediction limit background data, detection sample result,

1st verification re-sample result (when applicable), 2nd verification re-sample result (when applicable), extra sample results for pH because pH is collected as part of the sampling procedure, and a Prediction Limit summary table. Output documentation includes the analytical data used for the statistical analyses.

Attachment 2: Sanitas™ Configuration Settings:
 Screen shots of the applicable Sanitas™ configuration settings for the statistical prediction limit analysis. This includes data configuration, output configuration, prediction limit configuration and other tests configuration.

Revision Number	Revision Date	Attachment Revised	Summary of Revisions
1	06/3/19	Text in Memorandum	Corrected the parameter "calcium" in the last paragraph of page one to "chloride".

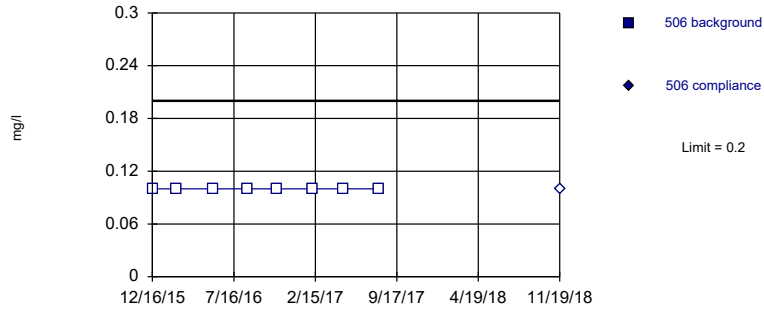
Montrose Generating Station
Determination of Statistically Significant Increases
CCR Landfill
March 29, 2019
Revised June 3, 2019

ATTACHMENT 1

Sanitas™ Output

Within Limit

Prediction Limit
Intrawell Non-parametric

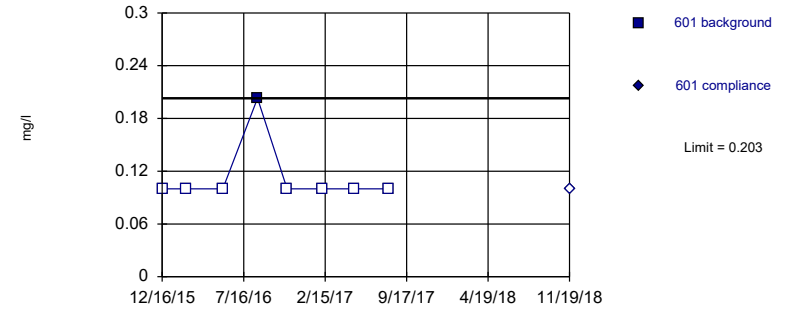


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Non-parametric

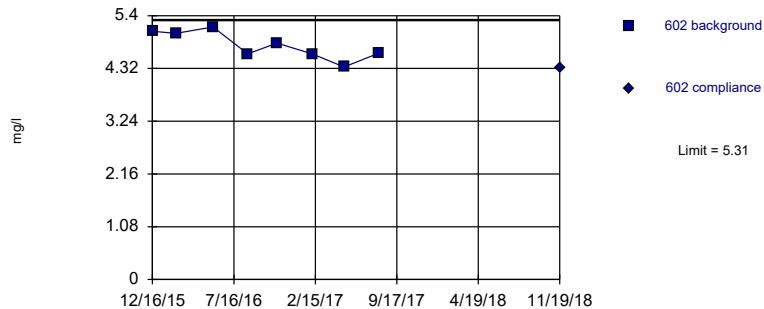


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

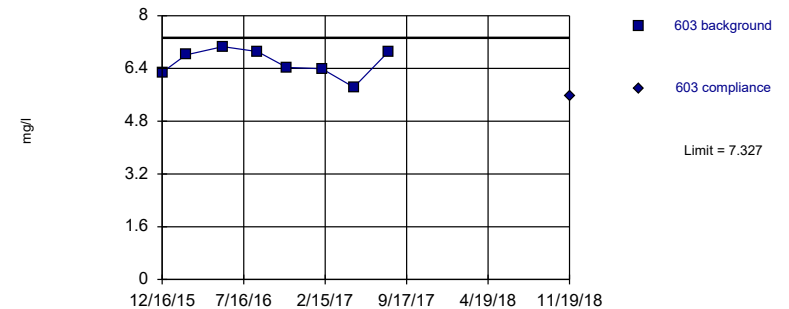


Background Data Summary: Mean=4.794, Std. Dev.=0.2855, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9261, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Boron Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=6.576, Std. Dev.=0.415, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9214, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Boron Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Boron (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506	506
12/16/2015	<0.2	
2/16/2016	<0.2	
5/23/2016	<0.2	
8/22/2016	<0.2	
11/8/2016	<0.2	
2/7/2017	<0.2	
5/1/2017	<0.2	
7/31/2017	<0.2	
11/19/2018		<0.2

Prediction Limit

Constituent: Boron (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	601	601
12/16/2015	<0.2	
2/16/2016	<0.2	
5/23/2016	<0.2	
8/22/2016	0.203	
11/8/2016	<0.2	
2/7/2017	<0.2	
5/2/2017	<0.2	
7/31/2017	<0.2	
11/19/2018		<0.2

Prediction Limit

Constituent: Boron (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	602	602
12/16/2015	5.08	
2/16/2016	5.04	
5/23/2016	5.17	
8/22/2016	4.62	
11/7/2016	4.84	
2/7/2017	4.62	
5/2/2017	4.35	
7/31/2017	4.63	
11/19/2018		4.32

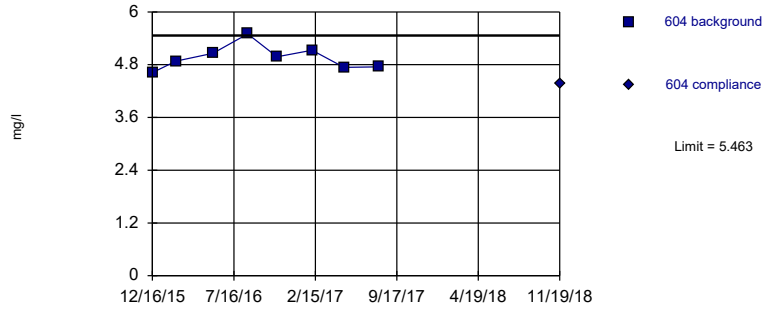
Prediction Limit

Constituent: Boron (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	603	603
12/16/2015	6.28	
2/16/2016	6.81	
5/23/2016	7.06	
8/22/2016	6.91	
11/7/2016	6.43	
2/7/2017	6.39	
5/2/2017	5.83	
7/31/2017	6.9	
11/19/2018		5.56

Within Limit

Prediction Limit
Intrawell Parametric

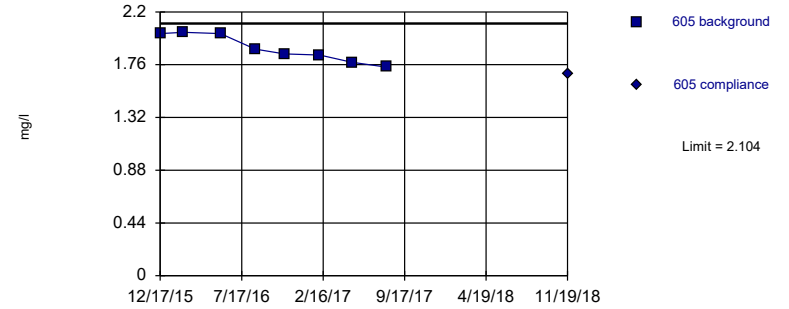


Background Data Summary: Mean=4.958, Std. Dev.=0.2791, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.939, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Boron Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

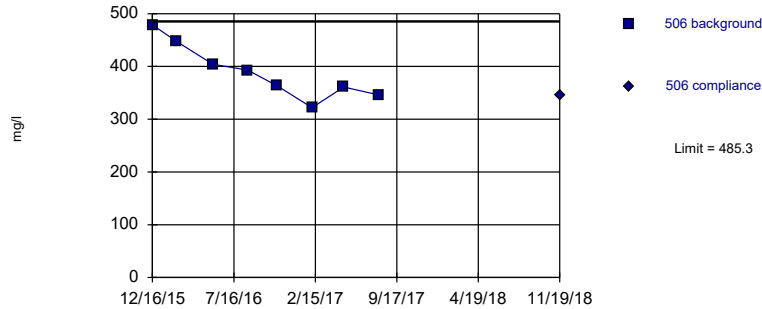


Background Data Summary: Mean=1.896, Std. Dev.=0.1145, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8853, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Boron Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

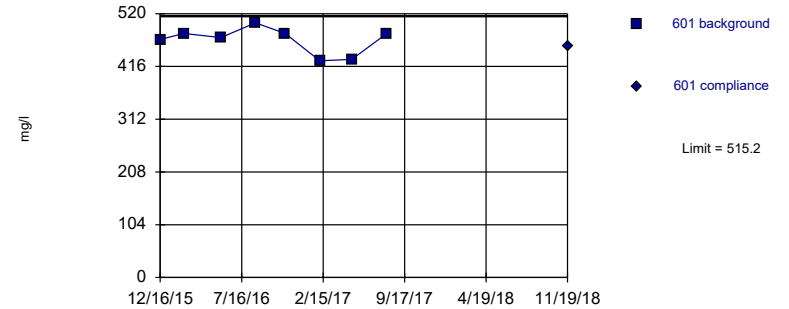


Background Data Summary: Mean=389.5, Std. Dev.=52.94, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9493, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=467.9, Std. Dev.=26.16, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8556, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Boron (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	604	604
12/16/2015	4.62	
2/16/2016	4.88	
5/23/2016	5.06	
8/22/2016	5.5	
11/7/2016	4.98	
2/7/2017	5.13	
5/2/2017	4.74	
7/31/2017	4.75	
11/19/2018		4.36

Prediction Limit

Constituent: Boron (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	605	605
12/17/2015	2.02	
2/16/2016	2.03	
5/23/2016	2.02	
8/22/2016	1.89	
11/7/2016	1.85	
2/7/2017	1.84	
5/2/2017	1.78	
7/31/2017	1.74	
11/19/2018		1.68

Prediction Limit

Constituent: Calcium (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506	506
12/16/2015	479	
2/16/2016	448	
5/23/2016	404	
8/22/2016	393	
11/8/2016	363	
2/7/2017	322	
5/1/2017	361	
7/31/2017	346	
11/19/2018		346

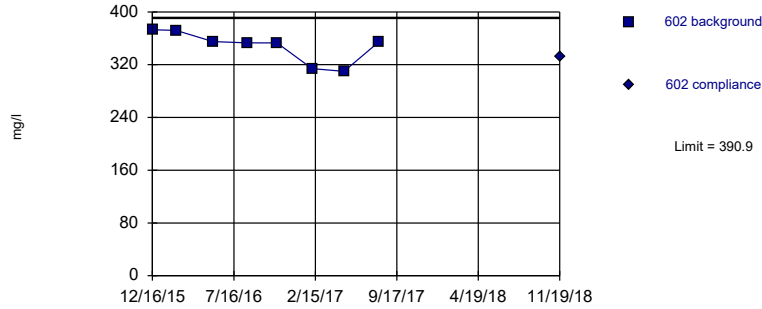
Prediction Limit

Constituent: Calcium (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	601	601
12/16/2015	469	
2/16/2016	481	
5/23/2016	473	
8/22/2016	502	
11/8/2016	481	
2/7/2017	427	
5/2/2017	430	
7/31/2017	480	
11/19/2018		456

Within Limit

Prediction Limit
Intrawell Parametric

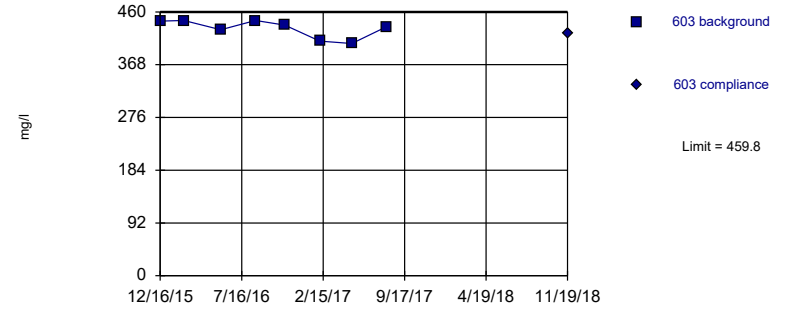


Background Data Summary: Mean=348, Std. Dev.=23.71, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8221, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

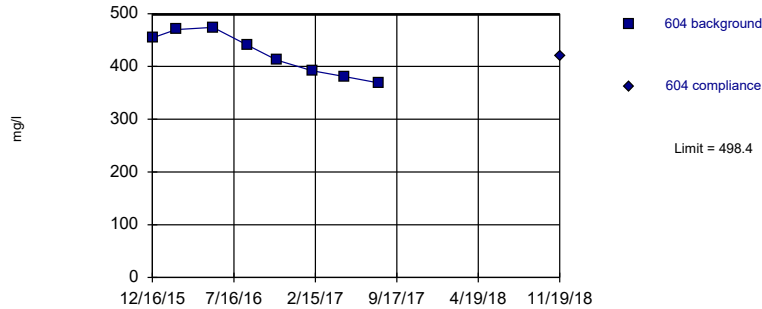


Background Data Summary: Mean=431, Std. Dev.=15.9, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8323, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

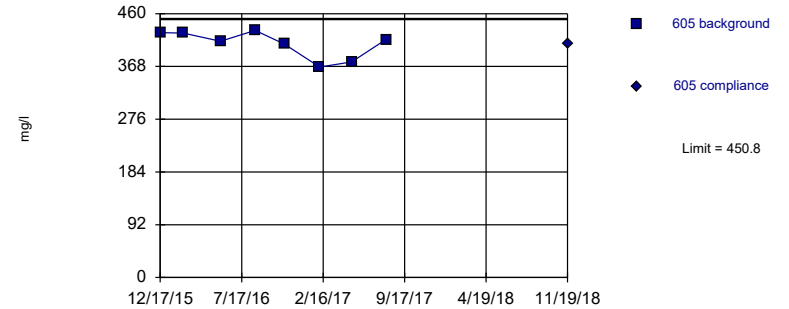


Background Data Summary: Mean=424, Std. Dev.=41.08, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.917, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=407.6, Std. Dev.=23.86, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8546, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Calcium (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	602	602
12/16/2015	373	
2/16/2016	372	
5/23/2016	355	
8/22/2016	353	
11/7/2016	353	
2/7/2017	314	
5/2/2017	310	
7/31/2017	354	
11/19/2018		332

Prediction Limit

Constituent: Calcium (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	603	603
12/16/2015	444	
2/16/2016	445	
5/23/2016	429	
8/22/2016	445	
11/7/2016	437	
2/7/2017	409	
5/2/2017	405	
7/31/2017	434	
11/19/2018		423

Prediction Limit

Constituent: Calcium (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	604	604
12/16/2015	454	
2/16/2016	470	
5/23/2016	474	
8/22/2016	440	
11/7/2016	412	
2/7/2017	392	
5/2/2017	381	
7/31/2017	369	
11/19/2018		420

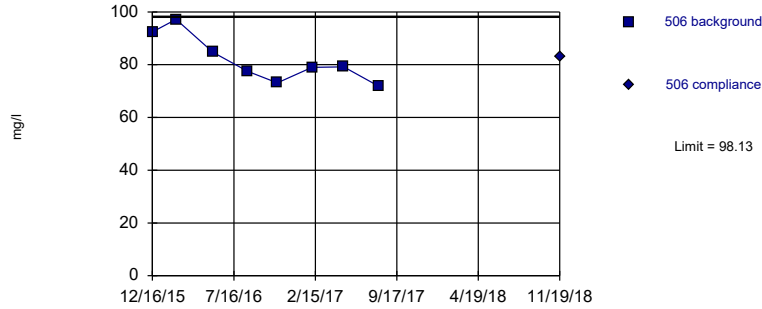
Prediction Limit

Constituent: Calcium (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	605	605
12/17/2015	427	
2/16/2016	426	
5/23/2016	412	
8/22/2016	431	
11/7/2016	407	
2/7/2017	367	
5/2/2017	376	
7/31/2017	415	
11/19/2018		407

Within Limit

Prediction Limit
Intrawell Parametric

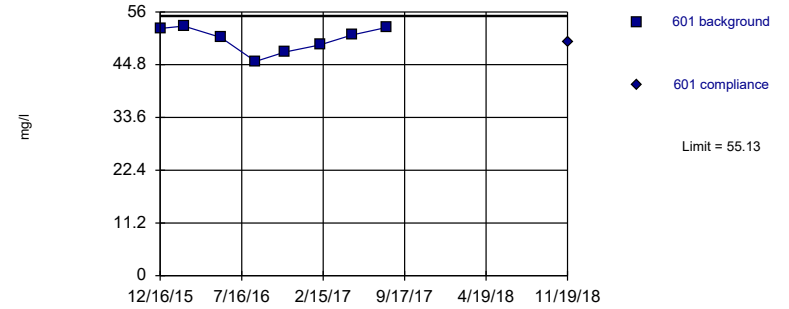


Background Data Summary: Mean=81.88, Std. Dev.=8.982, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9113, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

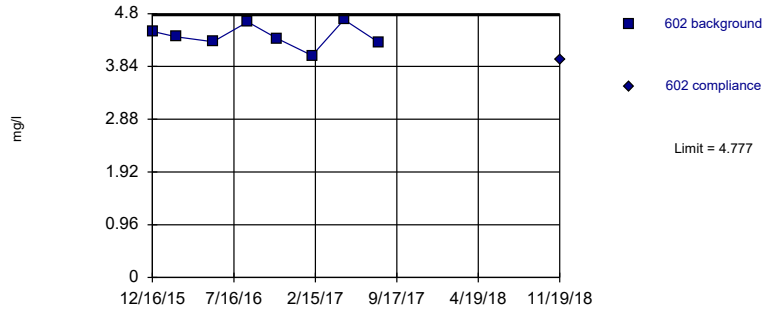


Background Data Summary: Mean=50.24, Std. Dev.=2.703, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9098, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

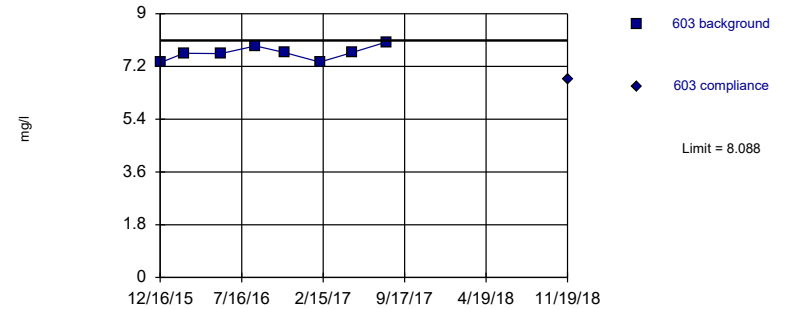


Background Data Summary: Mean=4.395, Std. Dev.=0.2111, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9535, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=7.655, Std. Dev.=0.239, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9121, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Chloride (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506	506
12/16/2015	92.4	
2/16/2016	97.2	
5/23/2016	84.7	
8/22/2016	77.5	
11/8/2016	73.1	
2/7/2017	79	
5/1/2017	79.2	
7/31/2017	71.9	
11/19/2018		83.1

Prediction Limit

Constituent: Chloride (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	601	601
12/16/2015	52.5	
2/16/2016	53	
5/23/2016	50.6	
8/22/2016	45.5	
11/8/2016	47.5	
2/7/2017	49	
5/2/2017	51.1	
7/31/2017	52.7	
11/19/2018		49.6

Prediction Limit

Constituent: Chloride (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	602	602
12/16/2015	4.48	
2/16/2016	4.38	
5/23/2016	4.29	
8/22/2016	4.65	
11/7/2016	4.35	
2/7/2017	4.04	
5/2/2017	4.69	
7/31/2017	4.28	
11/19/2018		3.97

Prediction Limit

Constituent: Chloride (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	603	603
12/16/2015	7.33	
2/16/2016	7.65	
5/23/2016	7.64	
8/22/2016	7.9	
11/7/2016	7.67	
2/7/2017	7.35	
5/2/2017	7.67	
7/31/2017	8.03	
11/19/2018		6.76

Prediction Limit

Constituent: Chloride (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	604	604
12/16/2015	15.6	
2/16/2016	15.5	
5/23/2016	13.3	
8/22/2016	11.7	
11/7/2016	12.5	
2/7/2017	12.5	
5/2/2017	13.3	
7/31/2017	11.1	
11/19/2018		13.3

Prediction Limit

Constituent: Chloride (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	605	605	
12/17/2015	43.9		
2/16/2016	45.7		
5/23/2016	47.3		
8/22/2016	46.5		
11/7/2016	48.2		
2/7/2017	48		
5/2/2017	48.7		
7/31/2017	49.1		
11/19/2018	51.7		
1/10/2019	50.9		1st verification re-sample
3/13/2019	52.4		2nd verification re-sample

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506	506
12/16/2015	3540	
2/16/2016	3280	
5/23/2016	2910	
8/22/2016	3260	
11/8/2016	2710	
2/7/2017	2790	
5/1/2017	2760	
7/31/2017	2620	
11/19/2018		2430

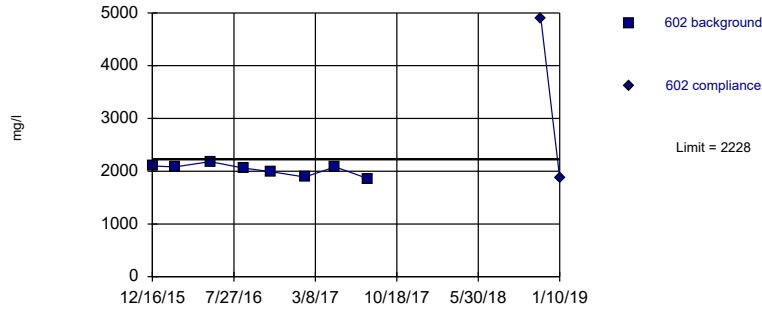
Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	601	601
12/16/2015	4470	
2/16/2016	4280	
5/23/2016	4530	
8/22/2016	4810	
11/8/2016	4370	
2/7/2017	4640	
5/2/2017	4530	
7/31/2017	4030	
11/19/2018		4100

Within Limit

Prediction Limit Intrawell Parametric

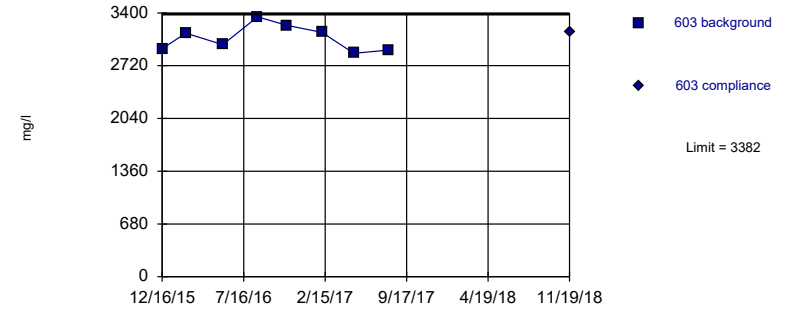


Background Data Summary: Mean=2030, Std. Dev.=109.2, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9195, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit Intrawell Parametric

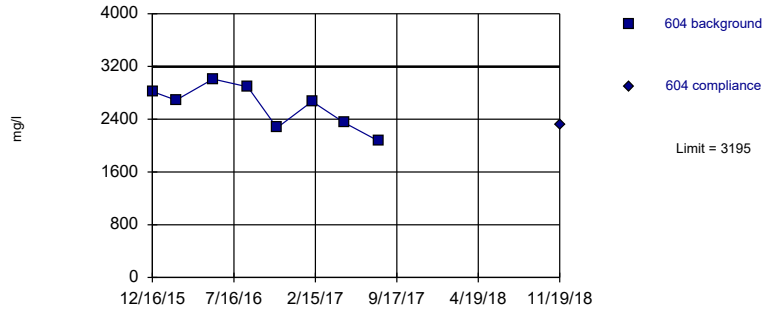


Background Data Summary: Mean=3076, Std. Dev.=169.1, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9267, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit Intrawell Parametric

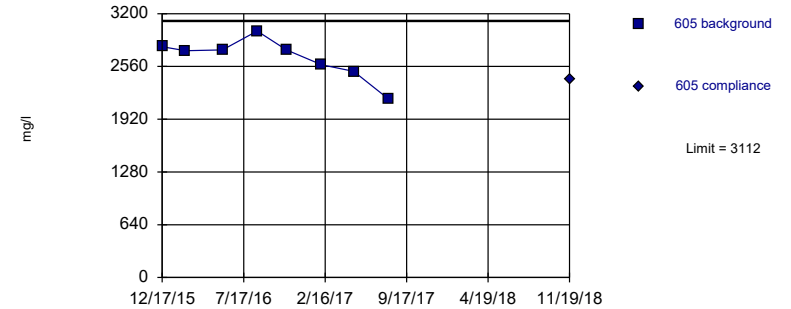


Background Data Summary: Mean=2596, Std. Dev.=330.8, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9393, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=2664, Std. Dev.=247.4, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9059, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	602	602	
12/16/2015	2100		
2/16/2016	2080		
5/23/2016	2180		
8/22/2016	2060		
11/7/2016	1990		
2/7/2017	1890		
5/2/2017	2080		
7/31/2017	1860		
11/19/2018	4900		
1/10/2019	1870	1st verification re-sample	

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	603	603
12/16/2015	2940	
2/16/2016	3140	
5/23/2016	2990	
8/22/2016	3350	
11/7/2016	3240	
2/7/2017	3150	
5/2/2017	2880	
7/31/2017	2920	
11/19/2018		3160

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	604	604
12/16/2015	2820	
2/16/2016	2690	
5/23/2016	3010	
8/22/2016	2890	
11/7/2016	2270	
2/7/2017	2670	
5/2/2017	2350	
7/31/2017	2070	
11/19/2018		2320

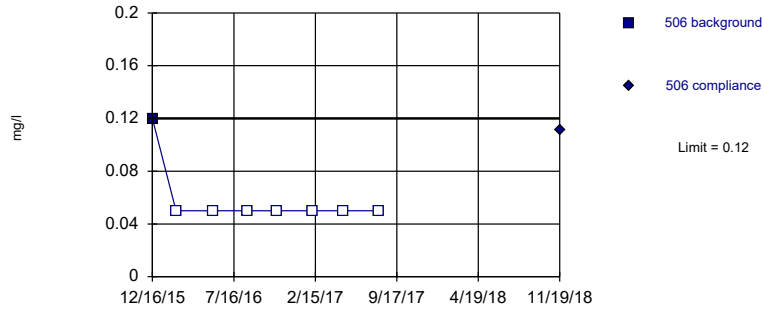
Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	605	605
12/17/2015	2800	
2/16/2016	2750	
5/23/2016	2760	
8/22/2016	2990	
11/7/2016	2760	
2/7/2017	2580	
5/2/2017	2500	
7/31/2017	2170	
11/19/2018		2410

Within Limit

Prediction Limit
Intrawell Non-parametric

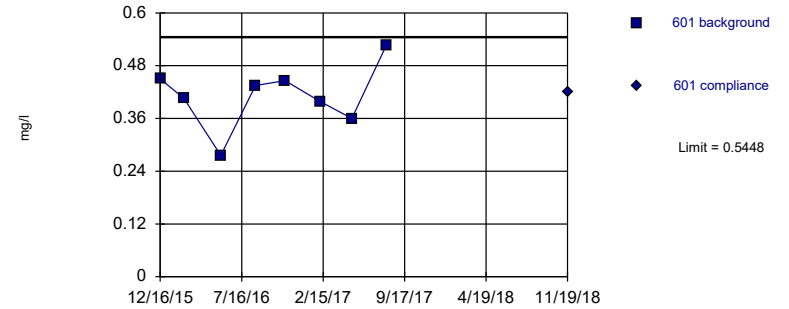


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality; data were not deseasonalized.

Constituent: Fluoride Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

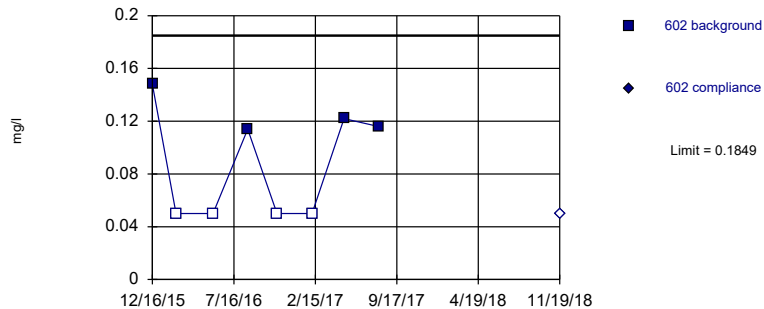


Background Data Summary: Mean=0.4123, Std. Dev.=0.07322, n=8. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9578, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

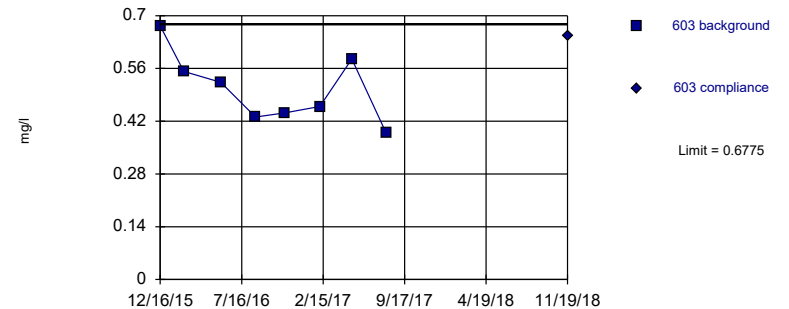


Background Data Summary (after Aitchison's Adjustment): Mean=0.0625, Std. Dev.=0.0676, n=8, 50% NDs. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7877, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=0.5066, Std. Dev.=0.0944, n=8. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9541, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Fluoride (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506	506
12/16/2015	0.12	
2/16/2016	<0.1	
5/23/2016	<0.1	
8/22/2016	<0.1	
11/8/2016	<0.1	
2/7/2017	<0.1	
5/1/2017	<0.1	
7/31/2017	<0.1	
11/19/2018		0.111

Prediction Limit

Constituent: Fluoride (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	601	601
12/16/2015	0.45	
2/16/2016	0.406	
5/23/2016	0.276	
8/22/2016	0.435	
11/8/2016	0.446	
2/7/2017	0.399	
5/2/2017	0.36	
7/31/2017	0.526	
11/19/2018		0.42

Prediction Limit

Constituent: Fluoride (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	602	602
12/16/2015	0.148	
2/16/2016	<0.1	
5/23/2016	<0.1	
8/22/2016	0.114	
11/7/2016	<0.1	
2/7/2017	<0.1	
5/2/2017	0.122	
7/31/2017	0.116	
11/19/2018		<0.1

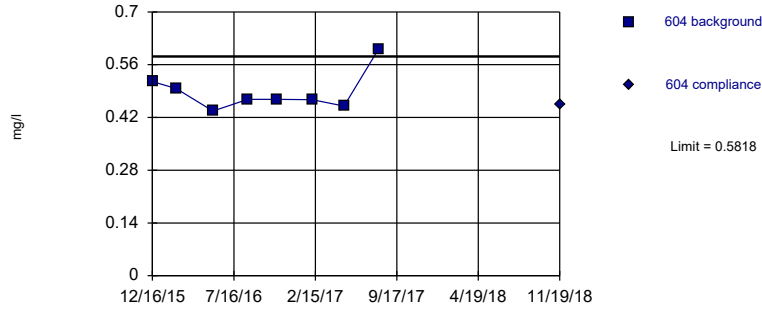
Prediction Limit

Constituent: Fluoride (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	603	603
12/16/2015	0.673	
2/16/2016	0.552	
5/23/2016	0.523	
8/22/2016	0.431	
11/7/2016	0.442	
2/7/2017	0.459	
5/2/2017	0.585	
7/31/2017	0.388	
11/19/2018		0.645

Within Limit

Prediction Limit
Intrawell Parametric

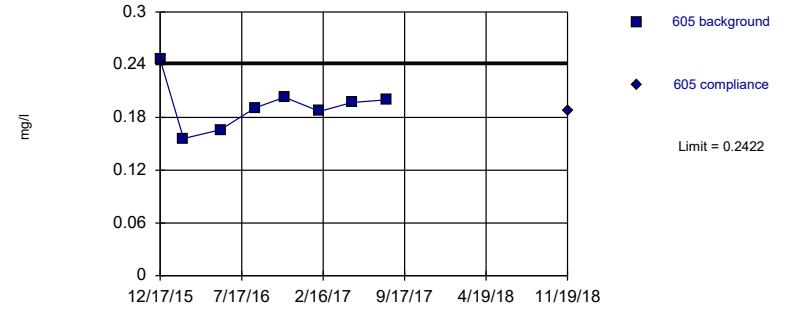


Background Data Summary: Mean=0.4879, Std. Dev.=0.05191, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8289, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

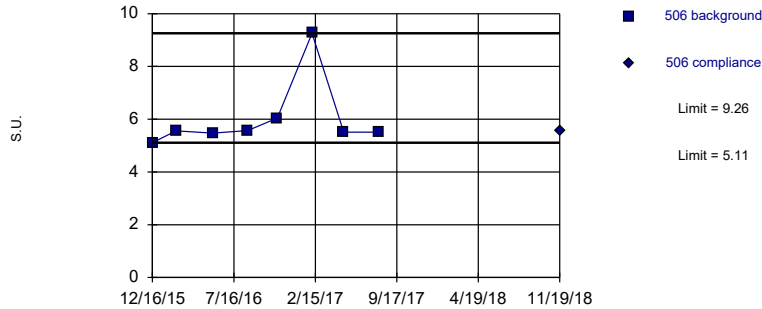


Background Data Summary: Mean=0.1933, Std. Dev.=0.02702, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9254, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limits

Prediction Limit
Intrawell Non-parametric

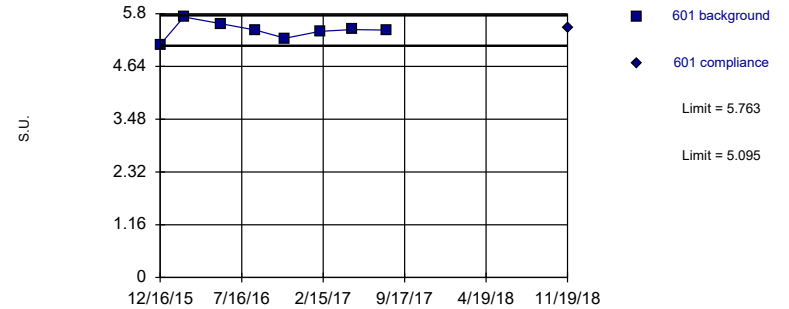


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 8 background values. Well-constituent pair annual alpha = 0.02358. Individual comparison alpha = 0.01182 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limits

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=5.429, Std. Dev.=0.1846, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9556, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: pH Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Fluoride (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	604	604
12/16/2015	0.515	
2/16/2016	0.497	
5/23/2016	0.437	
8/22/2016	0.468	
11/7/2016	0.468	
2/7/2017	0.467	
5/2/2017	0.45	
7/31/2017	0.601	
11/19/2018		0.453

Prediction Limit

Constituent: Fluoride (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	605	605
12/17/2015	0.246	
2/16/2016	0.156	
5/23/2016	0.166	
8/22/2016	0.191	
11/7/2016	0.203	
2/7/2017	0.187	
5/2/2017	0.197	
7/31/2017	0.2	
11/19/2018		0.187

Prediction Limit

Constituent: pH (S.U.) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506	506
12/16/2015	5.11	
2/16/2016	5.56	
5/23/2016	5.47	
8/22/2016	5.57	
11/8/2016	6.04	
2/7/2017	9.26	
5/1/2017	5.51	
7/31/2017	5.51	
11/19/2018		5.55

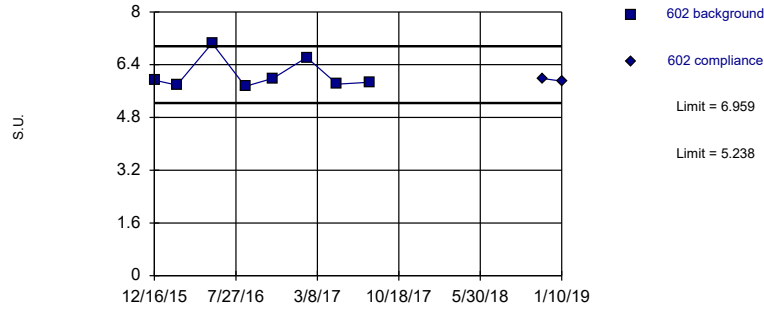
Prediction Limit

Constituent: pH (S.U.) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	601	601
12/16/2015	5.12	
2/16/2016	5.73	
5/23/2016	5.58	
8/22/2016	5.44	
11/8/2016	5.26	
2/7/2017	5.41	
5/2/2017	5.45	
7/31/2017	5.44	
11/19/2018		5.48

Within Limits

Prediction Limit
Intrawell Parametric

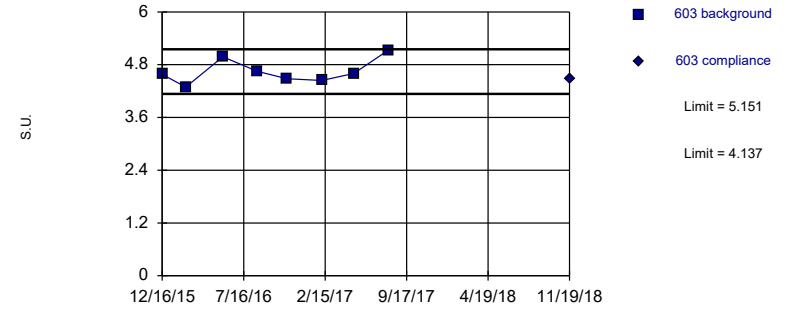


Background Data Summary: Mean=6.099, Std. Dev.=0.4755, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7552, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: pH Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limits

Prediction Limit
Intrawell Parametric

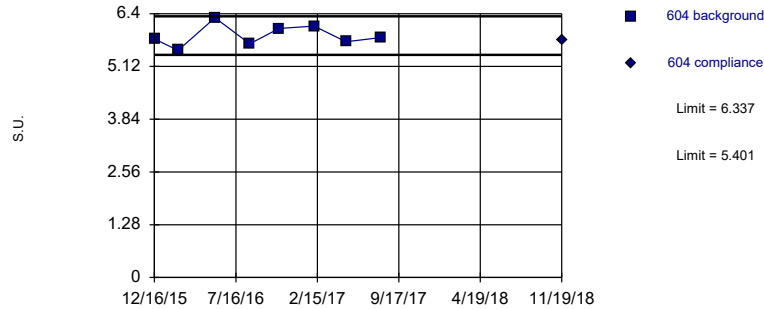


Background Data Summary: Mean=4.644, Std. Dev.=0.28, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9182, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: pH Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limits

Prediction Limit
Intrawell Parametric

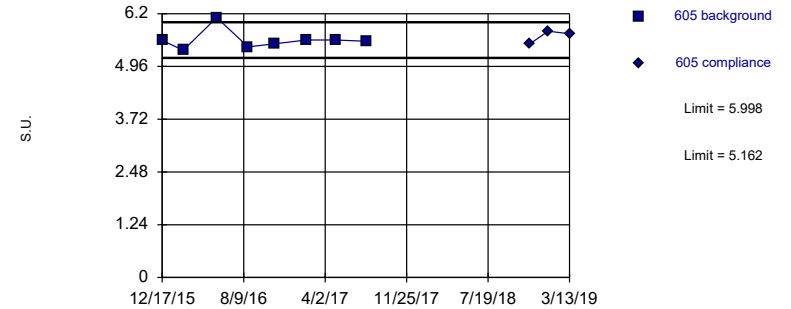


Background Data Summary: Mean=5.869, Std. Dev.=0.2585, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9645, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: pH Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limits

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=5.58, Std. Dev.=0.2309, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7625, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: pH Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: pH (S.U.) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	602	602	
12/16/2015	5.93		
2/16/2016	5.78		
5/23/2016	7.05		
8/22/2016	5.74		
11/7/2016	5.99		
2/7/2017	6.62		
5/2/2017	5.81		
7/31/2017	5.87		
11/19/2018	5.98		
1/10/2019	5.9	extra sample	

Prediction Limit

Constituent: pH (S.U.) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	603	603
12/16/2015	4.58	
2/16/2016	4.29	
5/23/2016	4.98	
8/22/2016	4.65	
11/7/2016	4.48	
2/7/2017	4.44	
5/2/2017	4.6	
7/31/2017	5.13	
11/19/2018		4.48

Prediction Limit

Constituent: pH (S.U.) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	604	604
12/16/2015	5.79	
2/16/2016	5.51	
5/23/2016	6.3	
8/22/2016	5.67	
11/7/2016	6.04	
2/7/2017	6.1	
5/2/2017	5.72	
7/31/2017	5.82	
11/19/2018		5.75

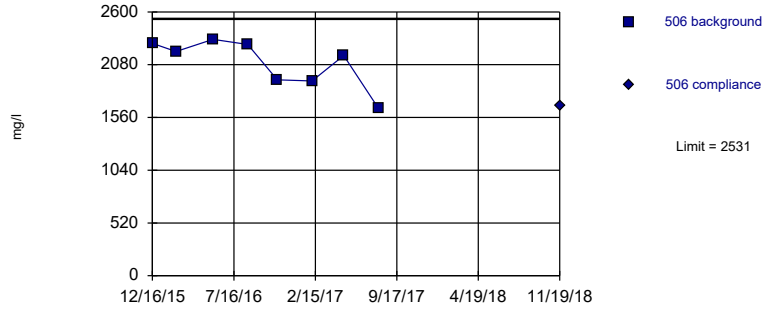
Prediction Limit

Constituent: pH (S.U.) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	605	605	
12/17/2015	5.57		
2/16/2016	5.34		
5/23/2016	6.11		
8/22/2016	5.42		
11/7/2016	5.49		
2/7/2017	5.58		
5/2/2017	5.58		
7/31/2017	5.55		
11/19/2018		5.5	
1/10/2019		5.79	extra sample
3/13/2019		5.73	extra sample

Within Limit

Prediction Limit Intrawell Parametric

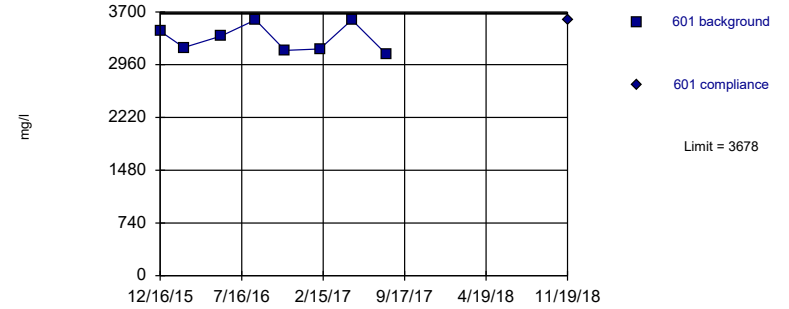


Background Data Summary: Mean=2098, Std. Dev.=239.7, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.871, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit Intrawell Parametric

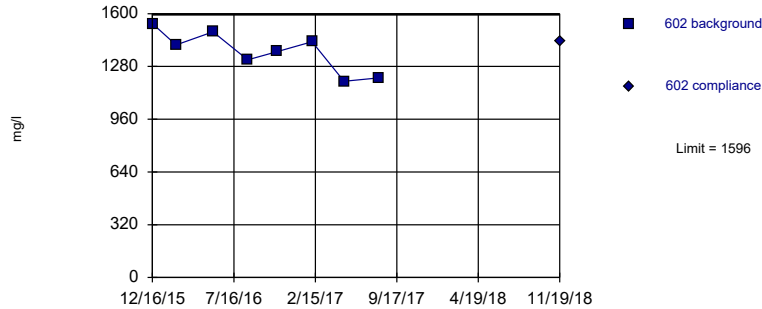


Background Data Summary: Mean=3328, Std. Dev.=193.7, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8736, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit Intrawell Parametric

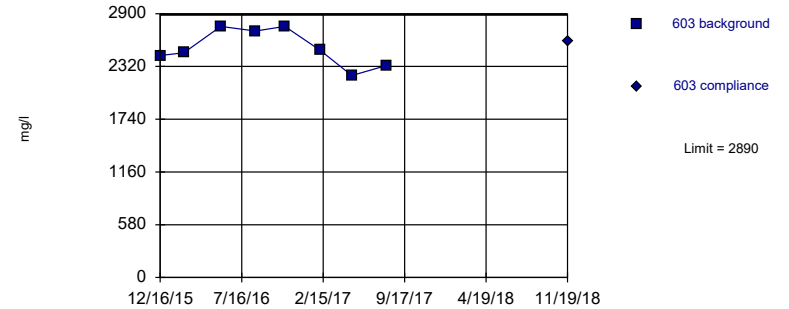


Background Data Summary: Mean=1370, Std. Dev.=124.8, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9502, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=2524, Std. Dev.=202.3, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9133, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 3/27/2019 11:19 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506	506
12/16/2015	2290	
2/16/2016	2210	
5/23/2016	2330	
8/22/2016	2280	
11/8/2016	1930	
2/7/2017	1920	
5/1/2017	2170	
7/31/2017	1650	
11/19/2018		1680

Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	601	601
12/16/2015	3430	
2/16/2016	3200	
5/23/2016	3360	
8/22/2016	3590	
11/8/2016	3160	
2/7/2017	3180	
5/2/2017	3590	
7/31/2017	3110	
11/19/2018		3590

Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	602	602
12/16/2015	1540	
2/16/2016	1410	
5/23/2016	1490	
8/22/2016	1320	
11/7/2016	1370	
2/7/2017	1430	
5/2/2017	1190	
7/31/2017	1210	
11/19/2018		1430

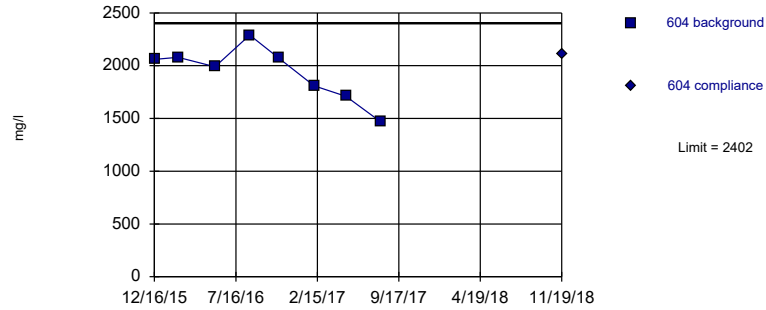
Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	603	603
12/16/2015	2440	
2/16/2016	2470	
5/23/2016	2760	
8/22/2016	2710	
11/7/2016	2760	
2/7/2017	2500	
5/2/2017	2220	
7/31/2017	2330	
11/19/2018		2590

Within Limit

Prediction Limit
Intrawell Parametric

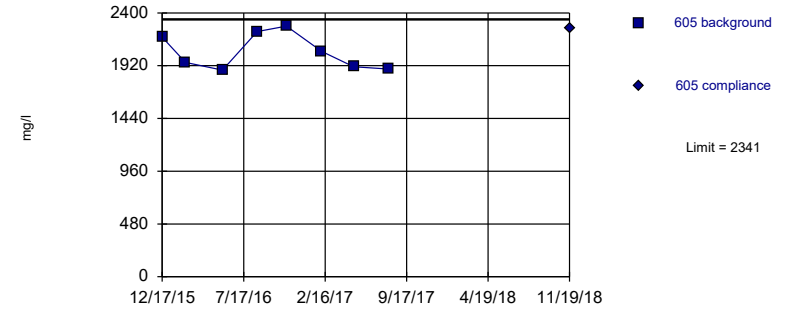


Background Data Summary: Mean=1935, Std. Dev.=258.1, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9413, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 3/27/2019 11:20 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=2046, Std. Dev.=163.1, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8694, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 3/27/2019 11:20 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	604	604
12/16/2015	2060	
2/16/2016	2080	
5/23/2016	1990	
8/22/2016	2290	
11/7/2016	2070	
2/7/2017	1810	
5/2/2017	1710	
7/31/2017	1470	
11/19/2018		2110

Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 3/27/2019 11:23 AM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	605	605
12/17/2015	2180	
2/16/2016	1950	
5/23/2016	1880	
8/22/2016	2230	
11/7/2016	2280	
2/7/2017	2050	
5/2/2017	1910	
7/31/2017	1890	
11/19/2018		2260

Prediction Limit

Montrose Generating Station UWL Client: SCS Engineers Data: Montrose Printed 3/27/2019, 11:23 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/l)	506	0.2	n/a	11/19/2018	0.1ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
Boron (mg/l)	601	0.203	n/a	11/19/2018	0.1ND	No	8	87.5	n/a	0.005912	NP Intra (NDs) 1 of 3
Boron (mg/l)	602	5.31	n/a	11/19/2018	4.32	No	8	0	No	0.00188	Param Intra 1 of 3
Boron (mg/l)	603	7.327	n/a	11/19/2018	5.56	No	8	0	No	0.00188	Param Intra 1 of 3
Boron (mg/l)	604	5.463	n/a	11/19/2018	4.36	No	8	0	No	0.00188	Param Intra 1 of 3
Boron (mg/l)	605	2.104	n/a	11/19/2018	1.68	No	8	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/l)	506	485.3	n/a	11/19/2018	346	No	8	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/l)	601	515.2	n/a	11/19/2018	456	No	8	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/l)	602	390.9	n/a	11/19/2018	332	No	8	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/l)	603	459.8	n/a	11/19/2018	423	No	8	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/l)	604	498.4	n/a	11/19/2018	420	No	8	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/l)	605	450.8	n/a	11/19/2018	407	No	8	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/l)	506	98.13	n/a	11/19/2018	83.1	No	8	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/l)	601	55.13	n/a	11/19/2018	49.6	No	8	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/l)	602	4.777	n/a	11/19/2018	3.97	No	8	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/l)	603	8.088	n/a	11/19/2018	6.76	No	8	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/l)	604	16.15	n/a	11/19/2018	13.3	No	8	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/l)	605	50.32	n/a	3/13/2019	52.4	Yes	8	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	506	3586	n/a	11/19/2018	2430	No	8	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	601	4885	n/a	11/19/2018	4100	No	8	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	602	2228	n/a	1/10/2019	1870	No	8	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	603	3382	n/a	11/19/2018	3160	No	8	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	604	3195	n/a	11/19/2018	2320	No	8	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	605	3112	n/a	11/19/2018	2410	No	8	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/l)	506	0.12	n/a	11/19/2018	0.111	No	8	87.5	n/a	0.005912	NP Intra (NDs) 1 of 3
Fluoride (mg/l)	601	0.5448	n/a	11/19/2018	0.42	No	8	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/l)	602	0.1849	n/a	11/19/2018	0.05ND	No	8	50	No	0.00188	Param Intra 1 of 3
Fluoride (mg/l)	603	0.6775	n/a	11/19/2018	0.645	No	8	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/l)	604	0.5818	n/a	11/19/2018	0.453	No	8	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/l)	605	0.2422	n/a	11/19/2018	0.187	No	8	0	No	0.00188	Param Intra 1 of 3
pH (S.U.)	506	9.26	5.11	11/19/2018	5.55	No	8	0	n/a	0.01182	NP Intra (normality) ...
pH (S.U.)	601	5.763	5.095	11/19/2018	5.48	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	602	6.959	5.238	1/10/2019	5.9	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	603	5.151	4.137	11/19/2018	4.48	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	604	6.337	5.401	11/19/2018	5.75	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	605	5.998	5.162	3/13/2019	5.73	No	8	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/l)	506	2531	n/a	11/19/2018	1680	No	8	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/l)	601	3678	n/a	11/19/2018	3590	No	8	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/l)	602	1596	n/a	11/19/2018	1430	No	8	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/l)	603	2890	n/a	11/19/2018	2590	No	8	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/l)	604	2402	n/a	11/19/2018	2110	No	8	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/l)	605	2341	n/a	11/19/2018	2260	No	8	0	No	0.00188	Param Intra 1 of 3

Montrose Generating Station
Determination of Statistically Significant Increases
CCR Landfill
March 29, 2019
Revised June 3, 2019

ATTACHMENT 2

Sanitas™ Configuration Settings

Exclude data flags:

Data Reading Options

- Individual Observations
- Mean of Each: Month
- Median of Each: Season

Non-Detect / Trace Handling...

Setup Seasons...

Automatically Process Resamples...

- Black and White Output
- Four Plots Per Page
 - Always Combine Data Pages...
 - Include Tick Marks on Data Page
 - Use Constituent Name for Graph Title
- Draw Border Around Text Reports and Data Pages
- Enlarge/Reduce Fonts (Graphs):
- Enlarge/Reduce Fonts (Data/Text Reports):
- Wide Margins (on reports without explicit setting)
- Use CAS# (Not Const. Name)
- Truncate File Names to Characters
- Include Limit Lines when found in Database...
- Show Deselected Data on Time Series ▾
- Show Deselected Data on all Data Pages ▾

- Prompt to Overwrite/Append Summary Tables
- Round Limits to Sig. Digits (when not set in data file)
- User-Set Scale
- Indicate Background Data
- Show Exact Dates
- Thick Plot Lines

Zoom Factor: ▾

- Output Decimal Precision
- Less Precision
 - Normal Precision
 - More Precision

Store Print Jobs in Multiple Constituent Mode

Printer: ▾

Test for Normality using Shapiro-Wilk/Francia at Alpha = 0.01

Use Non-Parametric Test when Non-Detects Percent > 50

Use Aitchison's Adjustment when Non-Detects Percent > 15

Optional Further Refinement: Use Aitchison's when NDs % > 50

Use Poisson Prediction Limit when Non-Detects Percent > 90

Transformation

Use Ladder of Powers

Natural Log or No Transformation

Never Transform

Use Specific Transformation: Natural Log

Use Best W Statistic

Plot Transformed Values

Deseasonalize (Intra- and InterWell)

If Seasonality Is Detected

If Seasonality Is Detected Or Insufficient to Test

Always (When Sufficient Data) Never

Always Use Non-Parametric

Facility

Statistical Evaluations per Year:

Constituents Analyzed:

Downgradient (Compliance) Wells:

Sampling Plan

Comparing Individual Observations

1 of 1 1 of 2 1 of 3 1 of 4

2 of 4 ("Modified California")

IntraWell Other

Stop if Background Trend Detected at Alpha = 0.05

Plot Background Data

Override Standard Deviation:

Override DF: Override Kappa:

Automatically Remove Background Outliers

2-Tailed Test Mode...

Show Deselected Data Lighter

Non-Parametric Limit = Highest Background Value

Non-Parametric Limit when 100% Non-Detects:

Highest/Second Highest Background Value

Most Recent PQL if available, or MDL

Most Recent Background Value (subst. method)

Rank Von Neumann, Wilcoxon Rank Sum / Mann-Whitney

- Use Modified Alpha...
- 2-Tailed Test Mode...

Outlier Tests

- EPA 1989 Outlier Screening (fixed alpha of 0.05)
- Dixon's at $\alpha=$ or if n > Rosner's at $\alpha=$ Use EPA Screening to establish Suspected Outliers
- Tukey's Outlier Screening, with IQR Multiplier = Use Ladder of Powers to achieve Best W Stat
- Test For Normality at Alpha =
 - Stop if Non-Normal
 - Continue with Parametric Test if Non-Normal
 - Tukey's if Non-Normal, with IQR Multiplier = Use Ladder of Powers to achieve Best W Stat
- No Outlier If Less Than Times Median
- Apply Rules found in Ohio Guidance Document 0715
- Combine Background Wells on the Outlier Report...

Piper, Stiff Diagram

- Combine Wells Label Constituents
- Combine Dates Label Axes
- Use Default Constituent Names Note Cation-Anion Balance (Piper only)
- Use Constituent Definition File

Jared Morrison
December 20, 2022

ATTACHMENT 2-2
Spring 2019 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

September 30, 2019

**To: Montrose Generating Station
400 SW Highway P
Clinton, MO 64735
Kansas City Power & Light Company**



From: SCS Engineers

**RE: Determination of Statistically Significant Increases - CCR Landfill
Spring 2019 Semiannual Detection Monitoring 40 CFR 257.94**

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Montrose Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Detection monitoring groundwater samples were collected on May 21, 2019. Review and validation of the results from the May 2019 Detection Monitoring Event was completed on July 3, 2019, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on July 15, 2019 and August 19, 2019.

The completed statistical evaluation identified one Appendix III constituent above its prediction limit in monitoring well MW-605.

Constituent/Monitoring Well	*UPL	Observation May 21, 2019	1st Verification July 15, 2019	2nd Verification August 19, 2019
Chloride				
605	50.32	55.4	57.8	57.9

*UPL – Upper Prediction Limit

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified an SSI above the background prediction limit for chloride in monitoring well MW-605.

Attached to this memorandum are the following backup information:

Attachment 1: Sanitas™ Output:

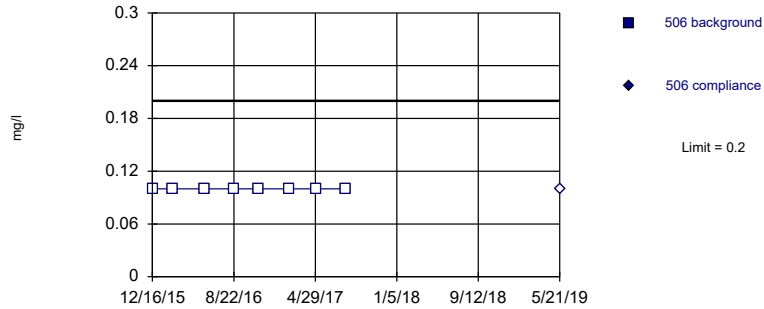
Statistical evaluation output from Sanitas™ for the prediction limit analysis. This includes prediction limit plots, prediction limit background data, detection sample result, 1st verification re-sample result (when applicable), 2nd verification re-sample result (when applicable), extra sample results for pH because pH is collected as part of the sampling

Montrose Generating Station
Determination of Statistically Significant Increases
CCR Landfill
September 30, 2019

ATTACHMENT 1

Sanitas™ Output

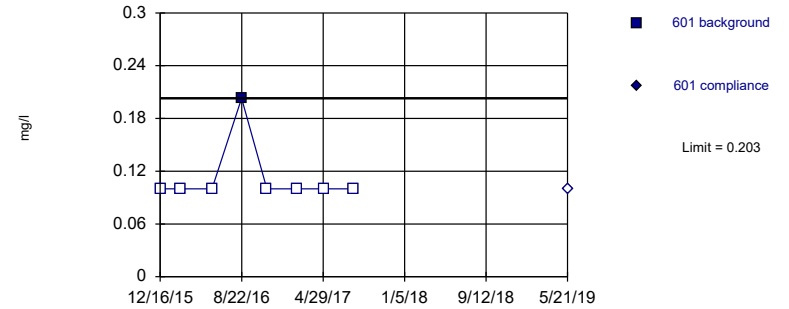
Within Limit Prediction Limit
Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 9/23/2019 3:02 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

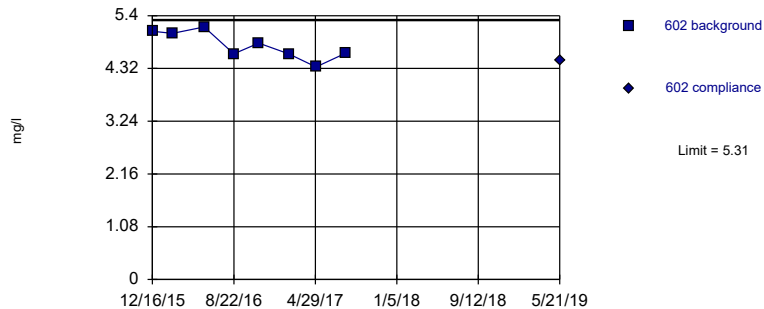
Within Limit Prediction Limit
Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 9/23/2019 3:02 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

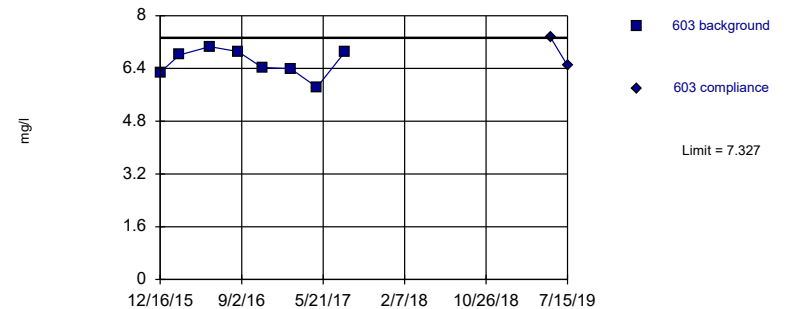
Within Limit Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=4.794, Std. Dev.=0.2855, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9261, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Boron Analysis Run 9/23/2019 3:02 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=6.576, Std. Dev.=0.415, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9214, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Boron Analysis Run 9/23/2019 3:02 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Boron (mg/l) Analysis Run 9/23/2019 3:04 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506	506
12/16/2015	<0.2	
2/16/2016	<0.2	
5/23/2016	<0.2	
8/22/2016	<0.2	
11/8/2016	<0.2	
2/7/2017	<0.2	
5/1/2017	<0.2	
7/31/2017	<0.2	
5/21/2019		<0.2

Prediction Limit

Constituent: Boron (mg/l) Analysis Run 9/23/2019 3:04 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	601	601
12/16/2015	<0.2	
2/16/2016	<0.2	
5/23/2016	<0.2	
8/22/2016	0.203	
11/8/2016	<0.2	
2/7/2017	<0.2	
5/2/2017	<0.2	
7/31/2017	<0.2	
5/21/2019		<0.2

Prediction Limit

Constituent: Boron (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	602	602
12/16/2015	5.08	
2/16/2016	5.04	
5/23/2016	5.17	
8/22/2016	4.62	
11/7/2016	4.84	
2/7/2017	4.62	
5/2/2017	4.35	
7/31/2017	4.63	
5/21/2019		4.48

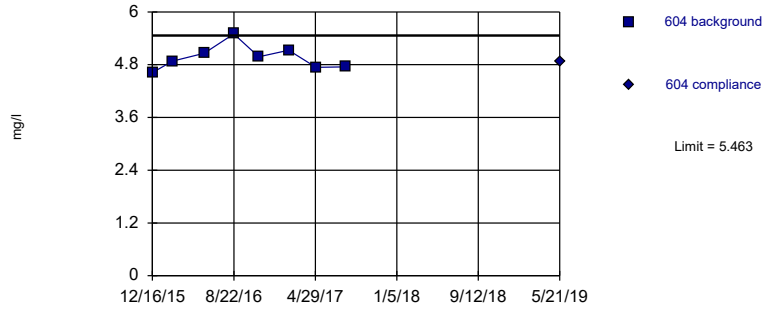
Prediction Limit

Constituent: Boron (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	603	603	
12/16/2015	6.28		
2/16/2016	6.81		
5/23/2016	7.06		
8/22/2016	6.91		
11/7/2016	6.43		
2/7/2017	6.39		
5/2/2017	5.83		
7/31/2017	6.9		
5/21/2019		7.35	
7/15/2019	6.49		1st verification sample

Within Limit

Prediction Limit Intrawell Parametric

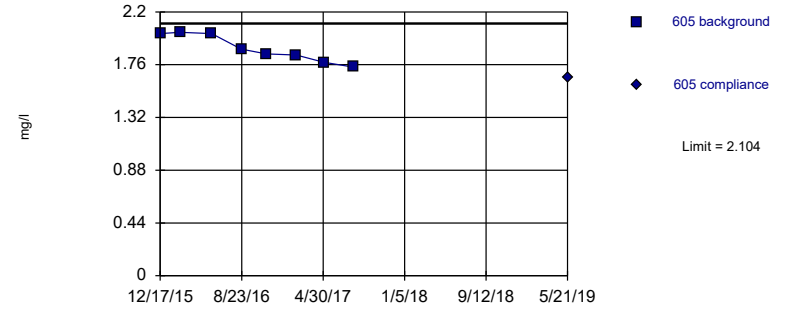


Background Data Summary: Mean=4.958, Std. Dev.=0.2791, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.939, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Boron Analysis Run 9/23/2019 3:02 PM View: LF CCR III
 Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit Intrawell Parametric

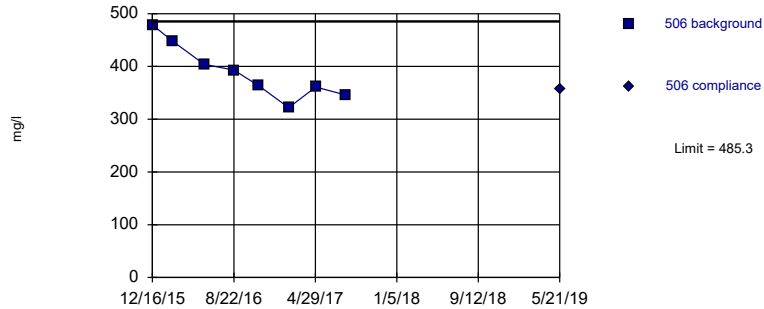


Background Data Summary: Mean=1.896, Std. Dev.=0.1145, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8853, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Boron Analysis Run 9/23/2019 3:02 PM View: LF CCR III
 Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit Intrawell Parametric

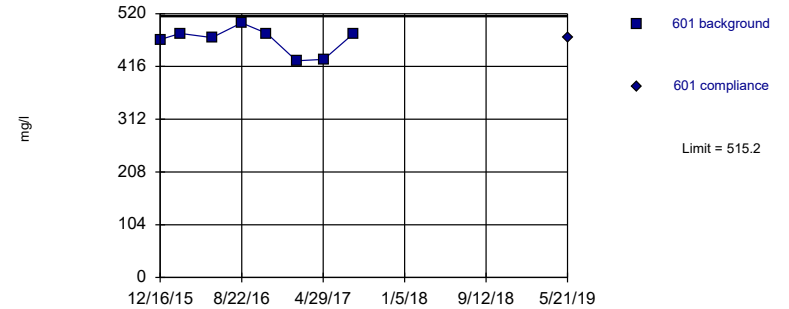


Background Data Summary: Mean=389.5, Std. Dev.=52.94, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9493, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 9/23/2019 3:02 PM View: LF CCR III
 Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=467.9, Std. Dev.=26.16, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8556, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 9/23/2019 3:02 PM View: LF CCR III
 Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Boron (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	604	604
12/16/2015	4.62	
2/16/2016	4.88	
5/23/2016	5.06	
8/22/2016	5.5	
11/7/2016	4.98	
2/7/2017	5.13	
5/2/2017	4.74	
7/31/2017	4.75	
5/21/2019		4.86

Prediction Limit

Constituent: Boron (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	605	605
12/17/2015	2.02	
2/16/2016	2.03	
5/23/2016	2.02	
8/22/2016	1.89	
11/7/2016	1.85	
2/7/2017	1.84	
5/2/2017	1.78	
7/31/2017	1.74	
5/21/2019		1.65

Prediction Limit

Constituent: Calcium (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506	506
12/16/2015	479	
2/16/2016	448	
5/23/2016	404	
8/22/2016	393	
11/8/2016	363	
2/7/2017	322	
5/1/2017	361	
7/31/2017	346	
5/21/2019		357

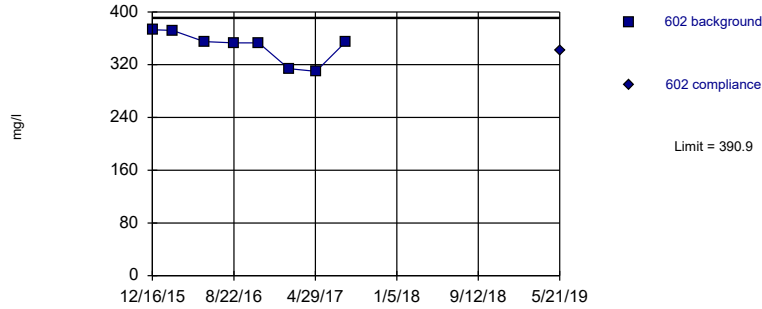
Prediction Limit

Constituent: Calcium (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	601	601
12/16/2015	469	
2/16/2016	481	
5/23/2016	473	
8/22/2016	502	
11/8/2016	481	
2/7/2017	427	
5/2/2017	430	
7/31/2017	480	
5/21/2019		472

Within Limit

Prediction Limit
Intrawell Parametric

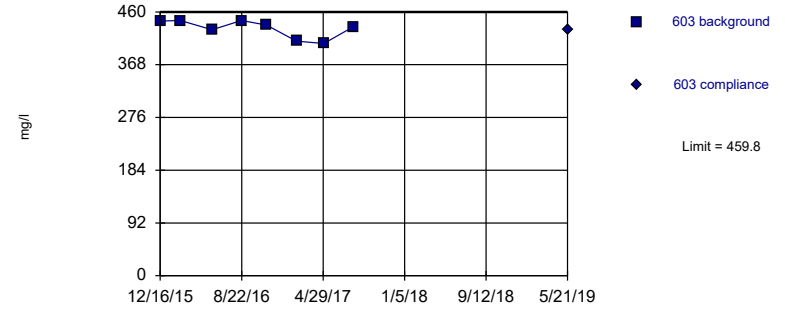


Background Data Summary: Mean=348, Std. Dev.=23.71, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8221, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

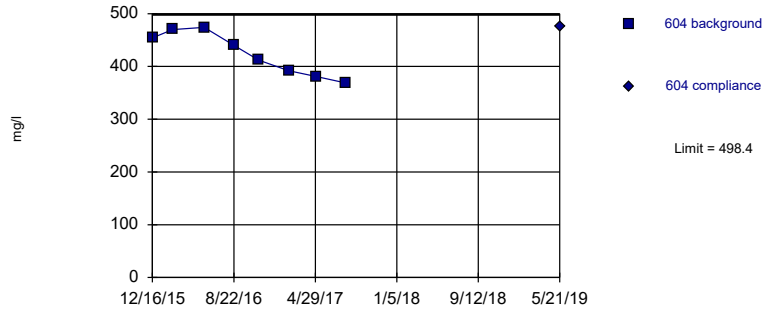


Background Data Summary: Mean=431, Std. Dev.=15.9, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8323, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=424, Std. Dev.=41.08, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.917, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

Prediction Limit

Constituent: Calcium (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	602	602
12/16/2015	373	
2/16/2016	372	
5/23/2016	355	
8/22/2016	353	
11/7/2016	353	
2/7/2017	314	
5/2/2017	310	
7/31/2017	354	
5/21/2019		342

Prediction Limit

Constituent: Calcium (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	603	603
12/16/2015	444	
2/16/2016	445	
5/23/2016	429	
8/22/2016	445	
11/7/2016	437	
2/7/2017	409	
5/2/2017	405	
7/31/2017	434	
5/21/2019		429

Prediction Limit

Constituent: Calcium (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	604	604
12/16/2015	454	
2/16/2016	470	
5/23/2016	474	
8/22/2016	440	
11/7/2016	412	
2/7/2017	392	
5/2/2017	381	
7/31/2017	369	
5/21/2019		476

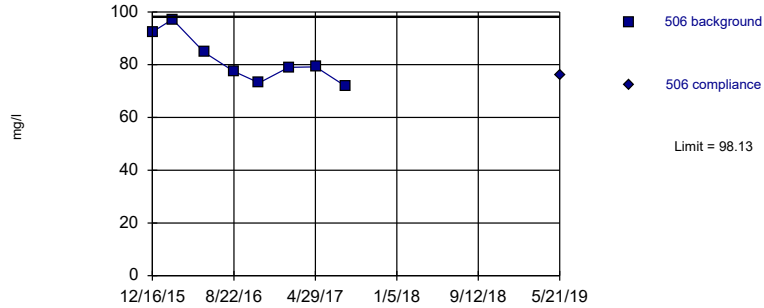
Prediction Limit

Constituent: Calcium (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	605	605
12/17/2015	427	
2/16/2016	426	
5/23/2016	412	
8/22/2016	431	
11/7/2016	407	
2/7/2017	367	
5/2/2017	376	
7/31/2017	415	
5/21/2019		416

Within Limit

Prediction Limit Intrawell Parametric

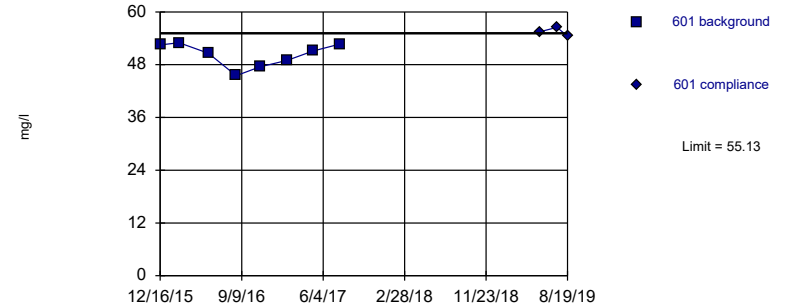


Background Data Summary: Mean=81.88, Std. Dev.=8.982, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9113, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit Intrawell Parametric

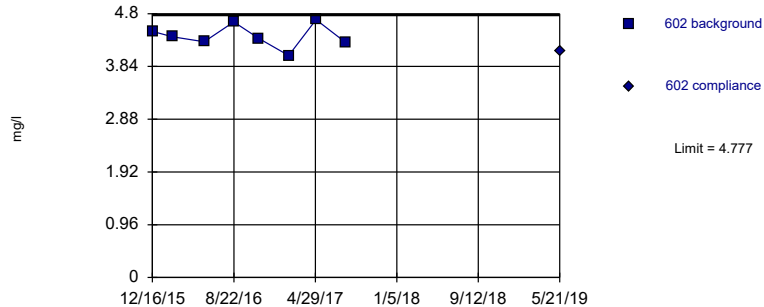


Background Data Summary: Mean=50.24, Std. Dev.=2.703, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9098, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit Intrawell Parametric

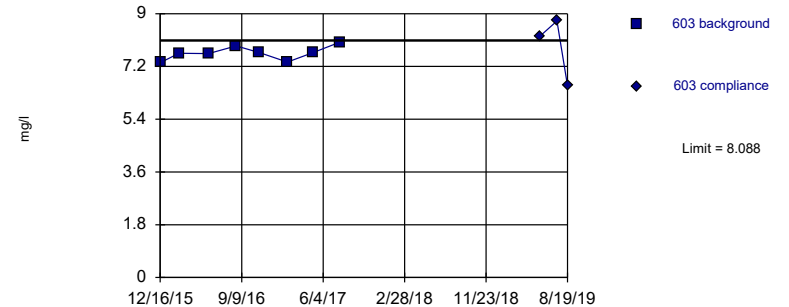


Background Data Summary: Mean=4.395, Std. Dev.=0.2111, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9535, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=7.655, Std. Dev.=0.239, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9121, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Chloride (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506	506
12/16/2015	92.4	
2/16/2016	97.2	
5/23/2016	84.7	
8/22/2016	77.5	
11/8/2016	73.1	
2/7/2017	79	
5/1/2017	79.2	
7/31/2017	71.9	
5/21/2019		76

Prediction Limit

Constituent: Chloride (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	601	601	
12/16/2015	52.5		
2/16/2016	53		
5/23/2016	50.6		
8/22/2016	45.5		
11/8/2016	47.5		
2/7/2017	49		
5/2/2017	51.1		
7/31/2017	52.7		
5/21/2019		55.5	
7/15/2019		56.5	1st verification sample
8/19/2019		54.5	2nd verification sample

Prediction Limit

Constituent: Chloride (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	602	602
12/16/2015	4.48	
2/16/2016	4.38	
5/23/2016	4.29	
8/22/2016	4.65	
11/7/2016	4.35	
2/7/2017	4.04	
5/2/2017	4.69	
7/31/2017	4.28	
5/21/2019		4.11

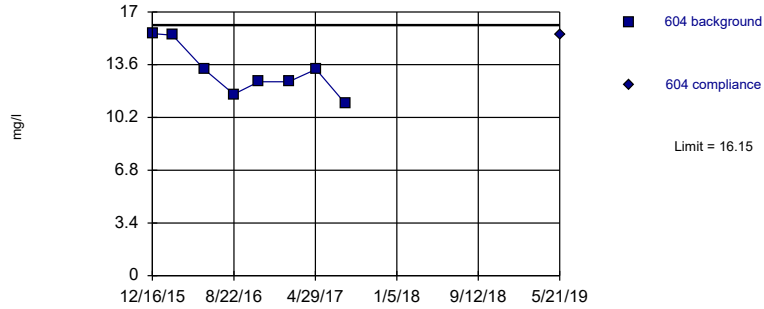
Prediction Limit

Constituent: Chloride (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	603	603	
12/16/2015	7.33		
2/16/2016	7.65		
5/23/2016	7.64		
8/22/2016	7.9		
11/7/2016	7.67		
2/7/2017	7.35		
5/2/2017	7.67		
7/31/2017	8.03		
5/21/2019		8.24	
7/15/2019		8.75	1st verification sample
8/19/2019		6.54	2nd verification sample

Within Limit

Prediction Limit Intrawell Parametric

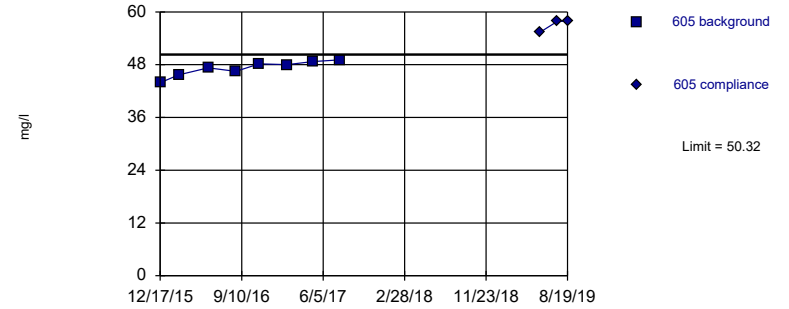


Background Data Summary: Mean=13.19, Std. Dev.=1.635, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9029, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Exceeds Limit

Prediction Limit Intrawell Parametric

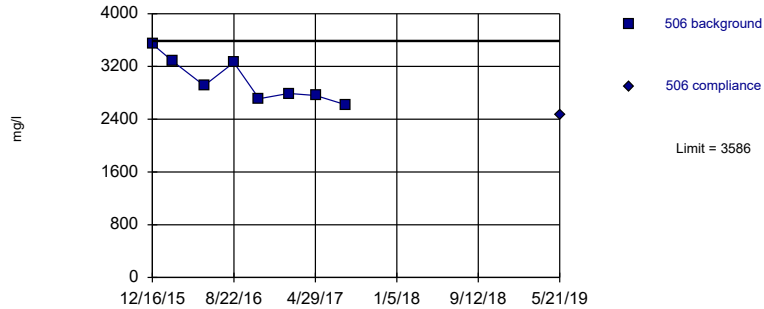


Background Data Summary: Mean=47.18, Std. Dev.=1.738, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9293, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit Intrawell Parametric

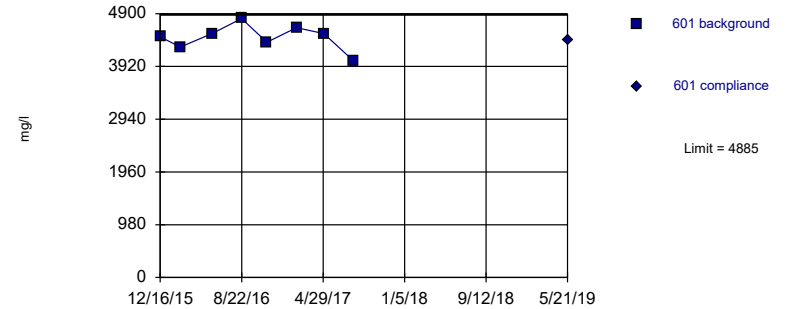


Background Data Summary: Mean=2984, Std. Dev.=332.5, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8925, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=4458, Std. Dev.=236.1, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9764, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Chloride (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	604	604
12/16/2015	15.6	
2/16/2016	15.5	
5/23/2016	13.3	
8/22/2016	11.7	
11/7/2016	12.5	
2/7/2017	12.5	
5/2/2017	13.3	
7/31/2017	11.1	
5/21/2019		15.5

Prediction Limit

Constituent: Chloride (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	605	605	
12/17/2015	43.9		
2/16/2016	45.7		
5/23/2016	47.3		
8/22/2016	46.5		
11/7/2016	48.2		
2/7/2017	48		
5/2/2017	48.7		
7/31/2017	49.1		
5/21/2019		55.4	
7/15/2019		57.8	1st verification sample
8/19/2019		57.9	2nd verification sample

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III

Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506	506
12/16/2015	3540	
2/16/2016	3280	
5/23/2016	2910	
8/22/2016	3260	
11/8/2016	2710	
2/7/2017	2790	
5/1/2017	2760	
7/31/2017	2620	
5/21/2019		2460

Prediction Limit

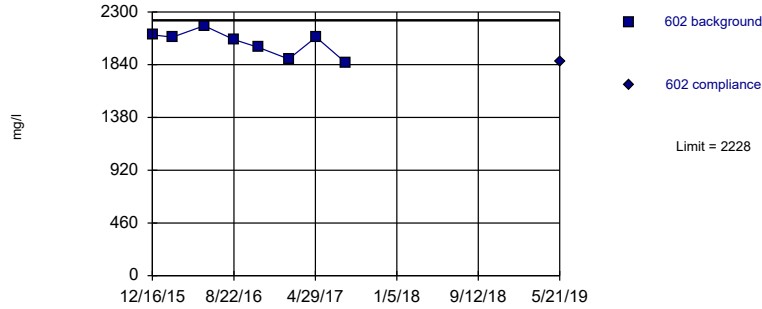
Constituent: Dissolved Solids (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III

Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	601	601
12/16/2015	4470	
2/16/2016	4280	
5/23/2016	4530	
8/22/2016	4810	
11/8/2016	4370	
2/7/2017	4640	
5/2/2017	4530	
7/31/2017	4030	
5/21/2019		4410

Within Limit

Prediction Limit
Intrawell Parametric

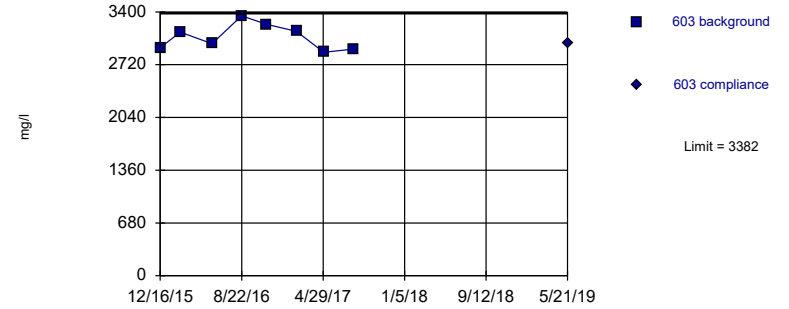


Background Data Summary: Mean=2030, Std. Dev.=109.2, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9195, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

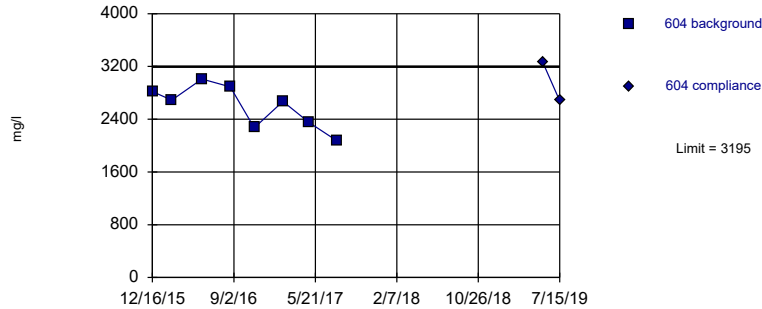


Background Data Summary: Mean=3076, Std. Dev.=169.1, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9267, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

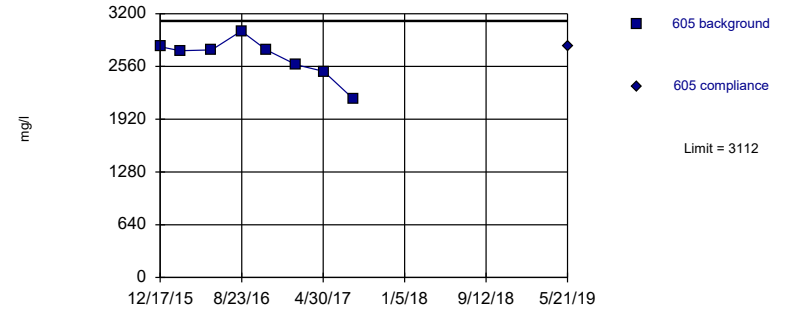


Background Data Summary: Mean=2596, Std. Dev.=330.8, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9393, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=2664, Std. Dev.=247.4, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9059, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III

Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	602	602
12/16/2015	2100	
2/16/2016	2080	
5/23/2016	2180	
8/22/2016	2060	
11/7/2016	1990	
2/7/2017	1890	
5/2/2017	2080	
7/31/2017	1860	
5/21/2019		1870

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III

Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	603	603
12/16/2015	2940	
2/16/2016	3140	
5/23/2016	2990	
8/22/2016	3350	
11/7/2016	3240	
2/7/2017	3150	
5/2/2017	2880	
7/31/2017	2920	
5/21/2019		2990

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III

Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	604	604	
12/16/2015	2820		
2/16/2016	2690		
5/23/2016	3010		
8/22/2016	2890		
11/7/2016	2270		
2/7/2017	2670		
5/2/2017	2350		
7/31/2017	2070		
5/21/2019		3270	
7/15/2019		2680	1st verification sample

Prediction Limit

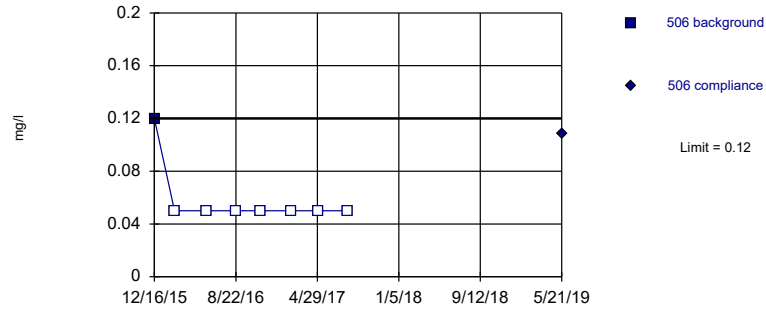
Constituent: Dissolved Solids (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III

Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	605	605
12/17/2015	2800	
2/16/2016	2750	
5/23/2016	2760	
8/22/2016	2990	
11/7/2016	2760	
2/7/2017	2580	
5/2/2017	2500	
7/31/2017	2170	
5/21/2019		2810

Within Limit

Prediction Limit
Intrawell Non-parametric

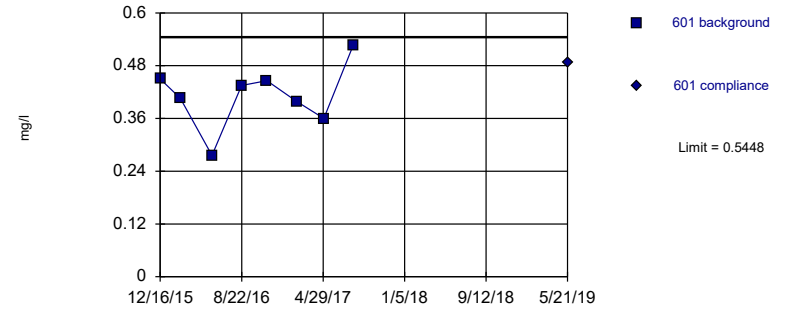


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality; data were not deseasonalized.

Constituent: Fluoride Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

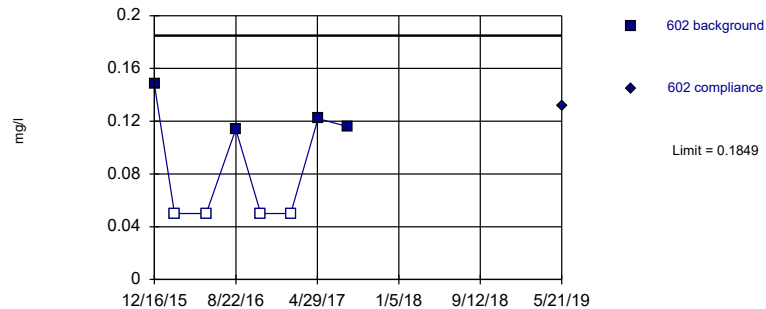


Background Data Summary: Mean=0.4123, Std. Dev.=0.07322, n=8. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9578, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric

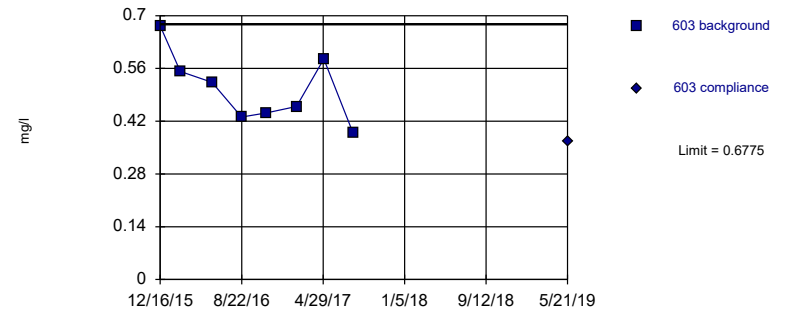


Background Data Summary (after Aitchison's Adjustment): Mean=0.0625, Std. Dev.=0.0676, n=8, 50% NDs. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7877, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=0.5066, Std. Dev.=0.0944, n=8. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9541, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Fluoride (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506	506
12/16/2015	0.12	
2/16/2016	<0.1	
5/23/2016	<0.1	
8/22/2016	<0.1	
11/8/2016	<0.1	
2/7/2017	<0.1	
5/1/2017	<0.1	
7/31/2017	<0.1	
5/21/2019		0.108

Prediction Limit

Constituent: Fluoride (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	601	601
12/16/2015	0.45	
2/16/2016	0.406	
5/23/2016	0.276	
8/22/2016	0.435	
11/8/2016	0.446	
2/7/2017	0.399	
5/2/2017	0.36	
7/31/2017	0.526	
5/21/2019		0.487

Prediction Limit

Constituent: Fluoride (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	602	602
12/16/2015	0.148	
2/16/2016	<0.1	
5/23/2016	<0.1	
8/22/2016	0.114	
11/7/2016	<0.1	
2/7/2017	<0.1	
5/2/2017	0.122	
7/31/2017	0.116	
5/21/2019		0.132

Prediction Limit

Constituent: Fluoride (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	603	603
12/16/2015	0.673	
2/16/2016	0.552	
5/23/2016	0.523	
8/22/2016	0.431	
11/7/2016	0.442	
2/7/2017	0.459	
5/2/2017	0.585	
7/31/2017	0.388	
5/21/2019		0.365

Prediction Limit

Constituent: Fluoride (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	604	604
12/16/2015	0.515	
2/16/2016	0.497	
5/23/2016	0.437	
8/22/2016	0.468	
11/7/2016	0.468	
2/7/2017	0.467	
5/2/2017	0.45	
7/31/2017	0.601	
5/21/2019		0.519

Prediction Limit

Constituent: Fluoride (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	605	605
12/17/2015	0.246	
2/16/2016	0.156	
5/23/2016	0.166	
8/22/2016	0.191	
11/7/2016	0.203	
2/7/2017	0.187	
5/2/2017	0.197	
7/31/2017	0.2	
5/21/2019		0.222

Prediction Limit

Constituent: pH (S.U.) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506	506
12/16/2015	5.11	
2/16/2016	5.56	
5/23/2016	5.47	
8/22/2016	5.57	
11/8/2016	6.04	
2/7/2017	9.26	
5/1/2017	5.51	
7/31/2017	5.51	
5/21/2019		5.49

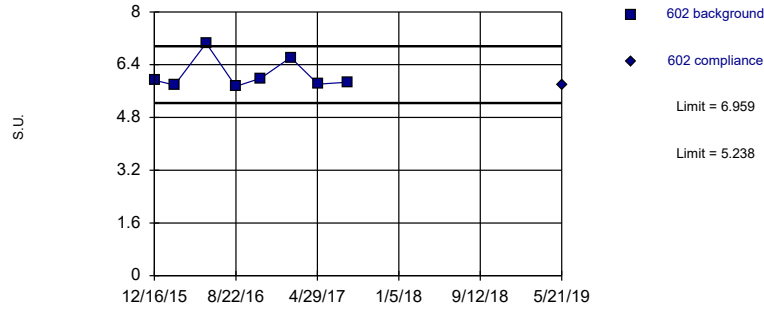
Prediction Limit

Constituent: pH (S.U.) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	601	601	
12/16/2015	5.12		
2/16/2016	5.73		
5/23/2016	5.58		
8/22/2016	5.44		
11/8/2016	5.26		
2/7/2017	5.41		
5/2/2017	5.45		
7/31/2017	5.44		
5/21/2019		5.34	
7/15/2019		5.96	extra sample
8/19/2019		5.41	extra sample

Within Limits

Prediction Limit Intrawell Parametric

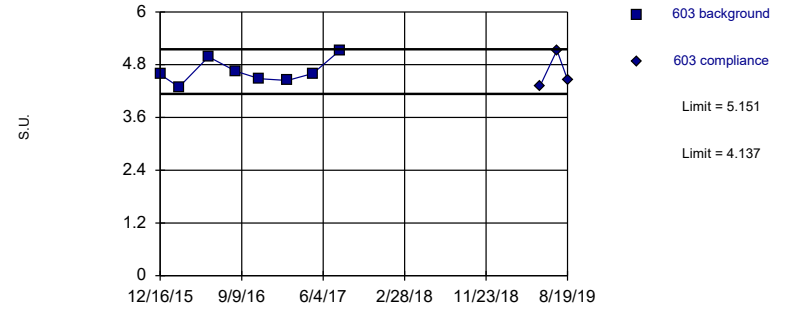


Background Data Summary: Mean=6.099, Std. Dev.=0.4755, n=8. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7552, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: pH Analysis Run 9/23/2019 3:03 PM View: LF CCR III
 Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limits

Prediction Limit Intrawell Parametric

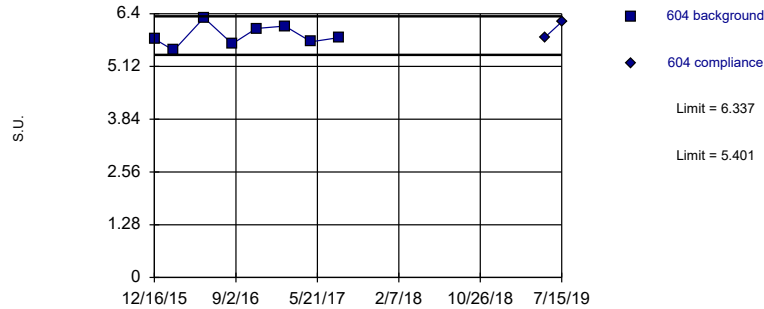


Background Data Summary: Mean=4.644, Std. Dev.=0.28, n=8. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9182, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: pH Analysis Run 9/23/2019 3:03 PM View: LF CCR III
 Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limits

Prediction Limit Intrawell Parametric

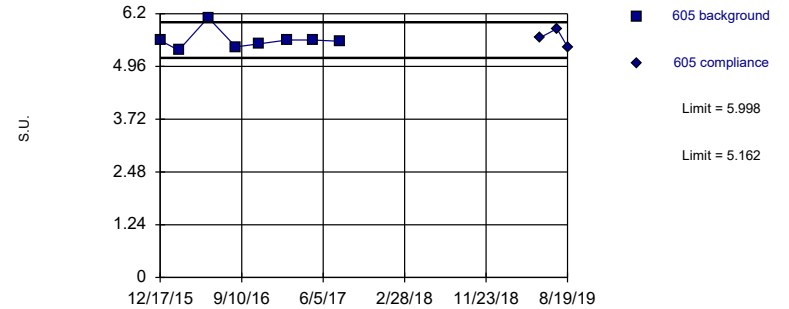


Background Data Summary: Mean=5.869, Std. Dev.=0.2585, n=8. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9645, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: pH Analysis Run 9/23/2019 3:03 PM View: LF CCR III
 Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limits

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=5.58, Std. Dev.=0.2309, n=8. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7625, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: pH Analysis Run 9/23/2019 3:03 PM View: LF CCR III
 Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: pH (S.U.) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	602	602
12/16/2015	5.93	
2/16/2016	5.78	
5/23/2016	7.05	
8/22/2016	5.74	
11/7/2016	5.99	
2/7/2017	6.62	
5/2/2017	5.81	
7/31/2017	5.87	
5/21/2019		5.77

Prediction Limit

Constituent: pH (S.U.) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	603	603	
12/16/2015	4.58		
2/16/2016	4.29		
5/23/2016	4.98		
8/22/2016	4.65		
11/7/2016	4.48		
2/7/2017	4.44		
5/2/2017	4.6		
7/31/2017	5.13		
5/21/2019		4.32	
7/15/2019		5.13	extra sample
8/19/2019		4.46	extra sample

Prediction Limit

Constituent: pH (S.U.) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

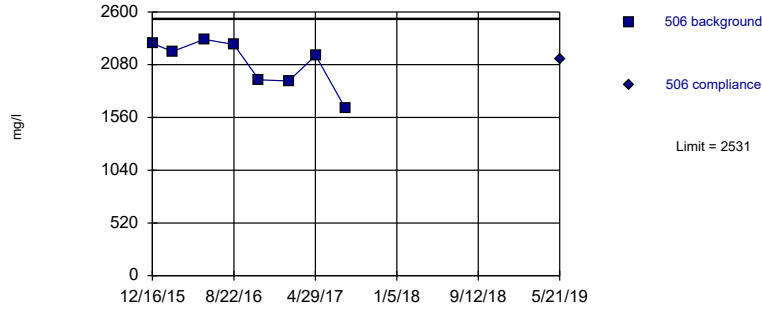
	604	604	
12/16/2015	5.79		
2/16/2016	5.51		
5/23/2016	6.3		
8/22/2016	5.67		
11/7/2016	6.04		
2/7/2017	6.1		
5/2/2017	5.72		
7/31/2017	5.82		
5/21/2019		5.82	
7/15/2019		6.2	extra sample

Prediction Limit

Constituent: pH (S.U.) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	605	605	
12/17/2015	5.57		
2/16/2016	5.34		
5/23/2016	6.11		
8/22/2016	5.42		
11/7/2016	5.49		
2/7/2017	5.58		
5/2/2017	5.58		
7/31/2017	5.55		
5/21/2019		5.64	
7/15/2019		5.85	extra sample
8/19/2019		5.42	extra sample

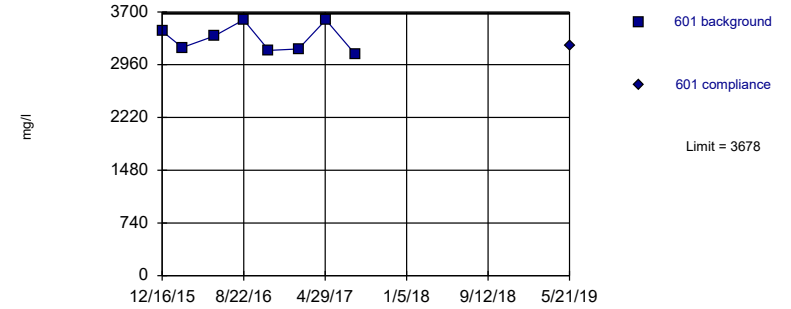
Within Limit Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=2098, Std. Dev.=239.7, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.871, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

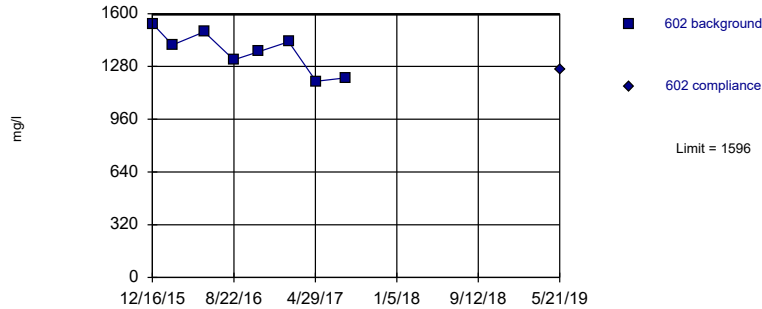
Within Limit Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=3328, Std. Dev.=193.7, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8736, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

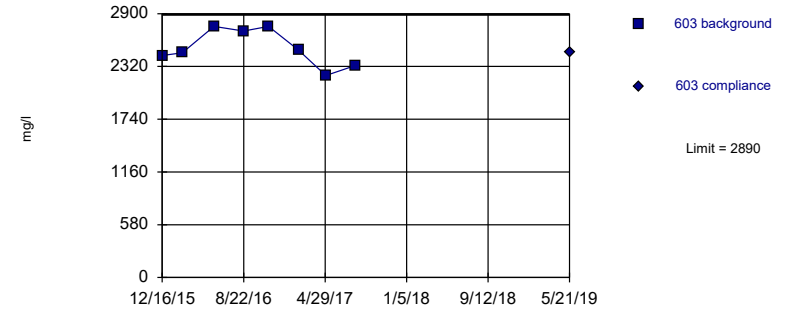
Within Limit Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=1370, Std. Dev.=124.8, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9502, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=2524, Std. Dev.=202.3, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9133, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	506	506
12/16/2015	2290	
2/16/2016	2210	
5/23/2016	2330	
8/22/2016	2280	
11/8/2016	1930	
2/7/2017	1920	
5/1/2017	2170	
7/31/2017	1650	
5/21/2019		2130

Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	601	601
12/16/2015	3430	
2/16/2016	3200	
5/23/2016	3360	
8/22/2016	3590	
11/8/2016	3160	
2/7/2017	3180	
5/2/2017	3590	
7/31/2017	3110	
5/21/2019		3230

Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	602	602
12/16/2015	1540	
2/16/2016	1410	
5/23/2016	1490	
8/22/2016	1320	
11/7/2016	1370	
2/7/2017	1430	
5/2/2017	1190	
7/31/2017	1210	
5/21/2019		1260

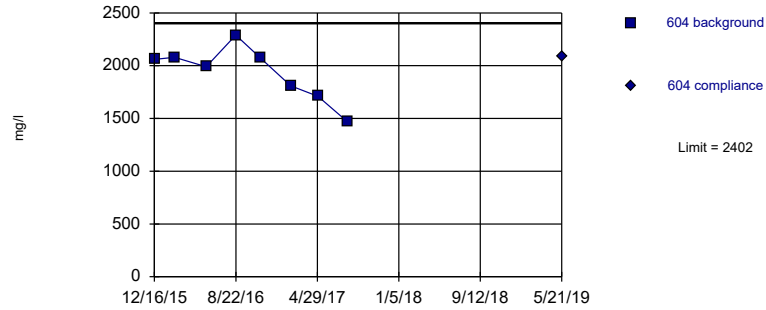
Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	603	603
12/16/2015	2440	
2/16/2016	2470	
5/23/2016	2760	
8/22/2016	2710	
11/7/2016	2760	
2/7/2017	2500	
5/2/2017	2220	
7/31/2017	2330	
5/21/2019		2480

Within Limit

Prediction Limit
Intrawell Parametric

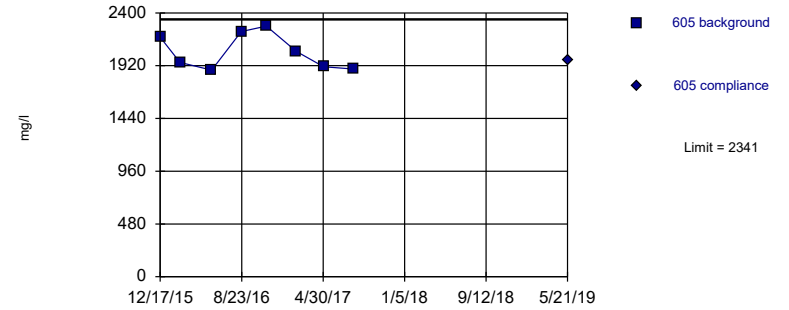


Background Data Summary: Mean=1935, Std. Dev.=258.1, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9413, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=2046, Std. Dev.=163.1, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8694, critical = 0.749. Kappa = 1.81 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 9/23/2019 3:03 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	604	604
12/16/2015	2060	
2/16/2016	2080	
5/23/2016	1990	
8/22/2016	2290	
11/7/2016	2070	
2/7/2017	1810	
5/2/2017	1710	
7/31/2017	1470	
5/21/2019		2090

Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 9/23/2019 3:05 PM View: LF CCR III
Montrose Generating Station UWL Client: SCS Engineers Data: Montrose

	605	605
12/17/2015	2180	
2/16/2016	1950	
5/23/2016	1880	
8/22/2016	2230	
11/7/2016	2280	
2/7/2017	2050	
5/2/2017	1910	
7/31/2017	1890	
5/21/2019		1970

Prediction Limit

Montrose Generating Station UWL Client: SCS Engineers Data: Montrose Printed 9/23/2019, 3:05 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/l)	506	0.2	n/a	5/21/2019	0.1ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
Boron (mg/l)	601	0.203	n/a	5/21/2019	0.1ND	No	8	87.5	n/a	0.005912	NP Intra (NDs) 1 of 3
Boron (mg/l)	602	5.31	n/a	5/21/2019	4.48	No	8	0	No	0.00188	Param Intra 1 of 3
Boron (mg/l)	603	7.327	n/a	7/15/2019	6.49	No	8	0	No	0.00188	Param Intra 1 of 3
Boron (mg/l)	604	5.463	n/a	5/21/2019	4.86	No	8	0	No	0.00188	Param Intra 1 of 3
Boron (mg/l)	605	2.104	n/a	5/21/2019	1.65	No	8	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/l)	506	485.3	n/a	5/21/2019	357	No	8	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/l)	601	515.2	n/a	5/21/2019	472	No	8	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/l)	602	390.9	n/a	5/21/2019	342	No	8	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/l)	603	459.8	n/a	5/21/2019	429	No	8	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/l)	604	498.4	n/a	5/21/2019	476	No	8	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/l)	605	450.8	n/a	5/21/2019	416	No	8	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/l)	506	98.13	n/a	5/21/2019	76	No	8	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/l)	601	55.13	n/a	8/19/2019	54.5	No	8	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/l)	602	4.777	n/a	5/21/2019	4.11	No	8	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/l)	603	8.088	n/a	8/19/2019	6.54	No	8	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/l)	604	16.15	n/a	5/21/2019	15.5	No	8	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/l)	605	50.32	n/a	8/19/2019	57.9	Yes	8	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	506	3586	n/a	5/21/2019	2460	No	8	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	601	4885	n/a	5/21/2019	4410	No	8	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	602	2228	n/a	5/21/2019	1870	No	8	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	603	3382	n/a	5/21/2019	2990	No	8	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	604	3195	n/a	7/15/2019	2680	No	8	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	605	3112	n/a	5/21/2019	2810	No	8	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/l)	506	0.12	n/a	5/21/2019	0.108	No	8	87.5	n/a	0.005912	NP Intra (NDs) 1 of 3
Fluoride (mg/l)	601	0.5448	n/a	5/21/2019	0.487	No	8	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/l)	602	0.1849	n/a	5/21/2019	0.132	No	8	50	No	0.00188	Param Intra 1 of 3
Fluoride (mg/l)	603	0.6775	n/a	5/21/2019	0.365	No	8	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/l)	604	0.5818	n/a	5/21/2019	0.519	No	8	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/l)	605	0.2422	n/a	5/21/2019	0.222	No	8	0	No	0.00188	Param Intra 1 of 3
pH (S.U.)	506	9.26	5.11	5/21/2019	5.49	No	8	0	n/a	0.01182	NP Intra (normality) ...
pH (S.U.)	601	5.763	5.095	8/19/2019	5.41	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	602	6.959	5.238	5/21/2019	5.77	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	603	5.151	4.137	8/19/2019	4.46	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	604	6.337	5.401	7/15/2019	6.2	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	605	5.998	5.162	8/19/2019	5.42	No	8	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/l)	506	2531	n/a	5/21/2019	2130	No	8	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/l)	601	3678	n/a	5/21/2019	3230	No	8	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/l)	602	1596	n/a	5/21/2019	1260	No	8	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/l)	603	2890	n/a	5/21/2019	2480	No	8	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/l)	604	2402	n/a	5/21/2019	2090	No	8	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/l)	605	2341	n/a	5/21/2019	1970	No	8	0	No	0.00188	Param Intra 1 of 3

Montrose Generating Station
Determination of Statistically Significant Increases
CCR Landfill
September 30, 2019

ATTACHMENT 2

Sanitas™ Configuration Settings

Exclude data flags:

Data Reading Options

- Individual Observations
- Mean of Each: Month
- Median of Each: Season

Automatically Process Resamples...

- Black and White Output
- Four Plots Per Page
 - Always Combine Data Pages...
 - Include Tick Marks on Data Page
 - Use Constituent Name for Graph Title
- Draw Border Around Text Reports and Data Pages
- Enlarge/Reduce Fonts (Graphs):
- Enlarge/Reduce Fonts (Data/Text Reports):
- Wide Margins (on reports without explicit setting)
- Use CAS# (Not Const. Name)
- Truncate File Names to Characters
- Include Limit Lines when found in Database...
- Show Deselected Data on Time Series ▾
- Show Deselected Data on all Data Pages ▾

- Prompt to Overwrite/Append Summary Tables
- Round Limits to Sig. Digits (when not set in data file)
- User-Set Scale
- Indicate Background Data
- Show Exact Dates
- Thick Plot Lines

Zoom Factor: ▾

- Output Decimal Precision
- Less Precision
 - Normal Precision
 - More Precision

Store Print Jobs in Multiple Constituent Mode

Printer: ▾

Test for Normality using Shapiro-Wilk/Francia at Alpha = 0.01

Use Non-Parametric Test when Non-Detects Percent > 50

Use Aitchison's Adjustment when Non-Detects Percent > 15

Optional Further Refinement: Use Aitchison's when NDs % > 50

Use Poisson Prediction Limit when Non-Detects Percent > 90

Transformation

Use Ladder of Powers

Natural Log or No Transformation

Never Transform

Use Specific Transformation: Natural Log

Use Best W Statistic

Plot Transformed Values

Deseasonalize (Intra- and InterWell)

If Seasonality Is Detected

If Seasonality Is Detected Or Insufficient to Test

Always (When Sufficient Data) Never

Always Use Non-Parametric

Facility

Statistical Evaluations per Year:

Constituents Analyzed:

Downgradient (Compliance) Wells:

Sampling Plan

Comparing Individual Observations

1 of 1 1 of 2 1 of 3 1 of 4

2 of 4 ("Modified California")

IntraWell Other

Stop if Background Trend Detected at Alpha = 0.05

Plot Background Data

Override Standard Deviation:

Override DF: Override Kappa:

Automatically Remove Background Outliers

2-Tailed Test Mode...

Show Deselected Data Lighter

Non-Parametric Limit = Highest Background Value

Non-Parametric Limit when 100% Non-Detects:

Highest/Second Highest Background Value

Most Recent PQL if available, or MDL

Most Recent Background Value (subst. method)

Rank Von Neumann, Wilcoxon Rank Sum / Mann-Whitney

- Use Modified Alpha...
- 2-Tailed Test Mode...
- Combine Background Wells on Mann-Whitney...

Outlier Tests

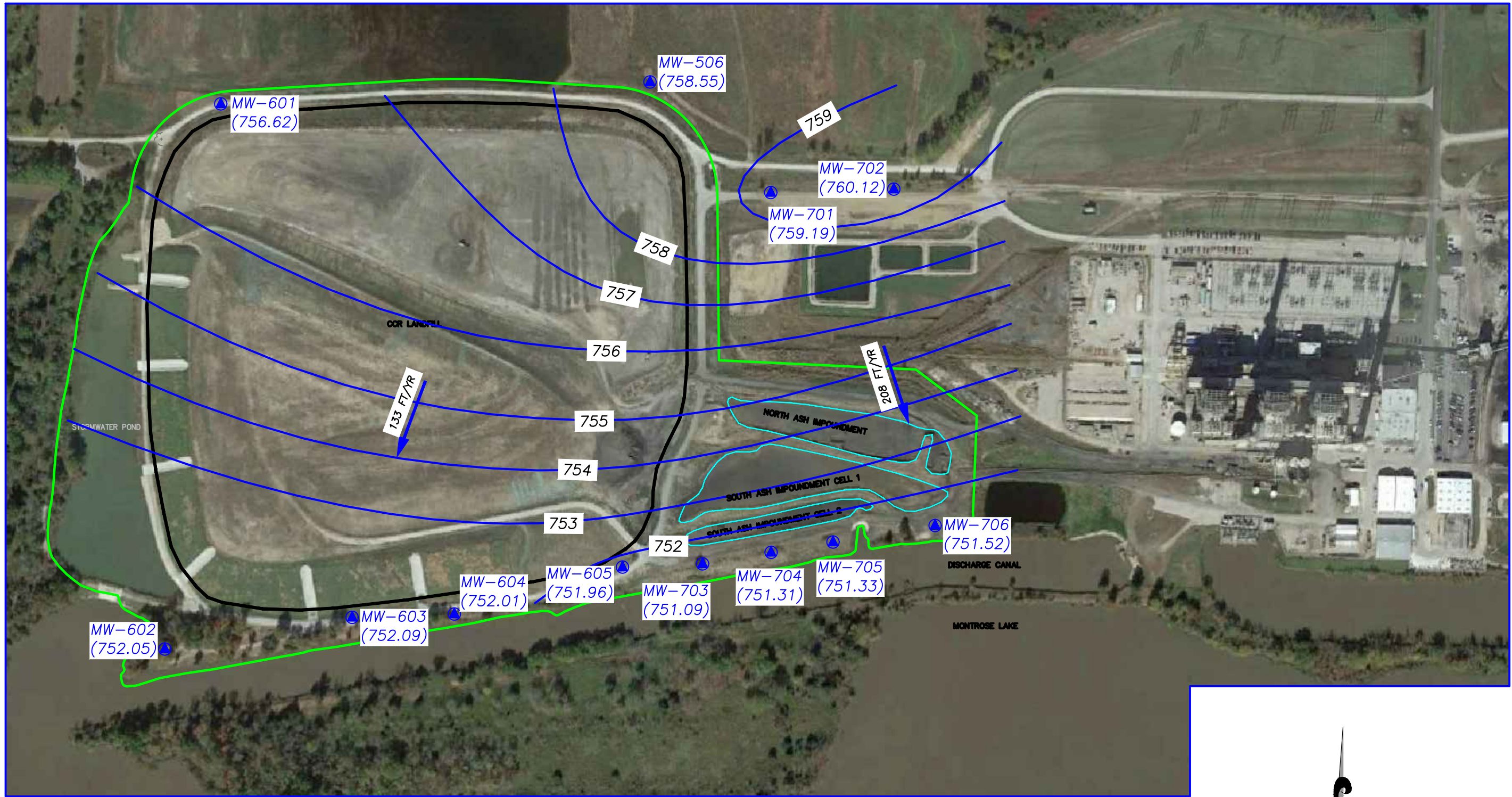
- EPA 1989 Outlier Screening (fixed alpha of 0.05)
- Dixon's at $\alpha=$ or if n > Rosner's at $\alpha=$ Use EPA Screening to establish Suspected Outliers
- Tukey's Outlier Screening, with IQR Multiplier = Use Ladder of Powers to achieve Best W Stat
- Test For Normality at Alpha =
 - Stop if Non-Normal
 - Continue with Parametric Test if Non-Normal
 - Tukey's if Non-Normal, with IQR Multiplier = Use Ladder of Powers to achieve Best W Stat
- No Outlier If Less Than Times Median
- Apply Rules found in Ohio Guidance Document 0715
- Combine Background Wells on the Outlier Report...

Piper, Stiff Diagram

- Combine Wells Label Constituents
- Combine Dates Label Axes
- Use Default Constituent Names Note Cation-Anion Balance (Piper only)
- Use Constituent Definition File

Jared Morrison
December 20, 2022

ATTACHMENT 3
Groundwater Potentiometric Surface Maps



LEGEND:

- PERMITTED SOLID WASTE FACILITY BOUNDARY (APPROXIMATE)
- CCR LANDFILL UNIT BOUNDARY (APPROXIMATE)
- ▲ MW-506 (757.17) CCR GROUNDWATER MONITORING WELL SYSTEM
- ASH IMPOUNDMENT UNIT BOUNDARY (APPROXIMATE)
- GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS (REPRESENTATIVE OF THIS UNIT)
- ← GROUNDWATER FLOW DIRECTION AND CALCULATED GROUNDWATER FLOW RATE (FT/YR)

NOTES:

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED 10/20/2014.
4. APPROXIMATE BOUNDARY LOCATIONS PROVIDED BY AECOM.
5. WATER LEVEL MEASUREMENTS COMPLETED ON MAY 21, 2019.



CK BY	-
REV	-
DATE	-

SHEET TITLE
**POTENTIOMETRIC SURFACE MAP
 CCR LANDFILL AND ASH IMPOUNDMENT (MAY 2019)**

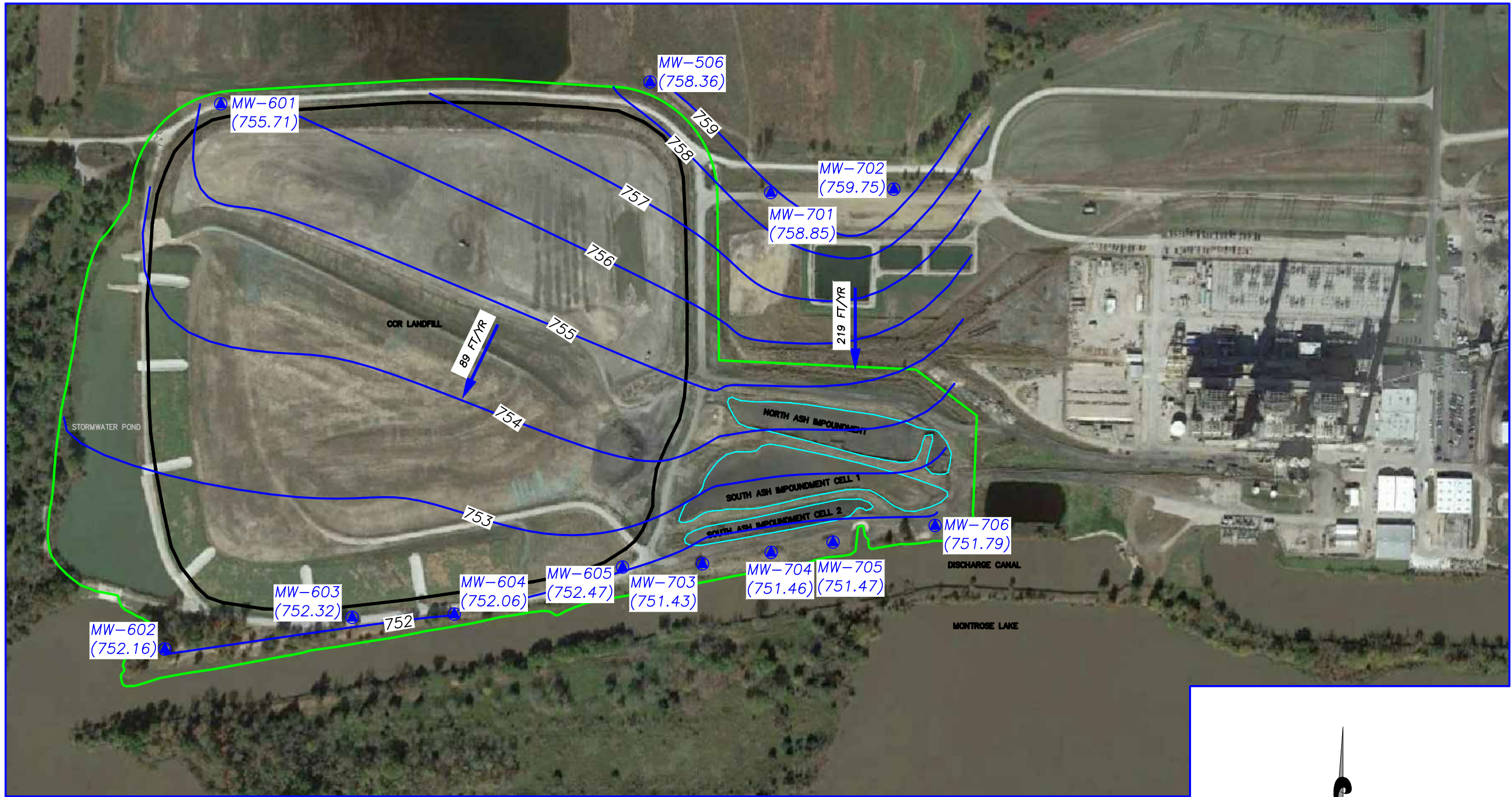
PROJECT TITLE
**2019 GROUNDWATER MONITORING AND
 CORRECTIVE ACTION REPORT ADDENDUM**

CLIENT
**EVERGY METRO, INC.
 MONTROSE GENERATING STATION
 MONTROSE, MISSOURI**

SCS ENGINEERS
 ENVIRONMENTAL CONSULTANTS AND CONTRACTORS
 8575 W. 110th St. Ste. 100
 Overland Park, Kansas 66210
 PH: (913) 681-0030 FAX: (913) 681-0012

PROJ. NO. 27213168.19
 TASK: JRF
 DATE: 12/19/22
 FIGURE NO. **1**

N:\KCP\PROJECTS\GROUNDWATER\DWG\MONTROSE\2019\2019 GROUNDWATER\27213168.18_FIG2_MAY19_V1.DWG

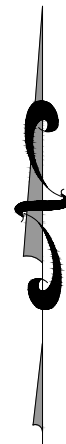
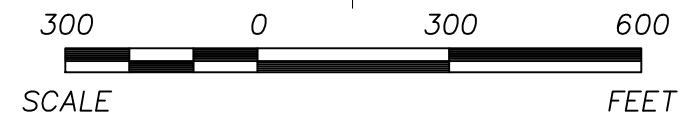


LEGEND:

- PERMITTED SOLID WASTE FACILITY BOUNDARY (APPROXIMATE)
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- ▲ MW-506 (757.17) CCR GROUNDWATER MONITORING WELL SYSTEM
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NOTES:

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED 10/20/2014.
4. APPROXIMATE BOUNDARY LOCATIONS PROVIDED BY AECOM.
5. WATER LEVEL MEASUREMENTS COMPLETED ON NOVEMBER 5, 2019



CK:	-
BY:	-
REV:	△
DATE:	-

SHEET TITLE
POTENTIOMETRIC SURFACE MAP CCR LANDFILL AND ASH IMPOUNDMENT (NOVEMBER 2019)

PROJECT TITLE
2019 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM

CLIENT
**EVERGY METRO, INC.
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PROJ. NO. 27213168.19
 DESK. BY: TGW
 DWN. BY: DAW
 CHK. BY: JRR
 O/A RW BY: JRR
 PROJ. MGR. JRF

CADD FILE:
 27213168.19_FIG2_NOV19_V1.DWG

DATE:
 1/7/2020

FIGURE NO.
2

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