2020 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

UPPER AQC IMPOUNDMENT
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

Presented To:
Evergy Metro, Inc.

SCS ENGINEERS

27217233.20 | January 2021
Revision 1, April 2021
Revision 2, December 16, 2022

8575 W 110th Street, Suite 100
Overland Park, Kansas 66210
913-681-0030

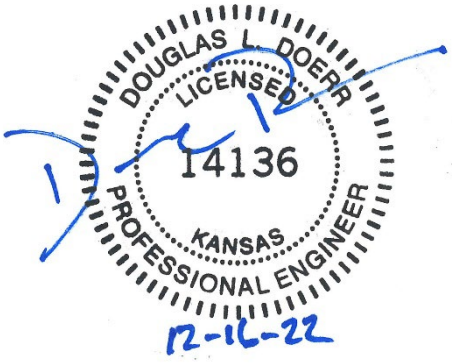
CERTIFICATIONS

I, John R. Rockhold, being a qualified groundwater scientist and Professional Geologist in the State of Kansas, do hereby certify that the 2020 Annual Groundwater Monitoring and Corrective Action Report for the Upper AQC Impoundment at the La Cygne Generating Station was prepared by me or under my direct supervision and fulfills the requirements of 40 CFR 257.90(e).

John R. Rockhold, P.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Kansas, do hereby certify that the 2020 Annual Groundwater Monitoring and Corrective Action Report for the Upper AQC Impoundment at the La Cygne 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

Revision Number	Revision Date	Revision Sections	Summary of Revisions
0	January 2021	NA	Original
1	April 7, 2021	Table of Contents Appendix A	Addition of Potentiometric Surface Maps to Appendix A
2	December 16, 2022	Addendum 1	Added Addendum 1

Table of Contents

Appendices

1 INTRODUCTION

This 2020 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), and subsequent revisions. Specifically, this report was prepared for Evergy Metro, Inc. (Evergy) 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 2020 Annual Groundwater Monitoring and Corrective Action Report for the Upper AQC Impoundment at the La Cygne Generating Station.

1.1 § 257.90(e)(6) SUMMARY

A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:

1.1.1 § 257.90(e)(6)(i) Initial Monitoring Program

At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95;

At the start of the current annual reporting period, (January 1, 2020), the CCR Impoundment was operating under a detection monitoring program in compliance with § 257.94.

1.1.2 § 257.90(e)(6)(ii) Final Monitoring Program

At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95;

At the end of the current annual reporting period, (December 31, 2020), the CCR Impoundment was operating under a detection monitoring program in compliance with § 257.94.

1.1.3 § 257.90(e)(6)(iii) Statistically Significant Increases

If it was determined that there was a statistically significant increase over background for one or more constituents listed in Appendix III to this part pursuant to § 257.94(e):

(A) Identify those constituents listed in Appendix III to this part and the names of the monitoring wells associated with such an increase; and

Monitoring Event	Monitoring Well	Constituent	ASD
Fall 2019	MW-706	Sulfate	Successful
Spring 2020	MW-704	Chloride	Successful
Spring 2020	MW-706	Sulfate	Successful
Spring 2020	TW-1	Sulfate	Successful

(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.

Not applicable because an assessment monitoring program was not initiated.

1.1.4 § 257.90(e)(6)(iv) Statistically Significant Levels

If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in Appendix IV to this part pursuant to § 257.95(g) include all of the following:

(A) Identify those constituents listed in Appendix IV to this part and the names of the monitoring wells associated with such an increase;

Not applicable because there was no assessment monitoring conducted.

(B) Provide the date when the assessment of corrective measures was initiated for the CCR unit;

Not applicable because there was no assessment of corrective measures initiated for the CCR Unit.

(C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit*; and*

Not applicable because there was no assessment of corrective measures initiated for the CCR Unit.

(D) Provide the date when the assessment of corrective measures was completed for the CCR unit.

Not applicable because there was no assessment of corrective measures initiated for the CCR Unit.

1.1.5 § 257.90(e)(6)(v) Selection of Remedy

Whether a remedy was selected pursuant to § 257.97 during the current annual reporting period, and if so, the date of remedy selection; and

Not applicable because corrective measures are not required.

1.1.6 § 257.90(e)(6)(vi) Remedial Activities

Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.

Not applicable because corrective measures are not required.

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 Upper AQC Impoundment and all background (or upgradient) and downgradient monitoring wells with identification numbers for the Upper AQC Impoundment 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 Upper AQC Impoundment in 2020.

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 required to be conducted during the reporting period (2020). Samples collected in 2020 were collected and analyzed for Appendix III detection monitoring constituents. Additionally, Appendix IV constituents were analyzed with the spring event for potential future updating of background data in conformance with EPA Unified Guidance and industry standards. Results of the sampling events are provided in **Appendix B**, **Table 1** (Appendix III Detection Monitoring Results and Appendix IV Results), and **Table 2** (Detection Monitoring Field Measurements). These tables include Fall 2019 semiannual detection monitoring event verification sample data collected and analyzed in 2020; Spring 2020 semiannual detection monitoring data, verification sample data, and supplementary Appendix IV sample data; and, the initial Fall 2020 semiannual detection monitoring data. The dates of sample collection and the monitoring program requiring the sample are also provided in these tables.

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 2020. Only detection monitoring was conducted in 2020.

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 2019 verification sampling and analyses per the certified statistical method,

b. completion of the statistical evaluation of the Fall 2019 semiannual detection monitoring sampling and analysis event per the certified statistical method,

c. completion of the 2019 Annual Groundwater Monitoring and Corrective Action Report,

d. completion of a successful alternative source demonstration for the Fall 2019 semiannual detection monitoring sampling and analysis event,

e. completion of the Spring 2020 semiannual detection monitoring sampling and analysis event with subsequent verification sampling per the certified statistical method, and supplemental Appendix IV sample analysis,

f. completion of the statistical evaluation of the Spring 2020 semiannual detection monitoring sampling and analysis event per the certified statistical method,

g. completion of a successful alternative source demonstration for the Spring 2020 semiannual detection monitoring sampling and analysis event, and

h. initiation of the Fall 2020 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 (2021).

Completion of verification sampling and data analysis, and the statistical evaluation of Fall 2020 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**:

C1 CCR Groundwater Monitoring Alternative Source Demonstration Report November 2019 Groundwater Monitoring Event, Upper AQC Impoundment, La Cygne Generating Station (June 2020)

C2 CCR Groundwater Monitoring Alternative Source Demonstration Report May 2020 Groundwater Monitoring Event, Upper AQC Impoundment, La Cygne Generating Station (December 2020)

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.

2.6 § 257.90(e)(6) OVERVIEW SUMMARY

A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit.

§ 257.90(e)(6) is addressed in Section 1.1 of this report.

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 La Cygne 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 La Cygne Generating Station Upper AQC Impoundment. No warranties, express or implied, are intended or made.

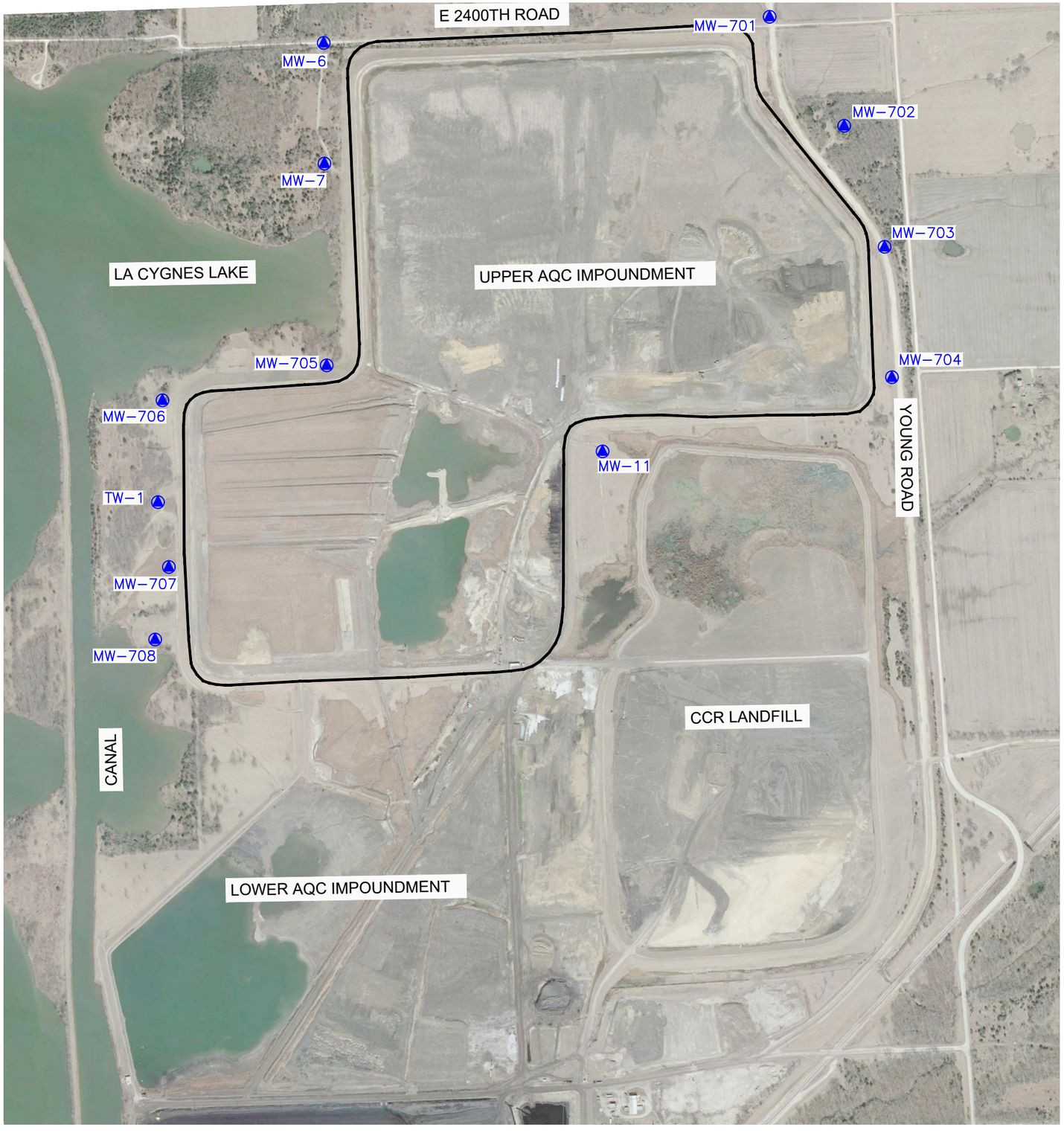
APPENDIX A

FIGURES

Figure 1: Site Map

Figure 2: Potentiometric Surface Map (May 2020)

Figure 3: Potentiometric Surface Map (November 2020)



LEGEND

CCR UNIT BOUNDARY
(APPROXIMATE LIMITS OF UPPER AQC IMPOUNDMENT)

MW-703 CCR GROUNDWATER MONITORING SYSTEM WELLS

NOTES:

1. KDHE FACILITY PERMIT AND LANDFILL PERMIT BOUNDARIES VARY FROM THAT SHOWN.
2. GOOGLE EARTH IMAGE DATED MARCH 2020. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE.
3. BOUNDARY AND MONITOR WELL LOCATIONS ARE PROVIDED BY AECOM.

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SHEET TITLE
SITE MAP
UPPER AQC IMPOUNDMENT
CCR GROUNDWATER MONITORING SYSTEM

PROJECT TITLE
2020 CCR GROUNDWATER MONITORING
AND CORRECTIVE ACTION REPORT

CLIENT
EVERGY METRO, INC
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

SCS ENGINEERS
8575 W. 110th St. Ste. 100
Overland Park, Kansas 66210
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PROJ. NO. 27217233.20
DSN. BY: ALR
CHK. BY: JF
Q/A RVW BY: JRR
PROJ. MGR JRR
DSN. BY: ALR

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LA CYGNE LF LAQC IMP & UAQC FIG 1_NOVEMBER 2020 - COMBINED.DWG

DATE: 1/15/21

FIGURE NO. 1

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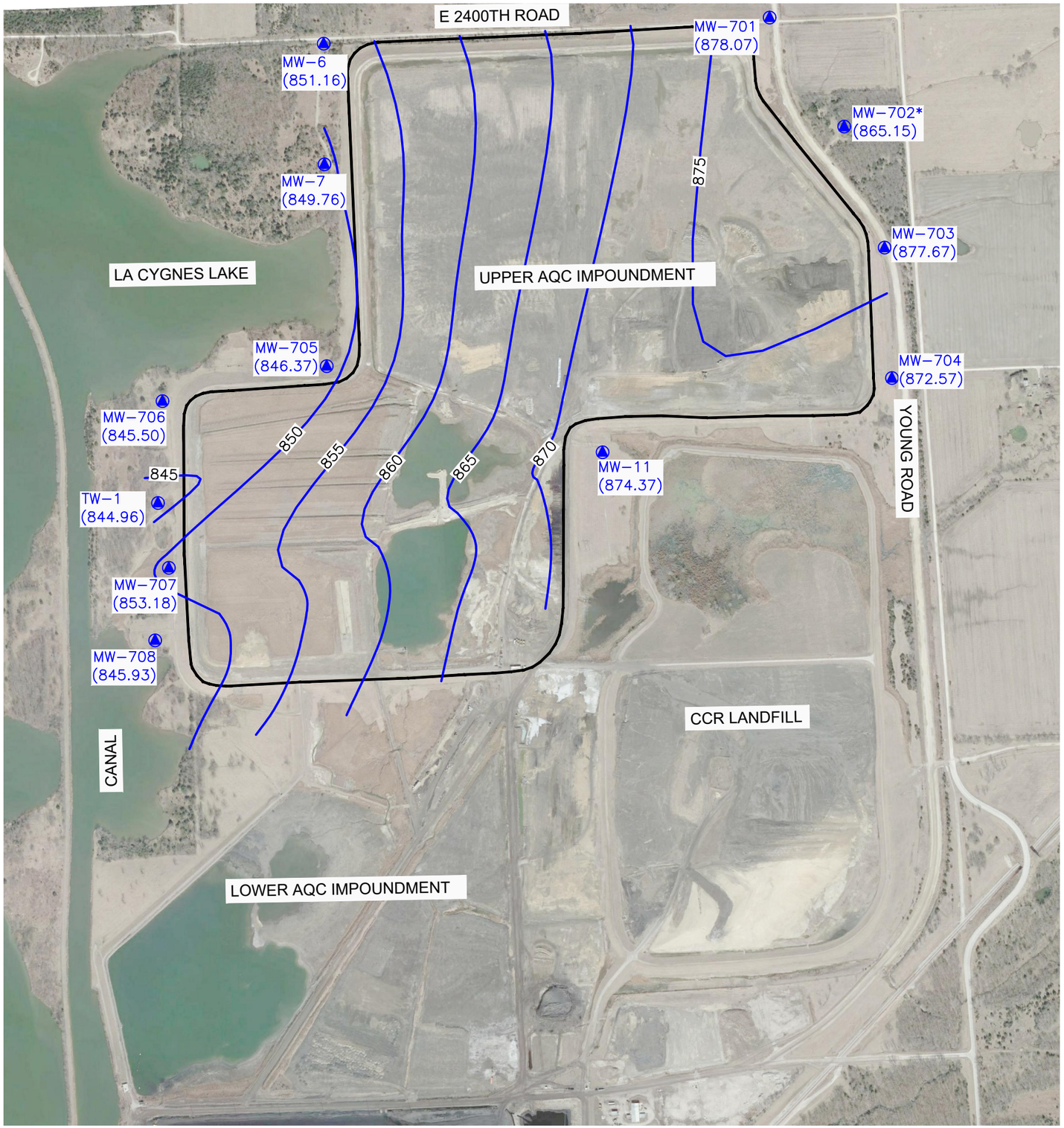

LEGEND

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS OF UPPER AQC IMPOUNDMENT)
- MW-703 (877.00) CCR GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
- —875— GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS (REPRESENTATIVE FOR THIS UNIT)
- MW-702* INDICATES WELL NOT USED IN POTENTIOMETRIC SURFACE MAP CREATION

NOTES:

1. KDHE FACILITY PERMIT AND LANDFILL PERMIT BOUNDARIES VARY FROM THAT SHOWN.
2. GOOGLE EARTH IMAGE DATED MARCH 2020. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE.
3. BOUNDARY AND MONITOR WELL LOCATIONS ARE PROVIDED BY AECOM.

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SHEET TITLE
POTENTIOMETRIC SURFACE MAP (MAY 2020)
UAQC

PROJECT TITLE
UPPER ADQ IMPOUNDMENT - LANDFILL
2020 GROUNDWATER

CLIENT
EVERGY METRO, INC
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

SCS ENGINEERS
8575 W. 110th St, Ste. 100
Overland Park, Kansas 66210
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PROJ. NO. 27217233.20
DSN. BY: DAW
DWN. BY: MBJ
CHK. BY: JF
QA RVW BY: JRR
PROJ. MGR: JRR

CADD FILE:
LA CYGNE LF LAQC IMP & UAQC FIG _MAY 2020 COMBINED V2.DWG

DATE: 4/6/21

FIGURE NO.
2

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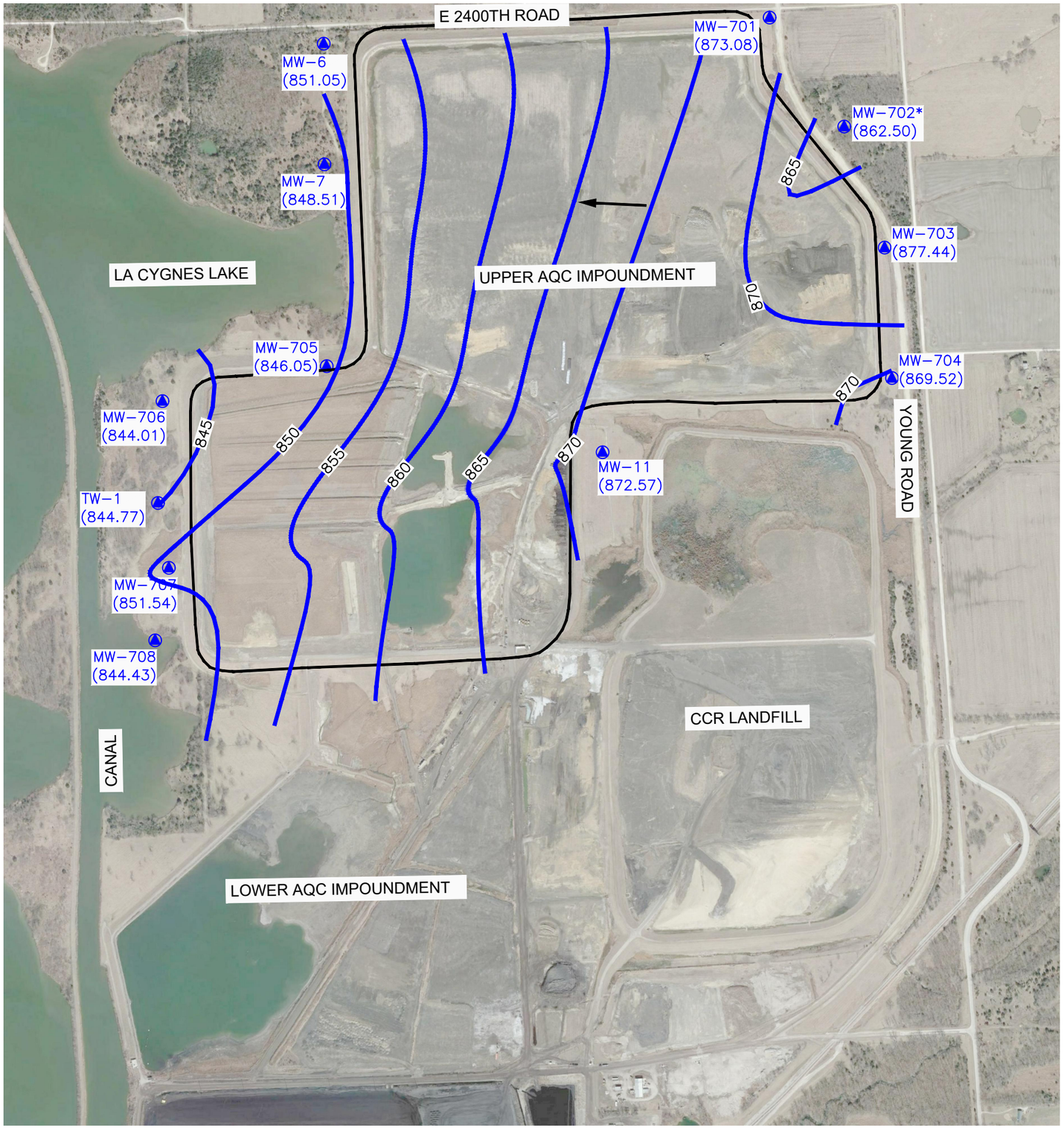

LEGEND

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS OF UPPER AQC IMPOUNDMENT)
- MW-703 (877.00) CCR GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
- —875— GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS (REPRESENTATIVE FOR THIS UNIT)
- MW-702* INDICATES WELL NOT USED IN POTENTIOMETRIC SURFACE MAP CREATION

NOTES:

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3. BOUNDARY AND MONITOR WELL LOCATIONS ARE PROVIDED BY AECOM.

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4	-	-
5	-	-

SHEET TITLE
POTENTIOMETRIC SURFACE MAP (NOVEMBER 2020) UAQC

PROJECT TITLE
UPPER ADQ IMPOUNDMENT - LANDFILL
2020 GROUNDWATER

CLIENT
EVERGY METRO, INC
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

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PROJ. NO.	27217233.20
DSN. BY:	MBJ
CHK. BY:	JF
DSN. BY:	DAW
Q/A RVW BY:	JRR
PROJ. MGR	JRR

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1/5/21

FIGURE NO.
3

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APPENDIX B

TABLES

Table 1: Appendix III with Supplemental Appendix IV Detection Monitoring Results

Table 2: Detection Monitoring Field Measurements

Table 1
Upper AQC Impoundment
Appendix III with Supplemental Appendix IV Detection Monitoring Results
Evergy LaCygne Generating Station

Well Number	Sample Date	Appendix III Constituents							Appendix IV Constituents														
		Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Fluoride (mg/L)	Lead (mg/L)	Lithium (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Selenium (mg/L)	Thallium (mg/L)	Radium Combined (pCi/L)
MW-6	1/14/2020	---	---	---	---	*7.43	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	2/3/2020	---	---	---	---	*7.30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	5/19/2020	1.11	78.8	191	0.541	7.31	133	1140	<0.00400	<0.00200	0.137	<0.00200	<0.00100	<0.0100	<0.0100	0.541	<0.00500	0.0432	<0.000200	<0.00500	<0.00200	<0.00200	2.42
MW-6	11/12/2020	1.14	82.4	205	0.561	7.28	133	1130	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	5/19/2020	1.53	21.8	95.9	1.18	7.81	<5.00	896	<0.00400	<0.00200	0.490	<0.00200	<0.00100	<0.0100	<0.0100	1.18	<0.00500	0.0683	<0.000200	<0.00500	<0.00200	<0.00200	1.72
MW-7	11/12/2020	1.56	20.5	94.2	1.25	7.80	1.12	917	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-11	5/19/2020	0.891	62.2	112	0.507	7.48	194	904	<0.00400	<0.00200	0.0323	<0.00200	<0.00100	<0.0100	<0.0100	0.507	<0.00500	0.0590	<0.000200	<0.00500	<0.00200	<0.00200	2.54
MW-11	11/12/2020	1.19	54.2	84.1	0.573	7.24	179	920	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-701	5/19/2020	0.913	44.7	48.3	0.630	7.53	84.0	545	<0.00400	<0.00200	0.201	<0.00200	<0.00100	<0.0100	<0.0100	0.630	<0.00500	0.0362	<0.000200	<0.00500	<0.00200	<0.00200	2.08
MW-701	7/13/2020	---	*41.3	---	---	**7.71	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-701	11/12/2020	0.920	45.4	49.1	0.607	7.65	86.2	569	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-702	5/19/2020	1.34	3.33	38.0	1.19	8.92	<5.00	406	<0.00400	<0.00200	0.133	<0.00200	<0.00100	<0.0100	<0.0100	1.19	<0.00500	0.118	<0.000200	<0.00500	<0.00200	<0.00200	0.5
MW-702	11/12/2020	1.53	3.60	39.4	1.19	8.95	1.64	563	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-703	5/19/2020	1.78	18.5	107	1.41	7.44	<5.00	823	<0.00400	<0.00200	0.275	<0.00200	<0.00100	<0.0100	<0.0100	1.41	<0.00500	0.0596	<0.000200	<0.00500	<0.00200	<0.00200	1.33
MW-703	11/12/2020	1.83	18.4	109	1.61	7.27	<5.00	934	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-704	5/19/2020	1.87	20.9	93.0	0.857	7.53	148	1050	<0.00400	<0.00200	0.0726	<0.00200	<0.00100	<0.0100	<0.0100	0.857	<0.00500	0.0921	<0.000200	0.00509	<0.00200	<0.00200	3.52
MW-704	7/13/2020	---	---	*90.1	---	**7.73	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-704	8/27/2020	---	---	*92.2	---	**7.41	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-704	11/12/2020	1.97	21.5	90.2	0.885	7.56	171	1200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-705	1/14/2020	---	---	---	---	*7.31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-705	5/19/2020	2.10	29.4	132	0.955	7.30	39.3	822	<0.00400	<0.00200	0.0887	<0.00200	<0.00100	<0.0100	<0.0100	0.955	<0.00500	0.113	<0.000200	<0.00500	<0.00200	<0.00200	0.343
MW-705	11/12/2020	2.07	28.8	141	1.02	6.92	40.1	1000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-706	1/14/2020	---	---	---	---	**7.79	*9.78	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-706	2/3/2020	---	---	---	---	**7.38	*32.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-706	5/19/2020	1.94	24.8	225	1.03	7.55	24.6	952	<0.00400	<0.00200	0.199	<0.00200	<0.00100	<0.0100	<0.0100	1.03	<0.00500	0.116	<0.000200	<0.00500	<0.00200	<0.00200	1.52
MW-706	7/13/2020	---	---	---	---	**7.60	*21.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-706	8/27/2020	---	---	---	---	**7.20	*20.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-706	11/12/2020	1.98	24.4	244	1.05	7.11	20.0	1180	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-707B	5/19/2020	1.81	424	172	0.325	6.78	5310	5810	<0.00400	<0.00200	0.0241	<0.00200	<0.00100	<0.0100	0.0121	0.325	<0.00500	1.01	<0.000200	<0.00500	<0.00200	<0.00200	0.21
MW-707B	7/13/2020	---	*421	---	---	**6.88	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-707B	11/12/2020	1.83	404	267	0.196	7.15	5250	8180	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-708	1/14/2020	---	---	---	---	**7.58	*9.45	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-708	5/19/2020	1.26	30.2	43.6	0.502	7.48	9.42	586	<0.00400	<0.00200	0.202	<0.00200	<0.00100	<0.0100	<0.0100	0.502	<0.00500	0.0691	<0.000200	<0.00500	<0.00200	<0.00200	0.123
MW-708	11/12/2020	1.32	30.1	45.5	0.590	7.52	9.88	632	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
TW-1	5/19/2020	1.37	25.0	40.5	0.405	7.82	69.1	864	<0.00400	<0.00200	0.0656	<0.00200	<0.00100	<0.0100	<0.0100	0.405	<0.00500	0.127	<0.000200	<0.00500	<0.00200	<0.00200	1.18
TW-1	7/13/2020	---	---	---	---	**7.76	*69.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
TW-1	8/27/2020	---	---	---	---	**7.45	*72.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
TW-1	11/12/2020	1.38	24.6	40.5	0.384	7.72	73.8	1050	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

* 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 - miligrams per liter
pCi/L - picocuries per liter
S.U. - Standard Units
--- Not Sampled

Table 2
Upper AQC Impoundment
Detection Monitoring Field Measurements
Evergy LaCygne 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-6	1/14/2020	*7.43	2030	13.69	3.1	-104	0.00	9.64	851.04
MW-6	2/3/2020	*7.30	2040	11.95	0.0	-92	2.27	8.45	852.23
MW-6	5/19/2020	7.31	1890	15.93	0.0	-28	0.00	9.52	851.16
MW-6	11/12/2020	7.28	1730	14.82	0.0	-45	0.00	9.63	851.05
MW-7	5/19/2020	7.81	1490	14.93	0.0	-48	9.31	5.90	849.76
MW-7	11/12/2020	7.80	1400	14.48	0.0	65	0.00	7.15	848.51
MW-11	5/19/2020	7.48	1580	15.59	0.9	117	0.00	2.61	874.37
MW-11	11/12/2020	7.24	1440	15.60	0.0	-38	0.35	4.41	872.57
MW-701	5/19/2020	7.53	952	15.55	12.7	62	0.00	7.16	878.07
MW-701	7/13/2020	**7.71	862	20.83	0.0	-23	1.22	9.30	875.93
MW-701	11/12/2020	7.65	958	15.83	0.0	-15	0.69	12.15	873.08
MW-702	5/19/2020	8.92	929	14.66	0.0	86	0.00	18.02	865.15
MW-702	11/12/2020	8.95	963	14.53	1.9	132	2.37	20.67	862.50
MW-703	5/19/2020	7.44	1580	14.61	4.8	11	0.00	6.17	877.67
MW-703	11/12/2020	7.27	1640	15.66	0.0	-110	1.71	6.40	877.44
MW-704	5/19/2020	7.53	1950	15.68	4.1	92	0.00	10.60	872.57
MW-704	7/13/2020	**7.73	1770	18.88	0.0	10	1.95	15.90	867.27
MW-704	8/27/2020	**7.41	2000	21.89	0.0	31	5.10	15.24	867.93
MW-704	11/12/2020	7.56	1890	16.23	0.0	7	0.49	13.65	869.52
MW-705	1/14/2020	*7.31	1760	13.55	6.1	-50	0.00	8.92	847.03
MW-705	5/19/2020	7.30	1690	15.41	0.0	-46	0.00	9.58	846.37
MW-705	11/12/2020	6.92	1760	16.35	0.0	-71	1.47	9.90	846.05
MW-706	1/14/2020	**7.79	2200	13.54	10.6	-28	0.00	8.81	845.47
MW-706	2/3/2020	**7.38	2160	13.22	0.0	-107	1.57	8.73	845.55
MW-706	5/19/2020	7.55	2030	16.12	7.5	-47	0.00	8.78	845.50
MW-706	7/13/2020	**7.60	1880	18.07	1.0	-13	1.46	10.17	844.11
MW-706	8/27/2020	**7.20	2110	20.53	0.0	-74	5.92	10.82	843.46
MW-706	11/12/2020	7.11	2180	15.97	0.0	-76	1.96	10.27	844.01
MW-707B	5/19/2020	6.78	8310	17.19	31.8	42	0.00	5.62	853.18
MW-707B	7/13/2020	**6.88	7670	18.72	42.0	45	1.37	8.60	850.20
MW-707B	11/12/2020	7.15	7530	15.26	27.9	124	0.00	7.26	851.54
MW-708	1/14/2020	**7.58	1190	14.06	7.0	62	0.00	6.77	846.26
MW-708	5/19/2020	7.48	1110	16.73	0.0	44	0.00	7.10	845.93
MW-708	11/12/2020	7.52	1040	15.55	0.0	100	0.00	8.60	844.43
TW-1	5/19/2020	7.82	1650	17.75	0.0	38	4.49	17.14	844.96
TW-1	7/13/2020	**7.76	1590	18.08	0.0	98	4.02	17.81	844.29
TW-1	8/27/2020	**7.45	1610	24.63	0.0	49	1.80	18.03	844.07
TW-1	11/12/2020	7.72	1540	15.28	0.0	102	0.00	17.33	844.77

* 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

***Depth to water measured in all monitoring wells within 24 hour period prior to the sampling event

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

C1 CCR Groundwater Monitoring Alternative Source Demonstration Report November 2019 Groundwater Monitoring Event, Upper AQC Impoundment, La Cygne Generating Station (June 2020)

C2 CCR Groundwater Monitoring Alternative Source Demonstration Report May 2020 Groundwater Monitoring Event, Upper AQC Impoundment, La Cygne Generating Station (December 2020)

C1 CCR Groundwater Monitoring Alternative Source Demonstration Report November 2019 Groundwater Monitoring Event, Upper AQC Impoundment, La Cygne Generating Station (June 2020)

CCR GROUNDWATER MONITORING
ALTERNATIVE SOURCE DEMONSTRATION REPORT
NOVEMBER 2019 GROUNDWATER MONITORING EVENT

UPPER AQC IMPOUNDMENT
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

Presented To:

Evergy Metro, Inc.

Presented By:

SCS ENGINEERS

8575 West 110th Street, Suite 100

Overland Park, Kansas 66210

(913) 681-0030

June 2020

File No. 27217233.20

CERTIFICATIONS

I, John R. Rockhold, being a qualified groundwater scientist and licensed Professional Geologist in the State of Kansas, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the Upper AQC Impoundment at the La Cygne 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, P.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Kansas, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the Upper AQC Impoundment at the La Cygne 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

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Appendices

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 Upper AQC Impoundment at the La Cygne 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 7, 2019. Review and validation of the results from the November 2019 Detection Monitoring Event was completed on December 17, 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 January 14, 2020 and February 3, 2020.

The completed statistical evaluation identified one Appendix III constituent above the prediction limit established for monitoring well MW-706.

Constituent/Monitoring Well	*UPL	Observation November 7, 2019	1st Verification January 14, 2020	2nd Verification February 3, 2020
Sulfate				
MW-706	8.79	9.68	9.78	32.8

*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 a SSI above the background prediction limit for sulfate in monitoring well MW-706.

3 ALTERNATIVE SOURCE DEMONSTRATION

An Alternative Source Demonstration 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 Upper AQC Impoundment at the La Cygne Generating Station, there are multiple lines of supporting evidence to indicate they are not caused by a release from the Upper AQC Impoundment. Select multiple lines of supporting evidence are described as follows.

3.1 UPGRADIENT WELL LOCATION

Figure 1 in **Appendix A** shows a potentiometric surface contour map indicating the direction of groundwater flow at and near the Upper AQC Impoundment at the time of sampling. The groundwater flow directions indicated are for the November 2019 groundwater monitoring event and are typical flow directions for this unit. As seen in the map, monitoring well MW-701 is located upgradient from the Upper AQC Impoundment indicating that naturally occurring sulfate levels can be significantly higher than the sulfate levels in MW-706. Therefore, natural groundwater flow from upgradient of the Upper AQC Impoundment could contribute to the geochemistry of groundwater downgradient of the Upper AQC Impoundment and cause the sulfate level to increase. This demonstrates that a source other than the Upper AQC Impoundment caused the SSI above the background level for sulfate, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

3.2 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.

Box and whiskers plots were prepared for sulfate for upgradient wells MW-701, MW-702, and MW-703 and downgradient well MW-706. Although the sulfate SSI was only identified in downgradient well MW-706 the box and whiskers plots show that it is below the sulfate range for upgradient well MW-701. The comparison indicates the sulfate level in upgradient well MW-701 is greater than the sulfate level in MW-706. This demonstrates that a source other than the Upper AQC Impoundment caused the SSI above background levels for sulfate, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Box and whiskers plots are provided in **Appendix B**.

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 sulfate were prepared for the CCR monitoring system upgradient wells MW-701, MW-702, and MW-703 and downgradient well MW-706. Although the sulfate SSI was only identified in downgradient well MW-706, the time series plots show that sulfate in downgradient well MW-706 is below the sulfate range for upgradient well MW-701. The comparison indicates the sulfate level in upgradient well MW-701 is greater than the sulfate level in downgradient well MW-706. This demonstrates that a source other than the Upper AQC Impoundment caused the sulfate SSI 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**.

3.4 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 was generated for samples from upgradient wells MW-701, MW-702, and MW-703 and from downgradient well MW-706. The samples from downgradient well MW-706 plot between the samples from upgradient wells MW-701 and MW-702 and between samples from MW-701 and MW-703 indicating similar geochemical characteristics to upgradient wells. Additionally of note, the difference between the upgradient wells indicates that natural variability occurs between relatively close upgradient wells and is likely to occur across the site. This demonstrates that a source other than the Upper AQC Impoundment caused the SSI for sulfate in MW-706, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The piper diagram plots and analytical results are provided in **Appendix D**.

4 CONCLUSION

Our opinion is that a sufficient body of evidence is available and presented above to demonstrate that a source other than the Upper AQC Impoundment caused the SSI for sulfate, 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 Upper AQC Impoundment may continue with the detection monitoring program under § 257.94.

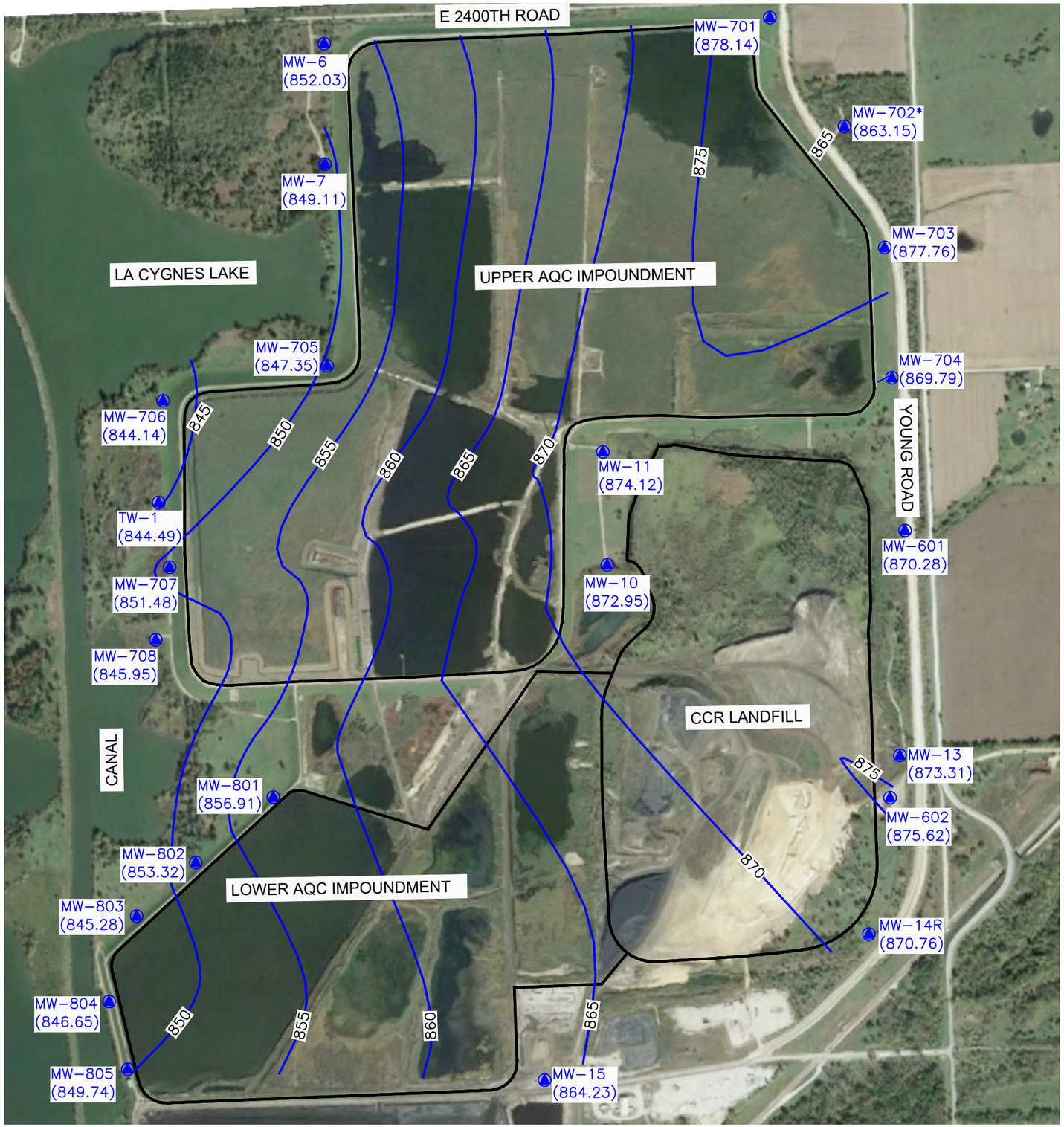
5 GENERAL COMMENTS

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 La Cygne Generating Station. No warranties, express or implied, are intended or made.

The signatures of the certifying registered geologist and professional engineer on this document represents 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

Figure 1



LEGEND

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS OF UPPER AQC IMPOUNDMENT)
- MW-703 (877.00) CCR GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
- —875— GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS (REPRESENTATIVE FOR THIS UNIT)
- MW-702* INDICATES WELL NOT USED IN POTENTIOMETRIC SURFACE MAP CREATION

NOTES:

1. KDHE FACILITY PERMIT AND LANDFILL PERMIT BOUNDARIES VARY FROM THAT SHOWN.
2. GOOGLE EARTH IMAGE DATED OCTOBER 2014. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE.
3. BOUNDARY AND MONITOR WELL LOCATIONS ARE PROVIDED BY AECOM.

N

800 0 800 1600

SCALE FEET

REV.	DATE	CK. BY
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-

SHEET TITLE
POTENTIOMETRIC SURFACE MAP (NOVEMBER 2019)
COMBINED UAQC/LANDFILL - LAQC IMPOUNDMENT

PROJECT TITLE
ALTERNATIVE SOURCE DEMONSTRATION

CLIENT
EVERGY METRO, INC.
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

SCS ENGINEERS
7311 W. 130th St, Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO.	DWN. BY:	QA RVW BY:
27217233.00	DAW	JRR
DSN. BY:	CHK. BY:	PROJ. MGR
DAW	JF	JRR

CADD FILE:
LA CYGNE LF LAQC IMP & UAQC FIG 1_NOV 2019 - COMBINED.DWG

DATE:
1/30/20

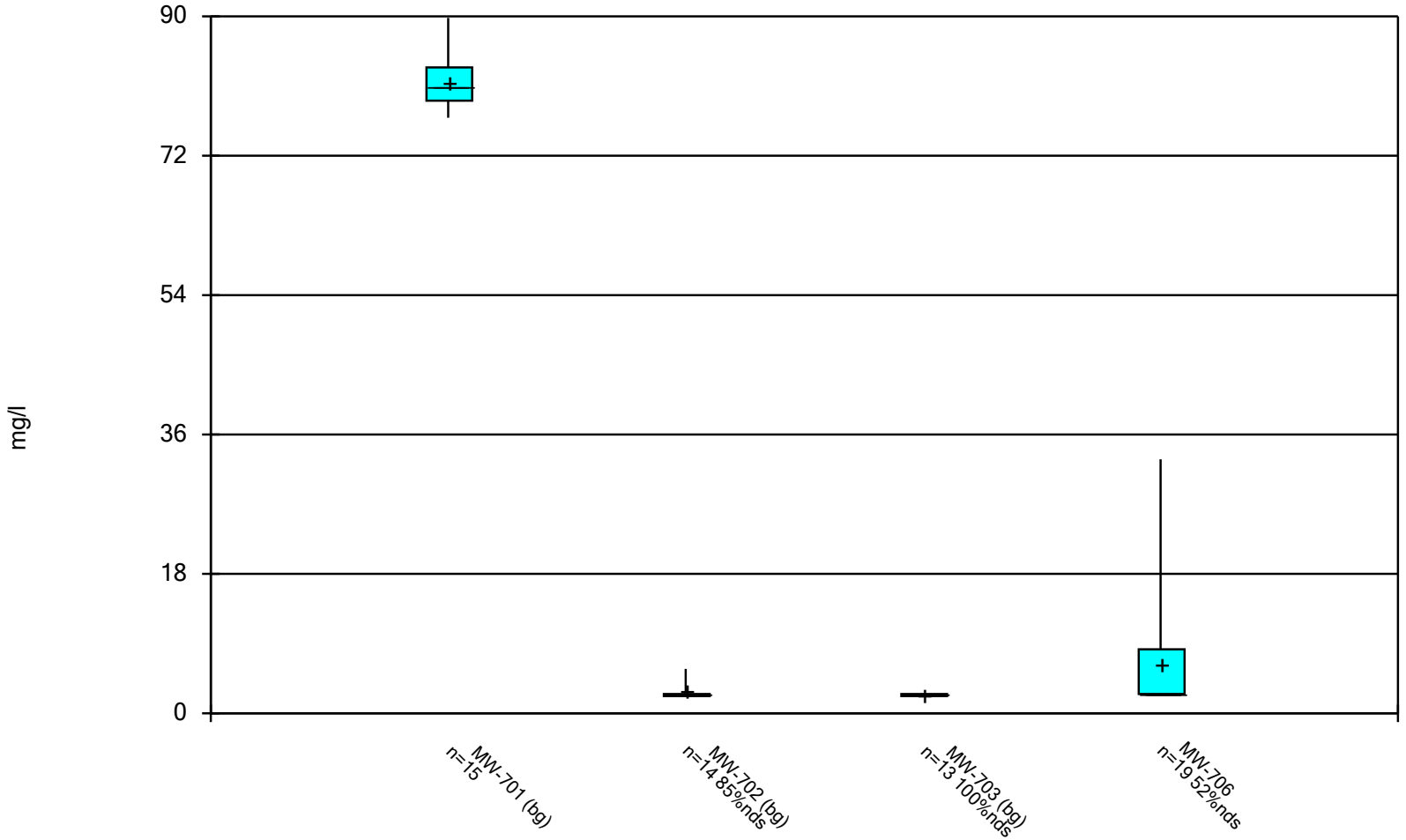
FIGURE NO.
1

N:\KCPL\Projects\Groundwater\DWG\La Cygne\2019\La Cygne LF LAQC Imp & UAQC Fig 1_NOV 2019 - COMBINED.dwg Jan 30, 2020 - 10:51am Layout Name: Fig 1 Combined By: 4470daw

Appendix B

Box and Whiskers Plots

Box & Whiskers Plot



Constituent: SULFATE Analysis Run 3/13/2020 10:18 AM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Box & Whiskers Plot

LaCygne Client: SCS Engineers Data: LaC GW Data Printed 3/13/2020, 10:20 AM

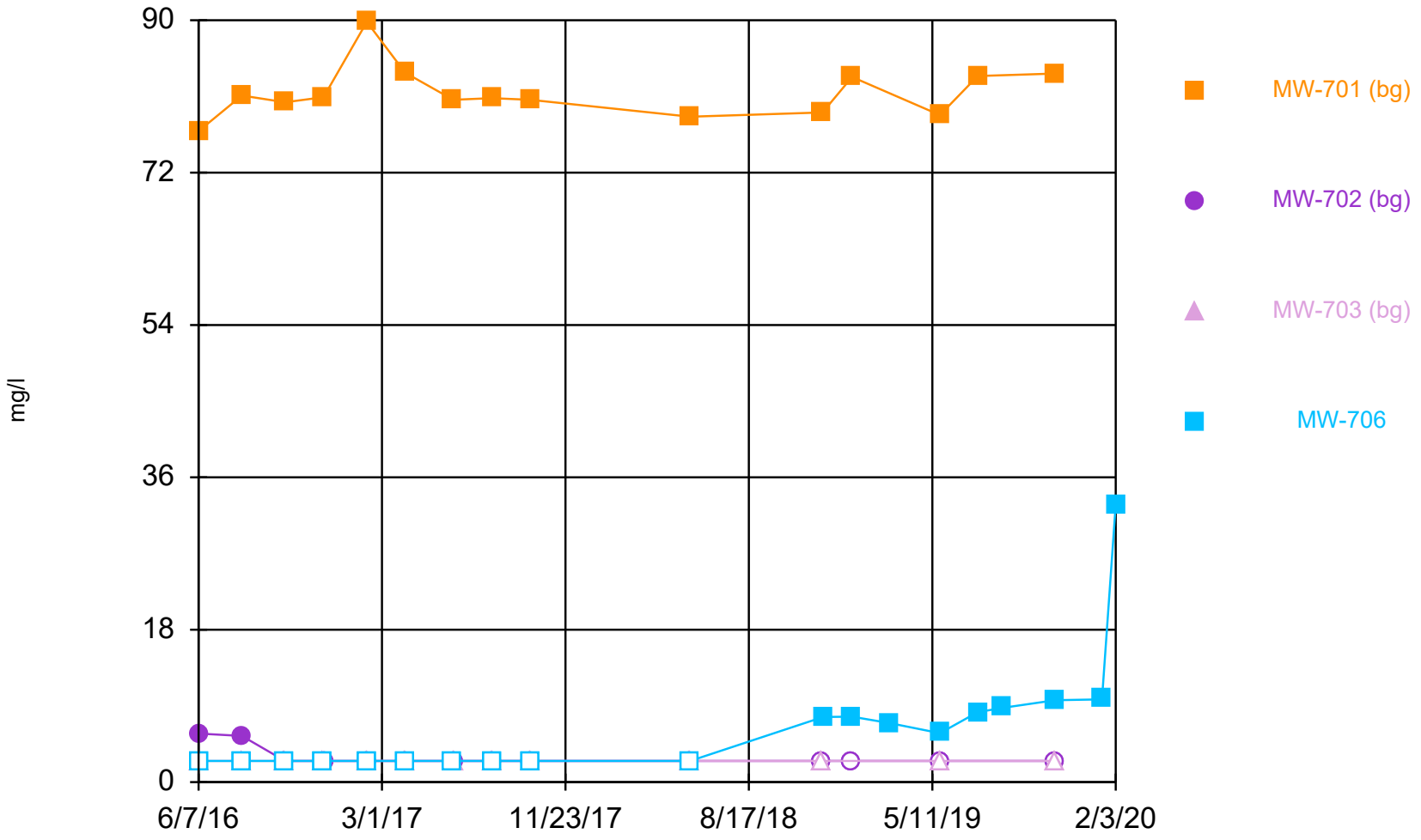
Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
SULFATE (mg/l)	MW-701 (bg)	15	81.45	3.077	0.7944	80.8	76.9	89.8	0
SULFATE (mg/l)	MW-702 (bg)	14	2.942	1.125	0.3007	2.5	2.5	5.73	85.71
SULFATE (mg/l)	MW-703 (bg)	13	2.5	0	0	2.5	2.5	2.5	100
SULFATE (mg/l)	MW-706	19	6.446	7.01	1.608	2.5	2.5	32.8	52.63

Appendix C

Time Series Plots

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Time Series



Constituent: SULFATE Analysis Run 3/13/2020 10:21 AM View: Upper AQC III

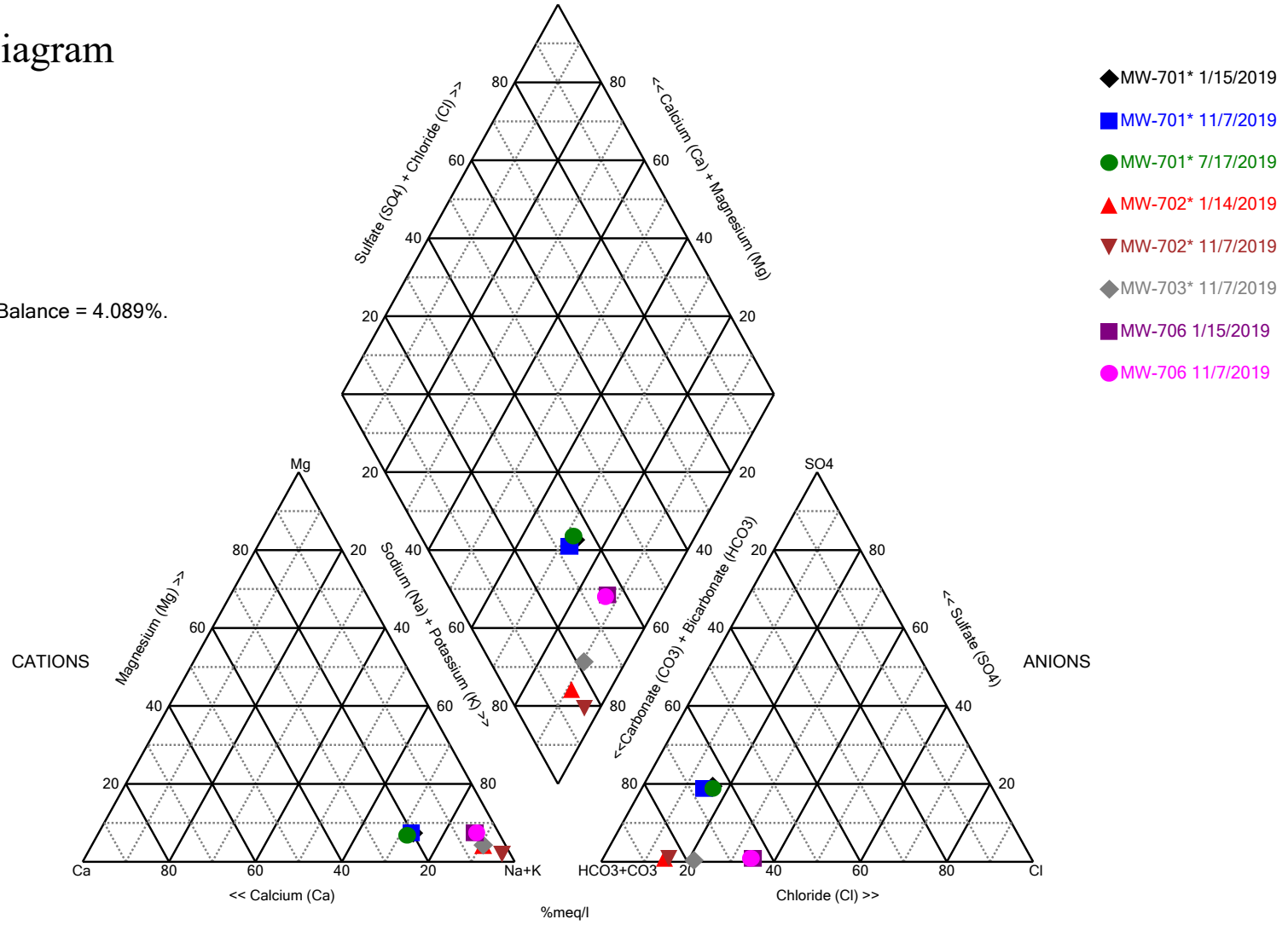
LaCygne Client: SCS Engineers Data: LaC GW Data

Appendix D

Piper Diagram Plots and Analytical Results

Piper Diagram

Cation-Anion Balance = 4.089%.



Analysis Run 3/13/2020 10:37 AM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Piper Diagram

Analysis Run 3/13/2020 10:39 AM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Totals (ppm)	Na	K	Ca	Mg	Cl	SO4	HCO3	CO3
MW-701* 1/15/2019	169	3.11	40.2	8.79	47.9	83.3	336	10
MW-701* 7/17/2019	172	2.91	45	8.71	50.7	83.4	349	10
MW-701* 11/7/2019	163	2.85	40.4	8.6	46.2	83.7	369	10
MW-702* 1/14/2019	230	3.14	11.2	5.24	43	2.5	461	10
MW-702* 11/7/2019	167	2.58	2.73	1.7	40.7	2.5	249	87.9
MW-703* 11/7/2019	339	3.53	17.6	8.07	111	2.5	725	10
MW-706 1/15/2019	442	6.52	24.7	19.5	238	7.73	769	10
MW-706 11/7/2019	427	6.26	22.5	19	240	9.68	806	10

C2 CCR Groundwater Monitoring Alternative Source Demonstration Report May 2020 Groundwater Monitoring Event, Upper AQC Impoundment, La Cygne Generating Station (December 2020)

CCR GROUNDWATER MONITORING
ALTERNATIVE SOURCE DEMONSTRATION REPORT
MAY 2020 GROUNDWATER MONITORING EVENT

UPPER AQC IMPOUNDMENT
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

Presented To:

Evergy Metro, Inc.

Presented By:

SCS ENGINEERS

8575 West 110th Street, Suite 100

Overland Park, Kansas 66210

(913) 681-0030

December 2020

File No. 27217233.20

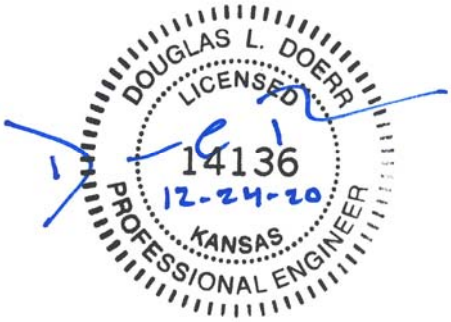
CERTIFICATIONS

I, John R. Rockhold, being a qualified groundwater scientist and licensed Professional Geologist in the State of Kansas, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the Upper AQC Impoundment at the La Cygne 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, P.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Kansas, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the Upper AQC Impoundment at the La Cygne 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

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Section **Page**

Appendices

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 Upper AQC Impoundment at the La Cygne 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 19, 2020. Review and validation of the results from the May 2020 Detection Monitoring Event was completed on June 29, 2020, 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 13, 2020 and August 27, 2020.

The completed statistical evaluation identified two Appendix III constituents above their respective prediction limits established for monitoring wells MW-704, MW-706 and TW-1.

Constituent/Monitoring Well	*UPL	Observation May 19, 2020	1st Verification July 13, 2020	2nd Verification August 27, 2020
Chloride				
MW-704	88.89	93	90.1	92.2
Sulfate				
MW-706	8.79	24.6	21.3	20.7
TW-1	67.15	69.1	69.4	72.4

*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 three SSIs above the background prediction limit for chloride for MW-704, and sulfate for monitoring wells MW-706 and TW-1.

3 ALTERNATIVE SOURCE DEMONSTRATION

An Alternative Source Demonstration 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 Upper AQC Impoundment at the La Cygne Generating Station, there are multiple lines of supporting evidence to indicate they are not caused by a release from the Upper AQC Impoundment. Select multiple lines of supporting evidence are described as follows.

3.1 UPGRADIENT WELL LOCATION

Figure 1 in **Appendix A** shows a potentiometric surface contour map indicating the direction of groundwater flow at and near the Upper AQC Impoundment at the time of sampling. The groundwater flow directions indicated are for the November 2020 groundwater monitoring event and are typical flow directions for this unit. Upgradient monitoring well MW-701 has higher sulfate concentrations than both MW-706 and TW-1. As seen in the map, monitoring well MW-701 is located upgradient from the Upper AQC Impoundment indicating that naturally occurring sulfate levels can be significantly higher than the sulfate levels in MW-706 and TW-1. Therefore, natural groundwater flow from upgradient of the Upper AQC Impoundment likely contributed to the geochemistry of groundwater downgradient of the Upper AQC Impoundment and caused the sulfate level to increase. This demonstrates that a source other than the Upper AQC Impoundment caused the SSI above the background level for sulfate, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

3.2 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.

Box and whiskers plots were prepared for chloride for upgradient wells MW-701, MW-702, and MW-703 and MW-704. Although the chloride SSI was only identified in MW-704, the box and whiskers plots show that it is below the chloride range for upgradient well MW-703. The comparison indicates the chloride level in upgradient well MW-703 is greater than the chloride level in MW-704. This demonstrates that a

source other than the Upper AQC Impoundment caused the SSI above background levels for chloride, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Box and whiskers plots are provided in **Appendix B**.

Box and whiskers plots were prepared for sulfate for upgradient wells MW-701, MW-702, and MW-703 and downgradient wells MW-706 and TW-1. Although sulfate SSIs were only identified in downgradient wells MW-706 and TW-1, the box and whiskers plots show that concentrations in those wells are below the sulfate range for upgradient well MW-701. The comparison indicates the sulfate level in upgradient well MW-701 is greater than the sulfate level in MW-706 and TW-1. This demonstrates that a source other than the Upper AQC Impoundment caused the SSI above background levels for sulfate, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Box and whiskers plots are provided in **Appendix B**.

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 chloride were prepared for the CCR monitoring system upgradient wells MW-701, MW-702, and MW-703 and MW-704. Although the chloride SSI was only identified in well MW-704, the time series plots show that chloride concentrations in MW-704 are below the chloride concentrations in upgradient well MW-701. The comparison indicates the chloride level in upgradient well MW-701 is greater than the chloride level in well MW-704. This demonstrates that a source other than the Upper AQC Impoundment caused the chloride SSI 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**.

Time series plots for sulfate were prepared for the CCR monitoring system upgradient wells MW-701, MW-702, and MW-703 and downgradient wells MW-706 and TW-1. Although the sulfate SSIs were only identified in downgradient wells MW-706 and TW-1, the time series plots show that sulfate concentrations in these wells are below the sulfate concentrations in upgradient well MW-701. The comparison indicates the sulfate level in upgradient well MW-701 is greater than the sulfate levels in downgradient wells MW-706 and TW-1. This demonstrates that a source other than the Upper AQC Impoundment caused the sulfate SSI 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**.

3.4 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 was generated for samples from upgradient wells MW-701, MW-702, and MW-703 and from wells MW-704, MW-706 and TW-1. The samples from wells MW-704, MW-706 and TW-1 plot between the samples from upgradient wells MW-701 and MW-702 and between samples from MW-701 and MW-703 indicating similar geochemical characteristics to upgradient wells. Additionally of note, the difference between the upgradient wells indicates that natural variability occurs between relatively close upgradient wells and is likely to occur across the site. This demonstrates that a source other than the Upper AQC Impoundment caused the SSIs for MW-704, MW-706 and TW-1, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The piper diagram plots and analytical results are provided in **Appendix D**.

4 CONCLUSION

Our opinion is that a sufficient body of evidence is available and presented above to demonstrate that a source other than the Upper AQC Impoundment caused the SSIs for chloride and sulfate, 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 Upper AQC Impoundment may continue with the detection monitoring program under § 257.94.

5 GENERAL COMMENTS

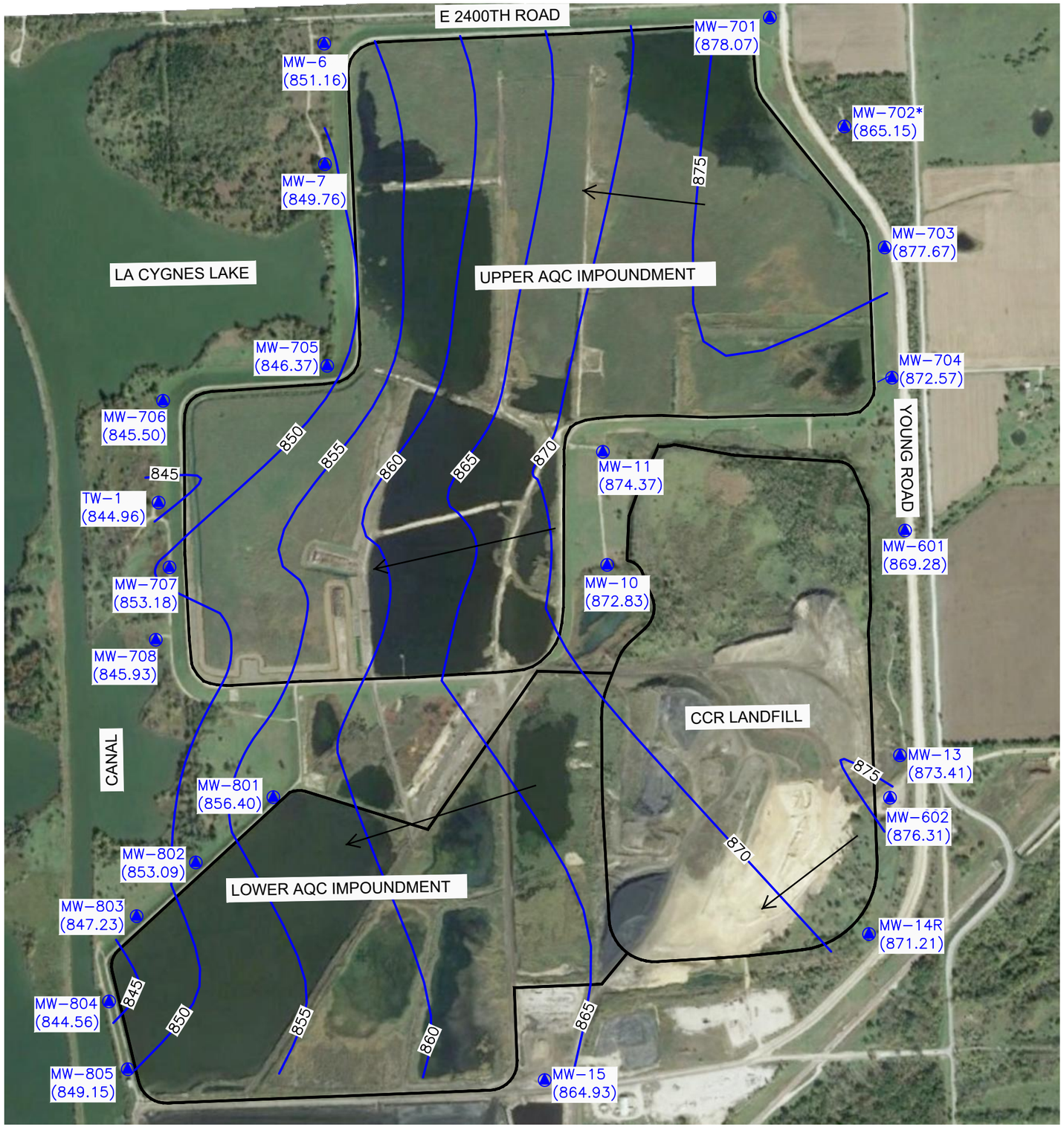
This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. 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 La Cygne Generating Station. No warranties, express or implied, are intended or made.

The signatures of the certifying registered geologist and professional engineer on this document represents 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

Figure 1



LEGEND

- CCR UNIT BOUNDARY
- MW-703 (877.00) — CCR GROUNDWATER MONITORING WELLS
- —875— GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS
- MW-702* — INDICATES WELL NOT USED IN POTENTIOMETRIC SURFACE MAP CREATION
- GROUNDWATER FLOW DIRECTION

NOTES:

1. KDHE FACILITY PERMIT AND LANDFILL PERMIT BOUNDARIES VARY FROM THAT SHOWN.
2. GOOGLE EARTH IMAGE DATED OCTOBER 2014. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE.
3. BOUNDARY AND MONITOR WELL LOCATIONS ARE PROVIDED BY AECOM.

N

800 0 800 1600

SCALE FEET

REV.	DATE	CK. BY
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-

SHEET TITLE: POTENTIOMETRIC SURFACE MAP (MAY 2020)

PROJECT TITLE: COMBINED UAQC/LANDFILL - LAQC IMPOUNDMENT 2020 GROUNDWATER

CLIENT: EVERGY METRO, INC
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

SCS ENGINEERS
8575 W. 110th St, Ste. 100
Overland Park, Kansas 66210
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO.	DSN. BY:	CHK. BY:	DSR. BY:
27217233.20	MBJ	JF	DAW

Q/A REW BY:	PROJ. MGR
JRR	JRR

CADD FILE: LA CYGNE LF LAQC IMP & UAQC FIG 1_MAY 2020 - COMBINED.DWG

DATE: 7/16/2020

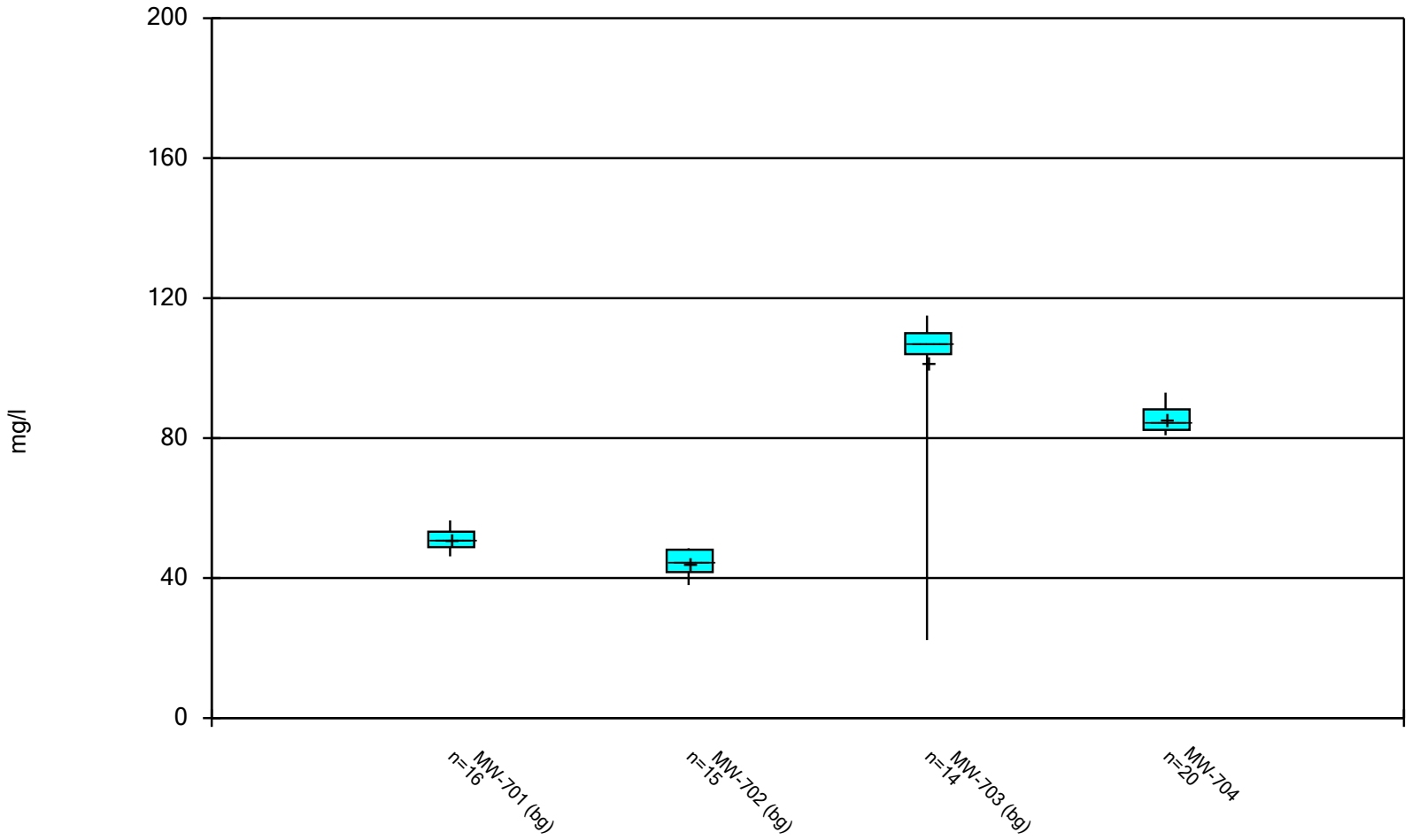
FIGURE NO. 1

N:\KCPL\Projects\Groundwater\DWG\La Cygne\2020\La Cygne LF LAQC Imp & UAQC Fig 1_MAY 2020 - COMBINED.dwg Jul 16, 2020 - 11:35am Layout Name: Fig 1 Combined By: 4503m_j

Appendix B

Box and Whiskers Plots

Box & Whiskers Plot



Constituent: CHLORIDE Analysis Run 10/8/2020 8:51 AM View: Upper AQC III

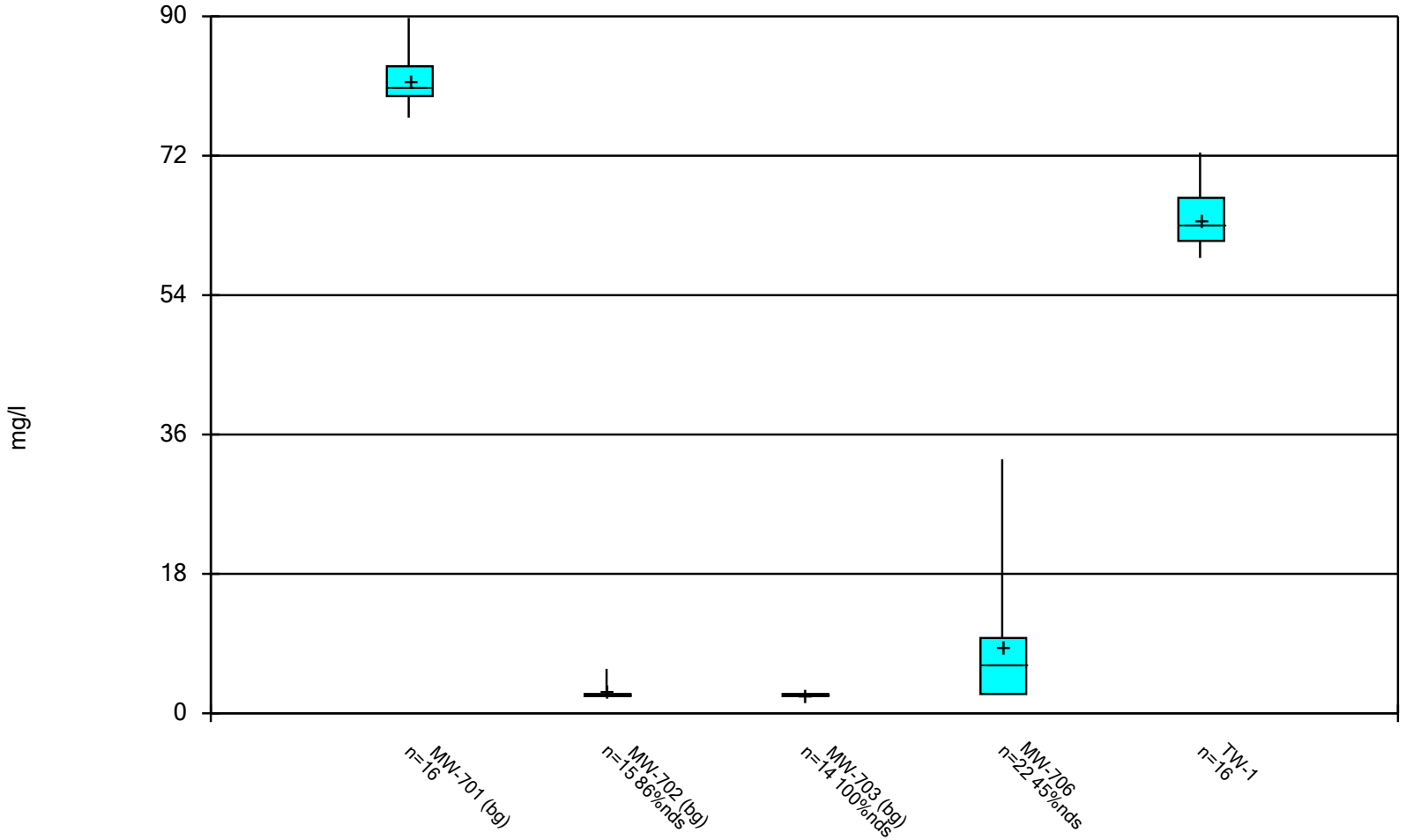
LaCygne Client: SCS Engineers Data: LaC GW Data

Box & Whiskers Plot

LaCygne Client: SCS Engineers Data: LaC GW Data Printed 10/8/2020, 8:52 AM

Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
CHLORIDE (mg/l)	MW-701 (bg)	16	51.01	2.894	0.7236	50.65	46.2	56.5	0
CHLORIDE (mg/l)	MW-702 (bg)	15	44.33	3.41	0.8806	44.9	38	48.5	0
CHLORIDE (mg/l)	MW-703 (bg)	14	101.5	23.05	6.16	107	22.3	115	0
CHLORIDE (mg/l)	MW-704	20	85.48	3.675	0.8218	84.6	80.8	93	0

Box & Whiskers Plot



Constituent: SULFATE Analysis Run 10/8/2020 8:56 AM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Box & Whiskers Plot

LaCygne Client: SCS Engineers Data: LaC GW Data Printed 10/8/2020, 8:58 AM

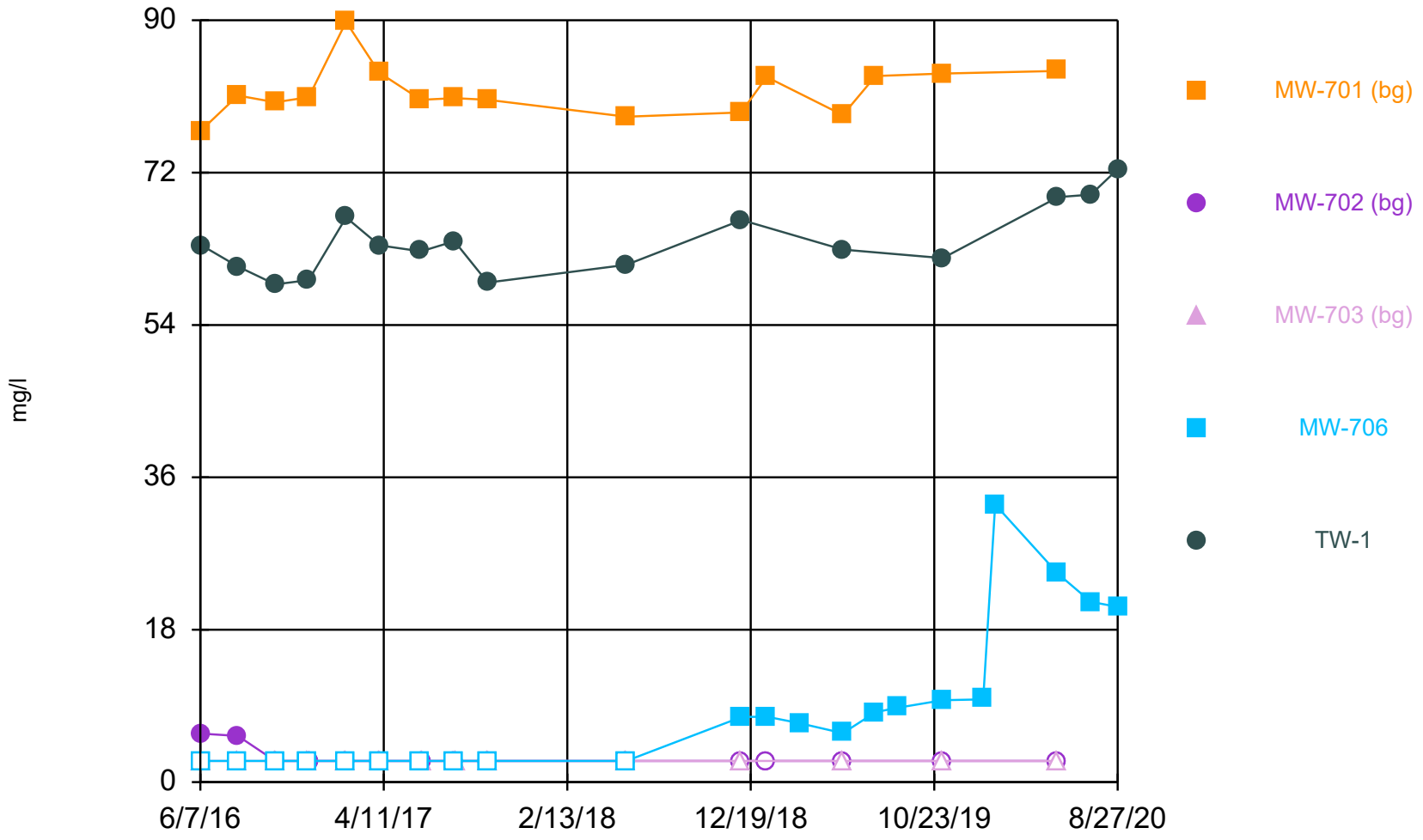
Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
SULFATE (mg/l)	MW-701 (bg)	16	81.61	3.04	0.76	80.85	76.9	89.8	0
SULFATE (mg/l)	MW-702 (bg)	15	2.913	1.09	0.2815	2.5	2.5	5.73	86.67
SULFATE (mg/l)	MW-703 (bg)	14	2.5	0	0	2.5	2.5	2.5	100
SULFATE (mg/l)	MW-706	22	8.595	8.553	1.824	6.37	2.5	32.8	45.45
SULFATE (mg/l)	TW-1	16	63.83	3.988	0.9969	63.15	58.8	72.4	0

Appendix C

Time Series Plots

Hollow symbols indicate censored values.

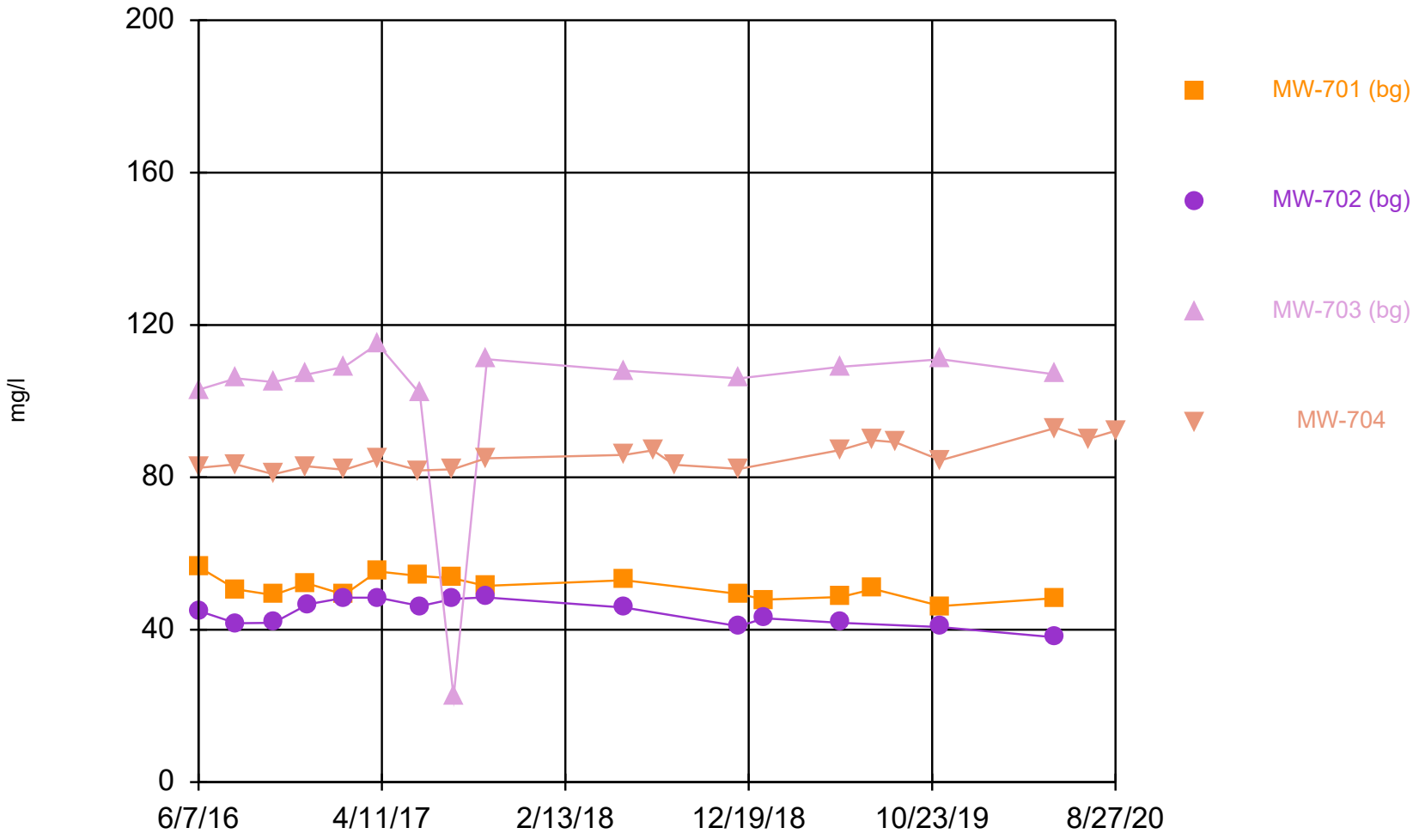
Time Series



Constituent: SULFATE Analysis Run 10/8/2020 8:54 AM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Time Series



Constituent: CHLORIDE Analysis Run 10/8/2020 8:41 AM View: Upper AQC III

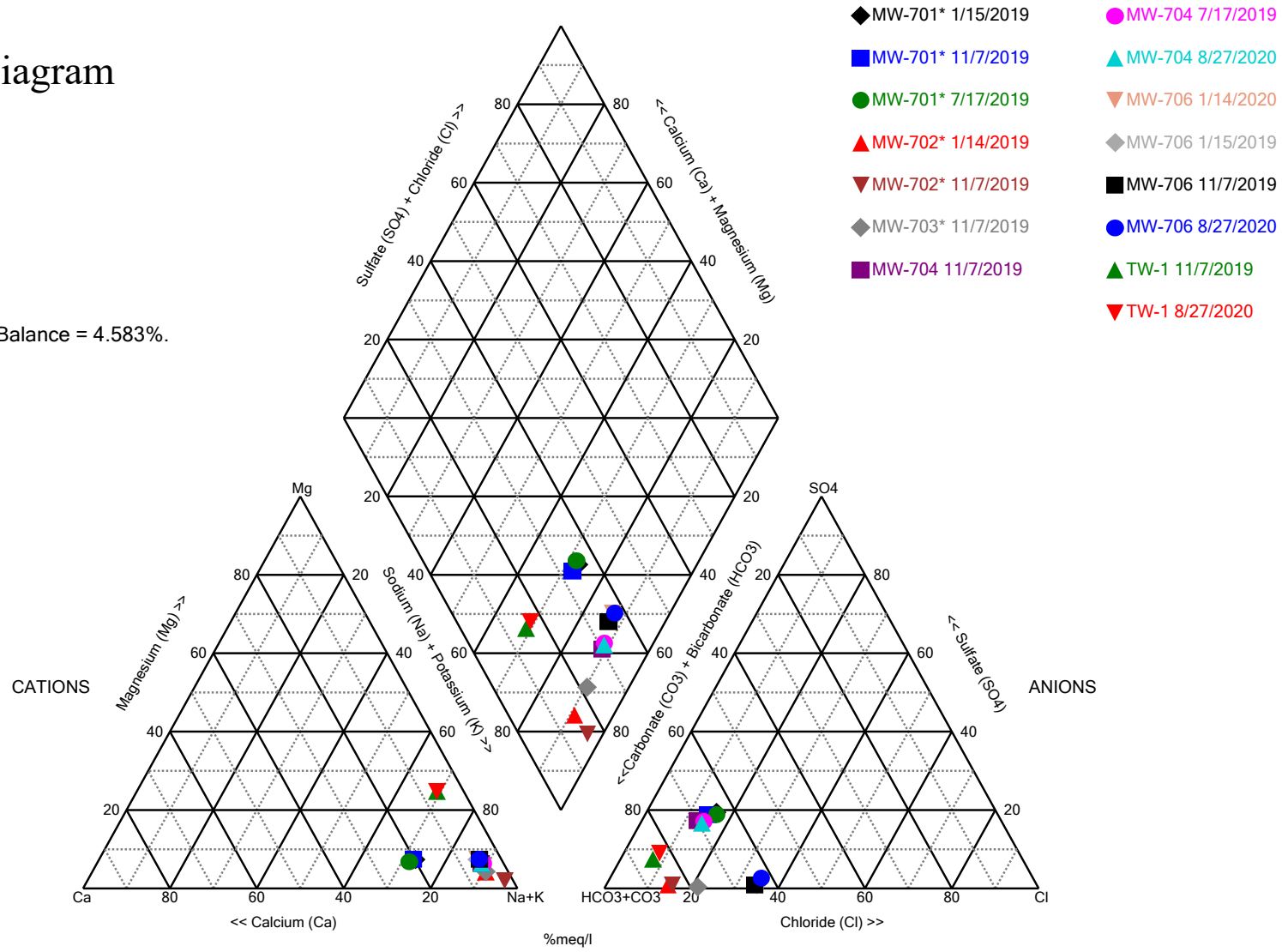
LaCygne Client: SCS Engineers Data: LaC GW Data

Appendix D

Piper Diagram Plots and Analytical Results

Piper Diagram

Cation-Anion Balance = 4.583%.



Analysis Run 10/8/2020 9:00 AM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Piper Diagram

Analysis Run 10/8/2020 9:02 AM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Totals (ppm)	Na	K	Ca	Mg	Cl	SO4	HCO3	CO3
MW-701* 1/15/2019	169	3.11	40.2	8.79	47.9	83.3	336	10
MW-701* 7/17/2019	172	2.91	45	8.71	50.7	83.4	349	10
MW-701* 11/7/2019	163	2.85	40.4	8.6	46.2	83.7	369	10
MW-702* 1/14/2019	230	3.14	11.2	5.24	43	2.5	461	10
MW-702* 11/7/2019	167	2.58	2.73	1.7	40.7	2.5	249	87.9
MW-703* 11/7/2019	339	3.53	17.6	8.07	111	2.5	725	10
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MW-704 11/7/2019	429	5.47	21	15.5	84.5	163	844	10
MW-704 8/27/2020	444	5.51	21.8	16.1	92.2	150	803	10
MW-706 1/15/2019	442	6.52	24.7	19.5	238	7.73	769	10
MW-706 11/7/2019	427	6.26	22.5	19	240	9.68	806	10
MW-706 1/14/2020	422	6.18	24.4	19.3	247	9.78	767	10
MW-706 8/27/2020	437	6.25	23	19.4	238	20.7	751	10
TW-1 11/7/2019	286	7.72	23.3	55.4	40.1	61.9	878	10
TW-1 8/27/2020	304	7.61	23.6	58.3	41	72.4	835	10

Addendum 1

2020 Annual Groundwater Monitoring and Corrective Action Report Addendum 1

December 16, 2022
File No. 27217233.20

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: 2020 Annual Groundwater Monitoring and Corrective Action Report Addendum 1
Evergy Metro, Inc.
Upper AQC Impoundment
La Cygne Generating Station - La Cygne, Kansas

The Upper AQC Impoundment at the La Cygne Generating Station are 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 2020 for the Upper AQC Impoundment was completed and placed in the facility's operating record on January 29, 2021, as required by the Rule. The report was subsequently revised and placed in the operating record April 7, 2021. 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 2020 – First verification sampling for the Fall 2019 detection monitoring sampling event.
  - February 2020 – Second verification sampling for the Fall 2019 detection monitoring sampling event.
  - May 2020 – Spring 2020 semiannual detection monitoring sampling event and Appendix IV..
  - July 2020 – First verification sampling for the Spring 2020 detection monitoring sampling event.
  - August 2020 - Second verification sampling for the Spring 2020 detection monitoring sampling event.
  - November 2020 - Fall 2020 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 2020 included the following:

  - Fall 2019 semiannual detection monitoring statistical analyses.
  - Spring 2020 semiannual detection monitoring statistical analyses.

- Attachment 3 - Revised Groundwater Potentiometric Surface Maps:

  Includes revised 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 2020 - Spring 2020 semiannual detection monitoring sampling event.
  - November 2020 - Fall 2020 semiannual detection monitoring sampling event.

Jared Morrison
December 16, 2022

ATTACHMENT 1

Laboratory Analytical Reports

ATTACHMENT 1-1

January 2020 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 22, 2020

SCS Engineers - KS

Sample Delivery Group:	L1180158
Samples Received:	01/16/2020
Project Number:	27217233.19
Description:	Evergy - LaCygne Generating Station

Report To:

Jason Franks
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

MW-706 L1180158-01 GW

Collected by: G. Penaflor | Collected date/time: 01/14/20 12:50 | Received date/time: 01/16/20 10:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1412890	1	01/20/20 16:08	01/20/20 16:08	ST	Mt. Juliet, TN

MW-708 L1180158-02 GW

Collected by: G. Penaflor | Collected date/time: 01/14/20 12:15 | Received date/time: 01/16/20 10:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1412890	1	01/20/20 16:43	01/20/20 16:43	ST	Mt. Juliet, TN

DUPLICATE 1 L1180158-03 GW

Collected by: G. Penaflor | Collected date/time: 01/14/20 12:20 | Received date/time: 01/16/20 10:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1412890	1	01/20/20 17:18	01/20/20 17:18	ST	Mt. Juliet, TN

MW-903 L1180158-04 GW

Collected by: G. Penaflor | Collected date/time: 01/14/20 11:25 | Received date/time: 01/16/20 10:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1412890	1	01/20/20 17:30	01/20/20 17:30	ST	Mt. Juliet, TN

DUPLICATE 2 L1180158-05 GW

Collected by: G. Penaflor | Collected date/time: 01/14/20 11:30 | Received date/time: 01/16/20 10:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1412890	1	01/20/20 18:05	01/20/20 18:05	ST	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

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	9780		5000	1	01/20/2020 16:08	WG1412890

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	9450		5000	1	01/20/2020 16:43	WG1412890

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	9570		5000	1	01/20/2020 17:18	WG1412890

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	149		100	1	01/20/2020 17:30	WG1412890

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	136		100	1	01/20/2020 18:05	WG1412890

Method Blank (MB)

(MB) R3492459-1 01/20/20 13:36

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

L1180161-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1180161-02 01/20/20 18:28 • (DUP) R3492459-10 01/20/20 19:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Fluoride	577	582	1	0.811		15
Sulfate	9530	9420	1	1.16		15

Laboratory Control Sample (LCS)

(LCS) R3492459-2 01/20/20 13:48

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Fluoride	8000	8170	102	80.0-120	
Sulfate	40000	40800	102	80.0-120	

L1180152-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1180152-01 01/20/20 15:10 • (MS) R3492459-4 01/20/20 15:22 • (MSD) R3492459-5 01/20/20 15:34

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	%	%		%			%	%
Fluoride	5000	207	4770	4780	91.2	91.4	1	80.0-120			0.203	15
Sulfate	50000	1810000	1770000	1780000	0.000	0.000	1	80.0-120	E V	E V	0.286	15

L1180158-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1180158-02 01/20/20 16:43 • (MS) R3492459-6 01/20/20 16:55 • (MSD) R3492459-7 01/20/20 17:06

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	%	%		%			%	%
Fluoride	5000	595	5630	5680	101	102	1	80.0-120			0.817	15
Sulfate	50000	9450	59500	59900	100	101	1	80.0-120			0.587	15

L1180158-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1180158-04 01/20/20 17:30 • (MS) R3492459-8 01/20/20 17:41 • (MSD) R3492459-9 01/20/20 17:53

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 %
Fluoride	5000	149	4860	4970	94.2	96.3	1	80.0-120			2.12	15
Sulfate	50000	1040000	1080000	1080000	85.3	85.7	1	80.0-120	E	E	0.0167	15

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.

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	LAO00356
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

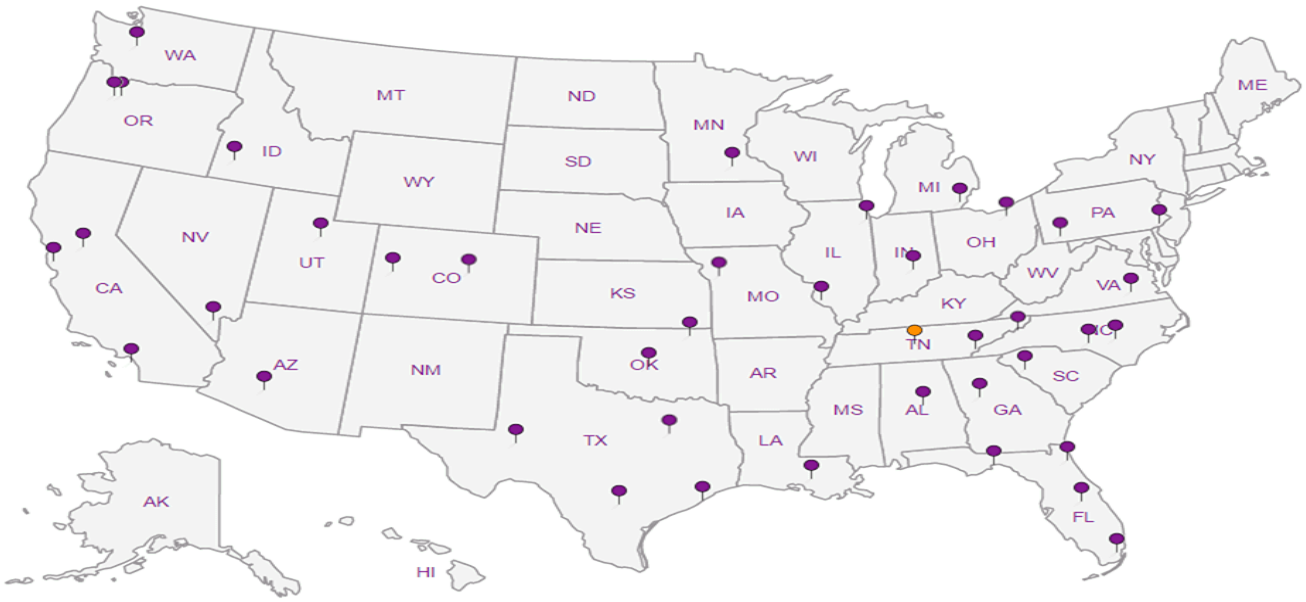
Third Party Federal Accreditations

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.



SCS Engineers - KS
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Report to: Jason Franks

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

Project Description: Evergy - LaCygne Generating St

City/State Collected:

Please Circle: PT MT CT ET

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

Client Project # 27217233.19

Lab Project # AQUAOPKS-LACYGNE

Collected by (print): G. Penaflor

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

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

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

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

SDG # L1180158

1144

Acctnum: AQUAOPKS
Template: T136276
Prelogin: P750327
PM: 206 - Jeff Carr
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Fluoride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-706	GRAB	GW	-	1/14/20	1250	1		X		-01
MW-708		GW	-		1215	1		X		-02
DUPLICATE 1		GW	-		1220	1		X		-03
708 MS/MSD		GW	-		1225	1		X		-02
MW-~~904~~ 903		GW	-		1125	1	X			-04
DUPLICATE 2		GW	-		1130	1	X			-05
MW-~~904~~ MS/MSD 903		GW	-		1135	1	X			-04

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # N/A

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: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	1/15/20	13:24		1-15-20 1325
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.2 °C Bottles Received: 7
	1/15/20	1800		1.4+0=1.4
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/16/20 Time: 10:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 22, 2020

SCS Engineers - KS

Sample Delivery Group:	L1180161
Samples Received:	01/16/2020
Project Number:	27217233.19
Description:	Evergy - LaCygne Generating Station

Report To:

Jason Franks
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

MW-706 L1180161-01 GW

Collected by: G. Penaflor
Collected date/time: 01/14/20 12:50
Received date/time: 01/16/20 10:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1412856	1	01/17/20 14:22	01/17/20 14:22	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1412890	10	01/20/20 18:16	01/20/20 18:16	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1412643	1	01/20/20 12:24	01/21/20 00:46	CCE	Mt. Juliet, TN

MW-708 L1180161-02 GW

Collected by: G. Penaflor
Collected date/time: 01/14/20 12:15
Received date/time: 01/16/20 10:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1412856	1	01/17/20 14:29	01/17/20 14:29	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1412890	1	01/20/20 18:28	01/20/20 18:28	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1412643	1	01/20/20 12:24	01/21/20 00:48	CCE	Mt. Juliet, TN

MW-903 L1180161-03 GW

Collected by: G. Penaflor
Collected date/time: 01/14/20 11:25
Received date/time: 01/16/20 10:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1412856	1	01/17/20 14:36	01/17/20 14:36	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1412890	1	01/20/20 19:14	01/20/20 19:14	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1412890	20	01/20/20 19:26	01/20/20 19:26	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1412643	1	01/20/20 12:24	01/21/20 00:51	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

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity,Bicarbonate	767000		20000	1	01/17/2020 14:22	WG1412856
Alkalinity,Carbonate	ND		20000	1	01/17/2020 14:22	WG1412856

Sample Narrative:

L1180161-01 WG1412856: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	247000		10000	10	01/20/2020 18:16	WG1412890

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	24400		1000	1	01/21/2020 00:46	WG1412643
Magnesium	19300		1000	1	01/21/2020 00:46	WG1412643
Potassium	6180		1000	1	01/21/2020 00:46	WG1412643
Sodium	422000		1000	1	01/21/2020 00:46	WG1412643

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity,Bicarbonate	523000		20000	1	01/17/2020 14:29	WG1412856
Alkalinity,Carbonate	ND		20000	1	01/17/2020 14:29	WG1412856

Sample Narrative:

L1180161-02 WG1412856: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	46000		1000	1	01/20/2020 18:28	WG1412890

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	29500		1000	1	01/21/2020 00:48	WG1412643
Magnesium	33500		1000	1	01/21/2020 00:48	WG1412643
Potassium	4350		1000	1	01/21/2020 00:48	WG1412643
Sodium	181000		1000	1	01/21/2020 00:48	WG1412643

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity,Bicarbonate	474000		20000	1	01/17/2020 14:36	WG1412856
Alkalinity,Carbonate	ND		20000	1	01/17/2020 14:36	WG1412856

Sample Narrative:

L1180161-03 WG1412856: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	25500		1000	1	01/20/2020 19:14	WG1412890
Sulfate	1090000		100000	20	01/20/2020 19:26	WG1412890

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	365000		1000	1	01/21/2020 00:51	WG1412643
Magnesium	115000		1000	1	01/21/2020 00:51	WG1412643
Potassium	5890		1000	1	01/21/2020 00:51	WG1412643
Sodium	113000		1000	1	01/21/2020 00:51	WG1412643

Method Blank (MB)

(MB) R3491844-1 01/17/20 13:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity,Bicarbonate	U		2710	20000
Alkalinity,Carbonate	U		2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1180222-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1180222-01 01/17/20 15:05 • (DUP) R3491844-3 01/17/20 17:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	90400	91200	1	0.887		20
Alkalinity,Carbonate	U	0.000	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

L1180327-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1180327-05 01/17/20 19:47 • (DUP) R3491844-4 01/17/20 20:00

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	U	0.000	1	0.000		20
Alkalinity,Carbonate	102000	97900	1	4.44		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Method Blank (MB)

(MB) R3492459-1 01/20/20 13:36

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

L1179868-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1179868-01 01/20/20 14:47 • (DUP) R3492459-3 01/20/20 14:59

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	35500	35600	1	0.269		15
Sulfate	12200	12100	1	0.0972		15

L1180161-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1180161-02 01/20/20 18:28 • (DUP) R3492459-10 01/20/20 19:03

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	46000	45600	1	0.977		15
Sulfate	9530	9420	1	1.16		15

Laboratory Control Sample (LCS)

(LCS) R3492459-2 01/20/20 13:48

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40200	100	80.0-120	
Sulfate	40000	40800	102	80.0-120	

L1180152-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1180152-01 01/20/20 15:10 • (MS) R3492459-4 01/20/20 15:22 • (MSD) R3492459-5 01/20/20 15:34

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	60500	108000	108000	95.4	94.9	1	80.0-120	E	E	0.234	15
Sulfate	50000	1810000	1770000	1780000	0.000	0.000	1	80.0-120	E V	E V	0.286	15

L1180158-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1180158-02 01/20/20 16:43 • (MS) R3492459-6 01/20/20 16:55 • (MSD) R3492459-7 01/20/20 17:06

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	45900	94100	94100	96.4	96.4	1	80.0-120			0.0346	15
Sulfate	50000	9450	59500	59900	100	101	1	80.0-120			0.587	15

L1180158-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1180158-04 01/20/20 17:30 • (MS) R3492459-8 01/20/20 17:41 • (MSD) R3492459-9 01/20/20 17:53

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	25400	74800	74900	98.8	99.0	1	80.0-120			0.159	15
Sulfate	50000	1040000	1080000	1080000	85.3	85.7	1	80.0-120	E	E	0.0167	15

Method Blank (MB)

(MB) R3492482-1 01/20/20 23:36

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		46.3	1000
Magnesium	18.0	J	11.1	1000
Potassium	175	J	102	1000
Sodium	189	J	98.5	1000

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

(LCS) R3492482-2 01/20/20 23:39 • (LCSD) R3492482-3 01/20/20 23:41

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 %
Calcium	10000	9650	9540	96.5	95.4	80.0-120			1.15	20
Magnesium	10000	9670	9610	96.7	96.1	80.0-120			0.689	20
Potassium	10000	9130	9100	91.3	91.0	80.0-120			0.345	20
Sodium	10000	9700	9590	97.0	95.9	80.0-120			1.11	20

L1180058-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1180058-02 01/20/20 23:44 • (MS) R3492482-5 01/20/20 23:49 • (MSD) R3492482-6 01/20/20 23:52

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 %
Calcium	10000	150000	157000	156000	71.7	56.6	1	75.0-125	V	V	0.965	20
Magnesium	10000	15600	24700	24700	90.6	91.1	1	75.0-125			0.219	20
Potassium	10000	6060	14900	14900	88.6	88.5	1	75.0-125			0.0168	20
Sodium	10000	63100	70900	70500	77.3	73.5	1	75.0-125		V	0.538	20

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Abbreviations and Definitions

MDL	Method Detection Limit.
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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.
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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.
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	LAO00356
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

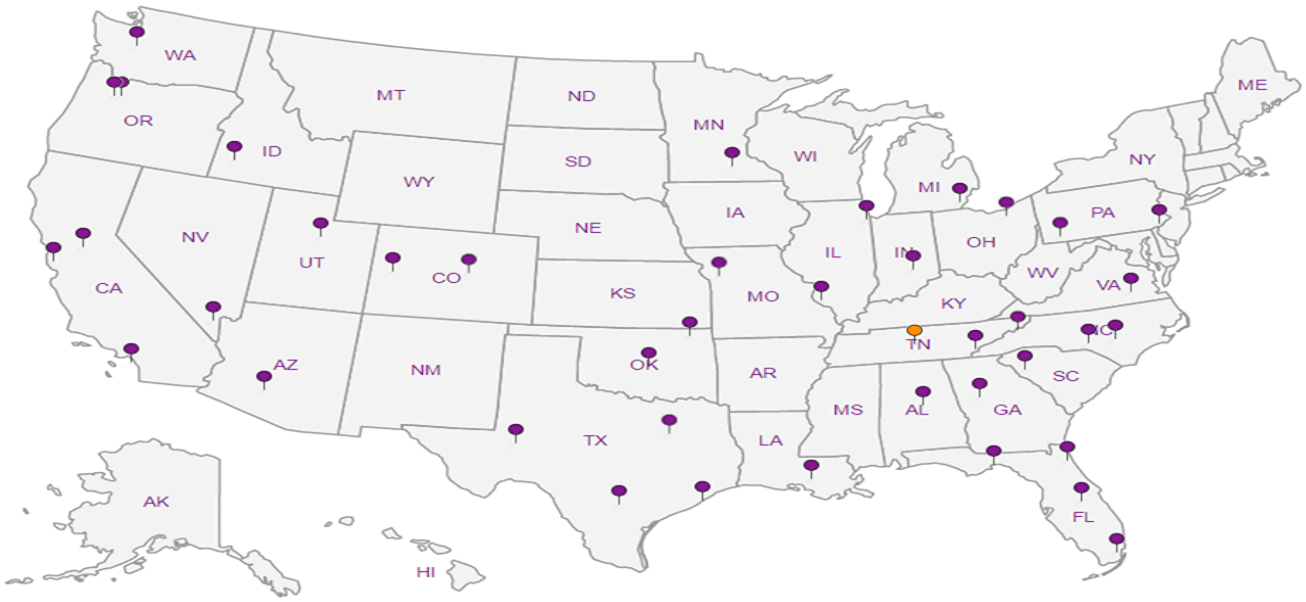
Third Party Federal Accreditations

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.



SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Report to: Jason Franks

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

Project Description: Evergy - LaCygne Generating St

City/State Collected:

Please Circle: PT MT CT ET

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

Client Project # 27217233.19

Lab Project # AQUAOPKS-LACYGNE

Collected by (print): G. Penaflor

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

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

Analysis / Container / Preservative

Pres Chk: L2

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALKBI, ALKCA 125mlHDPE-NoPres	Ca, K, Mg, Na - 6010 250mlHDPE-HNO3	Chloride - 9056 125mlHDPE-NoPres	Chloride, SO4 - 9056 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-706	GRAB	GW	-	1/14/20	1250	3	X	X	X			-01
MW-708	↓	GW	-	↓	1215	3	X	X	X			-02
MW-~~904~~ 903	↓	GW	-	↓	1125	3	X	X		X		-07

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

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

SDG # L1150161

1145

Acctnum: AQUAOPKS

Template: T152974

Prelogin: P750334

PM: 206 - Jeff Carr

PB:

Shipped Via:

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # N/A

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: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	1/15/20	13:24		1-15-20 1325
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.2 °C Bottles Received: 9
	1/15/20	1800		1.4+0=1.4
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
				1/16/20 10:45

If preservation required by login: Date/Time

Hold:

Condition: NCF / OK

ATTACHMENT 1-2

February 2020 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

February 06, 2020

SCS Engineers - KS

Sample Delivery Group:	L1186202
Samples Received:	02/05/2020
Project Number:	27217233.19
Description:	Evergy - LaCygne Generating Station

Report To:

Jason Franks
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

MW-706 L1186202-01 GW

Collected by: Jason R. Franks | Collected date/time: 02/03/20 15:35 | Received date/time: 02/05/20 10:35

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1423103	1	02/06/20 03:24	02/06/20 03:24	ELN	Mt. Juliet, TN

DUPLICATE 1 L1186202-02 GW

Collected by: Jason R. Franks | Collected date/time: 02/03/20 15:35 | Received date/time: 02/05/20 10:35

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1423103	1	02/06/20 04:07	02/06/20 04:07	ELN	Mt. Juliet, TN

MW-903 L1186202-03 GW

Collected by: Jason R. Franks | Collected date/time: 02/03/20 15:50 | Received date/time: 02/05/20 10:35

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1423103	1	02/06/20 04:51	02/06/20 04:51	ELN	Mt. Juliet, TN

DUPLICATE 2 L1186202-04 GW

Collected by: Jason R. Franks | Collected date/time: 02/03/20 15:50 | Received date/time: 02/05/20 10:35

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1423103	1	02/06/20 05:34	02/06/20 05:34	ELN	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

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	32800	J6	5000	1	02/06/2020 03:24	WG1423103

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	33700		5000	1	02/06/2020 04:07	WG1423103

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	130		100	1	02/06/2020 04:51	WG1423103

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	134		100	1	02/06/2020 05:34	WG1423103

Method Blank (MB)

(MB) R3497541-1 02/05/20 22:50

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

L1186180-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1186180-01 02/05/20 23:34 • (DUP) R3497541-3 02/05/20 23:48

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Fluoride	744	745	1	0.188		15
Sulfate	19400	19200	1	0.982		15

L1186330-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1186330-01 02/06/20 09:24 • (DUP) R3497541-18 02/06/20 09:39

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Fluoride	845	852	1	0.837		15
Sulfate	11100	11200	1	0.615		15

Laboratory Control Sample (LCS)

(LCS) R3497541-2 02/05/20 23:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluoride	8000	8070	101	80.0-120	
Sulfate	40000	38700	96.7	80.0-120	

L1186188-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1186188-01 02/06/20 00:02 • (MS) R3497541-4 02/06/20 00:17 • (MSD) R3497541-5 02/06/20 00:31

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 %
Fluoride	5000	323	4730	4780	88.1	89.1	1	80.0-120			0.981	15
Sulfate	50000	61600	98100	98700	73.1	74.2	1	80.0-120	J6	J6	0.569	15

L1186188-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1186188-03 02/06/20 01:00 • (MS) R3497541-6 02/06/20 01:14 • (MSD) R3497541-7 02/06/20 01:58

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 %
Fluoride	5000	337	4800	4890	89.2	91.0	1	80.0-120			1.82	15
Sulfate	50000	ND	46500	46700	88.3	88.7	1	80.0-120			0.398	15

L1186193-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1186193-01 02/06/20 02:26 • (MS) R3497541-8 02/06/20 02:41 • (MSD) R3497541-9 02/06/20 02:55

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 %
Fluoride	5000	209	4350	4470	82.8	85.3	1	80.0-120			2.83	15
Sulfate	50000	2000000	1980000	1980000	0.000	0.000	1	80.0-120	E V	E V	0.0504	15

L1186202-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1186202-01 02/06/20 03:24 • (MS) R3497541-10 02/06/20 03:38 • (MSD) R3497541-11 02/06/20 03:53

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 %
Fluoride	5000	1050	5500	5530	89.0	89.6	1	80.0-120			0.493	15
Sulfate	50000	32800	72500	71900	79.4	78.3	1	80.0-120	J6	J6	0.804	15

L1186202-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1186202-03 02/06/20 04:51 • (MS) R3497541-12 02/06/20 05:05 • (MSD) R3497541-13 02/06/20 05:19

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 %
Fluoride	5000	130	4630	4690	90.1	91.2	1	80.0-120			1.17	15
Sulfate	50000	1180000	1200000	1190000	30.6	24.6	1	80.0-120	E V	E V	0.250	15

L1186248-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1186248-01 02/06/20 05:48 • (MS) R3497541-14 02/06/20 06:03 • (MSD) R3497541-15 02/06/20 06:17

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 %
Fluoride	5000	329	4880	4940	90.9	92.1	1	80.0-120			1.24	15
Sulfate	50000	30100	71600	72000	83.1	83.8	1	80.0-120			0.503	15

L1186248-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1186248-06 02/06/20 07:00 • (MS) R3497541-16 02/06/20 07:43 • (MSD) R3497541-17 02/06/20 07:58

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 %
Fluoride	5000	792	5410	5420	92.3	92.6	1	80.0-120			0.272	15
Sulfate	50000	193000	208000	207000	29.4	28.8	1	80.0-120	E J6	E J6	0.142	15

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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.
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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).
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
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	LAO00356
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

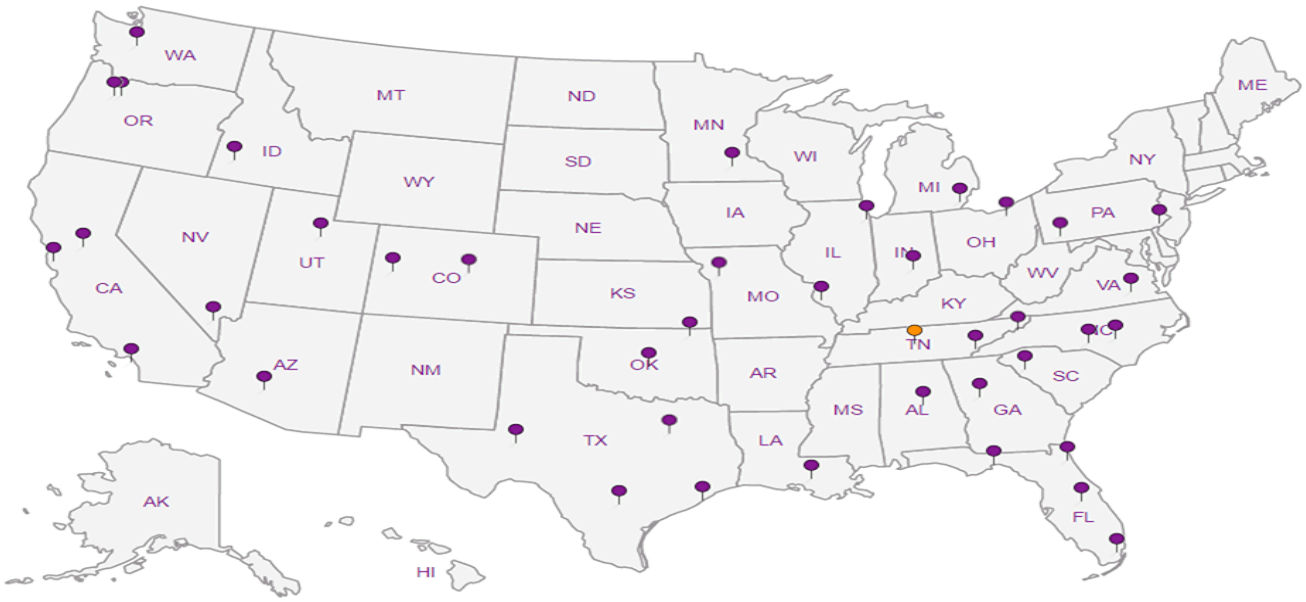
Third Party Federal Accreditations

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.



SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Report to: Jason Franks

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

Project Description: Evergy - LaCygne Generating St

City/State Collected: LaCygne KS

Please Circle: PT MT CT ET

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

Client Project # 27217233.19

Lab Project # AQUAOPKS-LACYGNE

Collected by (print): JASON R FRANKS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

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

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Fluoride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-706	GRAB	GW		02/03/20	1535	1		X		-01
MW-706 MS/MSD		GW			1535	1		X		01
DUPLICATE 1		GW			1535	1		X		02
MW-903		GW			1550	1	X			03
MW-903 MS/MSD		GW			1550	1	X			03
DUPLICATE 2		GW			1550	1	X			04

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

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

SDG # L1186202

C049

Acctnum: AQUAOPKS
Template: T136276
Prelogin: P753045
PM: 206 - Jeff Carr
PB:
Shipped Via:

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier SWA

Tracking #

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: Y N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
	2/4/20	1238			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.3 °C	Bottles Received: 6
	2/4/20	1800	FedEx	1.5+1=1.6	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:
				2-5-20	1035

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ATTACHMENT 1-3

May 2020 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

June 03, 2020

SCS Engineers - KS

Sample Delivery Group:	L1221034
Samples Received:	05/21/2020
Project Number:	27217233.20
Description:	KCPL - LaCygne Generating Station

Report To:

Jason Franks
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

MW-6 L1221034-01 GW

Collected by: Jason R Franks | Collected date/time: 05/19/20 11:20 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1480835	1	05/22/20 18:49	05/23/20 01:08	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	1	05/26/20 23:04	05/26/20 23:04	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	5	05/26/20 23:21	05/26/20 23:21	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480612	1	05/27/20 18:40	05/28/20 10:56	EL	Mt. Juliet, TN

MW-7 L1221034-02 GW

Collected by: Jason R Franks | Collected date/time: 05/19/20 12:10 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1480835	1	05/22/20 18:49	05/23/20 01:08	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	1	05/26/20 23:38	05/26/20 23:38	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480612	1	05/27/20 18:40	05/28/20 10:59	EL	Mt. Juliet, TN

MW-11 L1221034-03 GW

Collected by: Jason R Franks | Collected date/time: 05/19/20 15:00 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1481997	1	05/26/20 11:00	05/26/20 12:35	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	1	05/27/20 00:12	05/27/20 00:12	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	5	05/27/20 00:29	05/27/20 00:29	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480612	1	05/27/20 18:40	05/28/20 11:02	EL	Mt. Juliet, TN

MW-701 L1221034-04 GW

Collected by: Jason R Franks | Collected date/time: 05/19/20 13:15 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1481997	1	05/26/20 11:00	05/26/20 12:35	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	1	05/27/20 01:19	05/27/20 01:19	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480612	1	05/27/20 18:40	05/28/20 11:05	EL	Mt. Juliet, TN

MW-702 L1221034-05 GW

Collected by: Jason R Franks | Collected date/time: 05/19/20 10:35 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1481997	1	05/26/20 11:00	05/26/20 12:35	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	1	05/27/20 01:36	05/27/20 01:36	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480612	1	05/27/20 18:40	05/28/20 11:08	EL	Mt. Juliet, TN

MW-703 L1221034-06 GW

Collected by: Jason R Franks | Collected date/time: 05/19/20 11:30 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1481997	1	05/26/20 11:00	05/26/20 12:35	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	1	05/27/20 01:53	05/27/20 01:53	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	5	05/27/20 02:10	05/27/20 02:10	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480612	1	05/27/20 18:40	05/28/20 11:11	EL	Mt. Juliet, TN

MW-704 L1221034-07 GW

Collected by: Jason R Franks | Collected date/time: 05/19/20 14:00 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1481997	1	05/26/20 11:00	05/26/20 12:35	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	1	05/27/20 02:27	05/27/20 02:27	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	5	05/27/20 10:09	05/27/20 10:09	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1482049	1	05/26/20 22:12	05/28/20 15:14	EL	Mt. Juliet, TN

MW-705 L1221034-08 GW

Collected by: Jason R Franks | Collected date/time: 05/19/20 13:05 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1481997	1	05/26/20 11:00	05/26/20 12:35	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	1	05/27/20 03:18	05/27/20 03:18	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	5	05/27/20 03:35	05/27/20 03:35	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480612	1	05/27/20 18:40	05/28/20 11:20	EL	Mt. Juliet, TN

MW-706 L1221034-09 GW

Collected by: Jason R Franks | Collected date/time: 05/19/20 13:45 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1481997	1	05/26/20 11:00	05/26/20 12:35	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	1	05/27/20 03:52	05/27/20 03:52	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	5	05/27/20 04:42	05/27/20 04:42	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480612	1	05/27/20 18:40	05/28/20 11:23	EL	Mt. Juliet, TN

MW-707B L1221034-10 GW

Collected by: Jason R Franks | Collected date/time: 05/19/20 15:20 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1481997	1	05/26/20 11:00	05/26/20 12:35	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	1	05/27/20 09:52	05/27/20 09:52	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	100	05/27/20 05:16	05/27/20 05:16	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480612	1	05/27/20 18:40	05/28/20 11:26	EL	Mt. Juliet, TN

MW-708 L1221034-11 GW

Collected by: Jason R Franks | Collected date/time: 05/19/20 16:05 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1481997	1	05/26/20 11:00	05/26/20 12:35	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	1	05/27/20 05:33	05/27/20 05:33	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480613	1	05/27/20 17:48	05/28/20 13:40	EL	Mt. Juliet, TN

TW-1 L1221034-12 GW

Collected by: Jason R Franks | Collected date/time: 05/19/20 14:30 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1481997	1	05/26/20 11:00	05/26/20 12:35	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	1	05/27/20 05:50	05/27/20 05:50	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480613	1	05/27/20 17:48	05/28/20 13:43	EL	Mt. Juliet, TN

DUPLICATE #1 L1221034-13 GW

Collected by: Jason R Franks
Collected date/time: 05/19/20 14:05
Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1479183	1	05/22/20 18:13	05/23/20 02:26	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	1	05/27/20 06:07	05/27/20 06:07	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1481858	5	05/27/20 06:24	05/27/20 06:24	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480613	1	05/27/20 17:48	05/28/20 13:46	EL	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

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	1140000		20000	1	05/23/2020 01:08	WG1480835

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	191000		5000	5	05/26/2020 23:21	WG1481858
Fluoride	541		150	1	05/26/2020 23:04	WG1481858
Sulfate	133000		25000	5	05/26/2020 23:21	WG1481858

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1110		200	1	05/28/2020 10:56	WG1480612
Calcium	78800		1000	1	05/28/2020 10:56	WG1480612

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	896000		13300	1	05/23/2020 01:08	WG1480835

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	95900		1000	1	05/26/2020 23:38	WG1481858
Fluoride	1180		150	1	05/26/2020 23:38	WG1481858
Sulfate	ND		5000	1	05/26/2020 23:38	WG1481858

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1530		200	1	05/28/2020 10:59	WG1480612
Calcium	21800		1000	1	05/28/2020 10:59	WG1480612

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	904000		13300	1	05/26/2020 12:35	WG1481997

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	112000		5000	5	05/27/2020 00:29	WG1481858
Fluoride	507		150	1	05/27/2020 00:12	WG1481858
Sulfate	194000		25000	5	05/27/2020 00:29	WG1481858

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	891		200	1	05/28/2020 11:02	WG1480612
Calcium	62200		1000	1	05/28/2020 11:02	WG1480612

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	545000		10000	1	05/26/2020 12:35	WG1481997

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	48300		1000	1	05/27/2020 01:19	WG1481858
Fluoride	630		150	1	05/27/2020 01:19	WG1481858
Sulfate	84000		5000	1	05/27/2020 01:19	WG1481858

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	913		200	1	05/28/2020 11:05	WG1480612
Calcium	44700		1000	1	05/28/2020 11:05	WG1480612

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	406000		10000	1	05/26/2020 12:35	WG1481997

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	38000		1000	1	05/27/2020 01:36	WG1481858
Fluoride	1190		150	1	05/27/2020 01:36	WG1481858
Sulfate	ND		5000	1	05/27/2020 01:36	WG1481858

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1340		200	1	05/28/2020 11:08	WG1480612
Calcium	3330		1000	1	05/28/2020 11:08	WG1480612

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	823000		13300	1	05/26/2020 12:35	WG1481997

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	107000		5000	5	05/27/2020 02:10	WG1481858
Fluoride	1410		150	1	05/27/2020 01:53	WG1481858
Sulfate	ND		5000	1	05/27/2020 01:53	WG1481858

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1780		200	1	05/28/2020 11:11	WG1480612
Calcium	18500		1000	1	05/28/2020 11:11	WG1480612

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	1050000		20000	1	05/26/2020 12:35	WG1481997

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	93000		1000	1	05/27/2020 02:27	WG1481858
Fluoride	857		150	1	05/27/2020 02:27	WG1481858
Sulfate	148000		25000	5	05/27/2020 10:09	WG1481858

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1870		200	1	05/28/2020 15:14	WG1482049
Calcium	20900		1000	1	05/28/2020 15:14	WG1482049

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	822000		20000	1	05/26/2020 12:35	WG1481997

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	132000		5000	5	05/27/2020 03:35	WG1481858
Fluoride	955		150	1	05/27/2020 03:18	WG1481858
Sulfate	39300		5000	1	05/27/2020 03:18	WG1481858

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	2100		200	1	05/28/2020 11:20	WG1480612
Calcium	29400		1000	1	05/28/2020 11:20	WG1480612

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	952000		20000	1	05/26/2020 12:35	WG1481997

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	225000		5000	5	05/27/2020 04:42	WG1481858
Fluoride	1030		150	1	05/27/2020 03:52	WG1481858
Sulfate	24600		5000	1	05/27/2020 03:52	WG1481858

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1940		200	1	05/28/2020 11:23	WG1480612
Calcium	24800		1000	1	05/28/2020 11:23	WG1480612

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	5810000	J3	100000	1	05/26/2020 12:35	WG1481997

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	172000		100000	100	05/27/2020 05:16	WG1481858
Fluoride	325		150	1	05/27/2020 09:52	WG1481858
Sulfate	5310000		500000	100	05/27/2020 05:16	WG1481858

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1810		200	1	05/28/2020 11:26	WG1480612
Calcium	424000		1000	1	05/28/2020 11:26	WG1480612

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	586000		10000	1	05/26/2020 12:35	WG1481997

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	43600		1000	1	05/27/2020 05:33	WG1481858
Fluoride	502		150	1	05/27/2020 05:33	WG1481858
Sulfate	9420		5000	1	05/27/2020 05:33	WG1481858

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1260		200	1	05/28/2020 13:40	WG1480613
Calcium	30200		1000	1	05/28/2020 13:40	WG1480613

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	864000		20000	1	05/26/2020 12:35	WG1481997

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	40500		1000	1	05/27/2020 05:50	WG1481858
Fluoride	405		150	1	05/27/2020 05:50	WG1481858
Sulfate	69100		5000	1	05/27/2020 05:50	WG1481858

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1370		200	1	05/28/2020 13:43	WG1480613
Calcium	25000		1000	1	05/28/2020 13:43	WG1480613

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	1260000		20000	1	05/23/2020 02:26	WG1479183

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	93200		1000	1	05/27/2020 06:07	WG1481858
Fluoride	868		150	1	05/27/2020 06:07	WG1481858
Sulfate	147000		25000	5	05/27/2020 06:24	WG1481858

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1940		200	1	05/28/2020 13:46	WG1480613
Calcium	21100		1000	1	05/28/2020 13:46	WG1480613

Method Blank (MB)

(MB) R3531329-1 05/23/20 02:26

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

L1221034-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1221034-13 05/23/20 02:26 • (DUP) R3531329-3 05/23/20 02:26

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1260000	1260000	1	0.635		5

Laboratory Control Sample (LCS)

(LCS) R3531329-2 05/23/20 02:26

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8740000	99.3	85.0-115	

Method Blank (MB)

(MB) R3531333-1 05/23/20 01:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	3000	J	2820	10000

L1221034-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1221034-02 05/23/20 01:08 • (DUP) R3531333-3 05/23/20 01:08

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	896000	884000	1	1.35		5

Laboratory Control Sample (LCS)

(LCS) R3531333-2 05/23/20 01:08

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8810000	100	85.0-115	

Method Blank (MB)

(MB) R3532657-1 05/26/20 12:35

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

L1221034-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1221034-10 05/26/20 12:35 • (DUP) R3532657-3 05/26/20 12:35

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	5810000	7880000	1	30.2	J3	5

Laboratory Control Sample (LCS)

(LCS) R3532657-2 05/26/20 12:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	7580000	86.1	85.0-115	

Method Blank (MB)

(MB) R3532093-1 05/26/20 19:37

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

Original Sample (OS) • Duplicate (DUP)

(OS) • (DUP) R3532093-3 05/26/20 22:47

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride		12800	1	0.328		15
Fluoride		281	1	2.60		15
Sulfate		7840	1	0.886		15

L1221048-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1221048-05 05/27/20 08:39 • (DUP) R3532093-6 05/27/20 08:56

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	28200	28100	1	0.387		15
Fluoride	291	292	1	0.240		15
Sulfate	375000	374000	1	0.178	E	15

Laboratory Control Sample (LCS)

(LCS) R3532093-2 05/26/20 19:53

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39200	98.0	80.0-120	
Fluoride	8000	8010	100	80.0-120	
Sulfate	40000	39500	98.8	80.0-120	

L1221034-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221034-07 05/27/20 02:27 • (MS) R3532093-4 05/27/20 02:44 • (MSD) R3532093-5 05/27/20 03:01

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	93000	139000	139000	91.9	92.7	1	80.0-120	E	E	0.276	15
Fluoride	5000	857	5920	5910	101	101	1	80.0-120			0.233	15

L1221048-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1221048-05 05/27/20 08:39 • (MS) R3532093-7 05/27/20 09:13

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	28200	78000	99.7	1	80.0-120	
Fluoride	5000	291	5340	101	1	80.0-120	

Method Blank (MB)

(MB) R3532782-1 05/28/20 10:11

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		25.4	200
Calcium	U		389	1000

Laboratory Control Sample (LCS)

(LCS) R3532782-2 05/28/20 10:13

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	968	96.8	80.0-120	
Calcium	10000	9990	99.9	80.0-120	

L1221029-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221029-04 05/28/20 10:16 • (MS) R3532782-4 05/28/20 10:22 • (MSD) R3532782-5 05/28/20 10:24

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	958	1920	1950	96.0	99.2	1	75.0-125			1.69	20
Calcium	10000	67800	76600	77200	87.6	93.7	1	75.0-125			0.791	20

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

Method Blank (MB)

(MB) R3532784-1 05/28/20 13:23

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		25.4	200
Calcium	U		389	1000

Laboratory Control Sample (LCS)

(LCS) R3532784-2 05/28/20 13:26

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	956	95.6	80.0-120	
Calcium	10000	9730	97.3	80.0-120	

L1221030-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221030-07 05/28/20 13:29 • (MS) R3532784-4 05/28/20 13:34 • (MSD) R3532784-5 05/28/20 13:37

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	2140	3080	3090	93.7	94.8	1	75.0-125			0.369	20
Calcium	10000	26200	36100	36000	99.3	98.8	1	75.0-125			0.134	20

Method Blank (MB)

(MB) R3532811-1 05/28/20 15:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		25.4	200
Calcium	U		389	1000

Laboratory Control Sample (LCS)

(LCS) R3532811-2 05/28/20 15:11

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	932	93.2	80.0-120	
Calcium	10000	9520	95.2	80.0-120	

L1221034-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221034-07 05/28/20 15:14 • (MS) R3532811-4 05/28/20 15:19 • (MSD) R3532811-5 05/28/20 15:21

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 %
Boron	1000	1870	2750	2740	88.1	86.9	1	75.0-125			0.443	20
Calcium	10000	20900	31600	31700	107	108	1	75.0-125			0.341	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).
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.

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	LAO00356
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

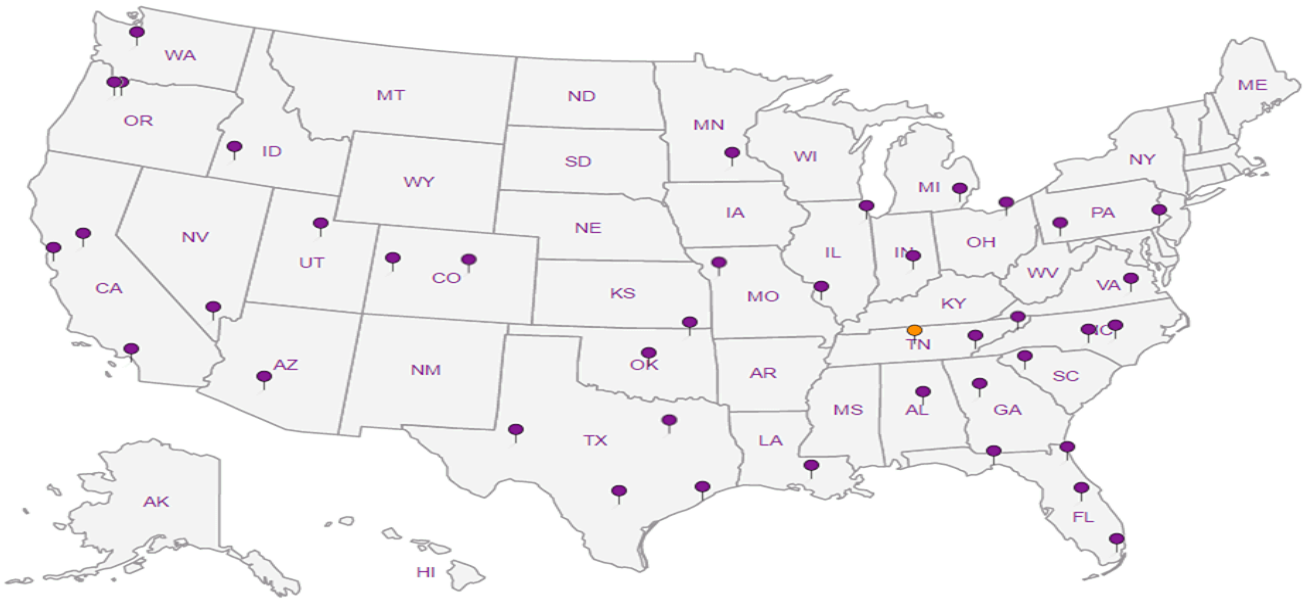
Third Party Federal Accreditations

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.



SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Report to: Jason Franks

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Email To: jfranks@scsengineers.com;jay.martin@evergy.c

Project Description: KCPL - LaCygne Generating Station

City/State Collected: LaCygne, KS

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project # 27217233.20

Lab Project # AQUAOPKS-LACYGNE

Collected by (print): Jason R Franks

Site/Facility ID #

P.O. #

Collected by (signature): Jason R. Franks

Immediately Packed on Ice N ___ Y ✓

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

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Pace Analytical® National Center for Testing & Innovation

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

SDG # 122634

G244

Acctnum: AQUAOPKS

Template: T150678

Prelogin: P769462

PM: 206 - Jeff Carr

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-6	GRAB	GW	—	5/19/20	1120	3	X	X	X		-01
MW-7		GW	—		1210	3	X	X	X		02
MW-11		GW	—		1500	3	X	X	X		03
MW-701		GW	—		1315	3	X	X	X		04
MW-702		GW	—		1035	3	X	X	X		05
MW-703		GW	—		1130	3	X	X	X		06
MW-704		GW	—		1400	3	X	X	X		07
MW-705		GW	—		1305	3	X	X	X		08
MW-706		GW	—		1345	3	X	X	X		09
MW-707B		GW	—		1520	3	X	X	X		10

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

Remarks:

pH ____ Temp ____

Flow ____ Other ____

Samples returned via: __ UPS __ FedEx __ Courier ____

Tracking #

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:		Y N

	Date:	Time:		
Relinquished by: (Signature) Jason R. Franks	5-20-20	0900	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR
Relinquished by: (Signature)	5-20-20	1900	Received by: (Signature) FedEx	Temp: 1.6-1=1.5 °C Bottles Received: 42
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) Carl Kemp	Date: 5/21/20 Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Report to: Jason Franks

Email To: jfranks@scsengineers.com;jay.martin@evergy.c

Project Description: KCPL - LaCygne Generating Station

City/State Collected: LaCygne, KS

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project # 27217233.20

Lab Project # AQUAOPKS-LACYGNE

Collected by (print): JASON R. FRANKS

Site/Facility ID #

P.O. #

Collected by (signature): Jason R. Franks

Immediately Packed on Ice N ___ Y ___

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

Analysis / Container / Preservative

Pres Chk

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-708	GRAB	GW	-	5/19/20	1605	3	X	X	X		11
TW-1		GW	-		1430	3	X	X	X		12
DUPLICATE #1		GW	-		1405	3	X	X	X		13
704 MS/MSD		GW	-		1410	3	X	X	X		14

Chain of Custody Page 2 of 2

Pace Analytical® National Center for Testing & Innovation

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

SDG # 1221034

Table #

Acctnum: AQUAOPKS

Template: T150678

Prelogin: P769462

PM: 206 - Jeff Carr

PB:

Shipped Via:

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

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: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Jason R. Franks	5-20-20	0900	
	5-20-20	1800	FedEx

Trip Blank Received: Yes / No HCl / MeoH TBR

Temp: 1.6 -.1 = 1.5 °C

Bottles Received: 42

If preservation required by Login: Date/Time

Received for lab by: (Signature)	Date:	Time:
Carl Kemp	5/21/20	8:45

Hold:

Condition: NCF / OK

Pace Analytical®
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ANALYTICAL REPORT

May 28, 2020

SCS Engineers - KS

Sample Delivery Group:	L1220990
Samples Received:	05/21/2020
Project Number:	27217233.20
Description:	Evergy - LaCygne Generating Station

Report To:

Jason Franks
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

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MW-6 L1220990-01 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 11:20 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 08:46	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 17:57	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 00:44	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 06:46	LAT	Mt. Juliet, TN

MW-7 L1220990-02 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 12:10 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 08:48	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:00	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 00:47	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 06:49	LAT	Mt. Juliet, TN

MW-10 L1220990-03 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 15:45 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 08:50	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:03	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 00:51	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 06:52	LAT	Mt. Juliet, TN

MW-11 L1220990-04 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 15:00 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 08:52	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:11	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 00:54	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 06:56	LAT	Mt. Juliet, TN

MW-13 L1220990-05 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 17:45 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 08:54	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:14	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 00:57	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 07:19	LAT	Mt. Juliet, TN

MW-14R L1220990-06 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 16:20 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 09:09	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:17	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 01:01	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 07:23	LAT	Mt. Juliet, TN

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

MW-15 L1220990-07 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 18:15 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 09:11	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:20	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 01:04	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 07:26	LAT	Mt. Juliet, TN

MW-601 L1220990-08 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 12:10 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 09:13	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:23	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 01:07	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 07:30	LAT	Mt. Juliet, TN

MW-602 L1220990-09 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 17:00 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 09:15	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:26	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 01:17	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 07:33	LAT	Mt. Juliet, TN

MW-701 L1220990-10 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 13:15 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 09:17	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:29	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 01:21	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 07:37	LAT	Mt. Juliet, TN

MW-702 L1220990-11 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 10:35 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 09:19	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:32	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 01:24	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 07:40	LAT	Mt. Juliet, TN

MW-703 L1220990-12 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 11:30 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 09:21	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:35	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 01:28	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 07:44	LAT	Mt. Juliet, TN

MW-704 L1220990-13 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 14:00 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 08:36	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 17:43	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 00:04	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 06:32	LAT	Mt. Juliet, TN

MW-705 L1220990-14 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 13:05 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 09:23	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:38	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 01:31	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480617	1	05/26/20 19:42	05/27/20 07:47	LAT	Mt. Juliet, TN

MW-706 L1220990-15 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 13:45 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480428	1	05/21/20 19:00	05/22/20 09:25	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:46	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 17:16	LD	Mt. Juliet, TN

MW-707B L1220990-16 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 15:20 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 09:47	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:50	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 17:19	LD	Mt. Juliet, TN

MW-708 L1220990-17 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 16:05 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 09:49	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:53	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 17:23	LD	Mt. Juliet, TN

TW-1 L1220990-18 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 14:30 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 09:51	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:56	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 17:26	LD	Mt. Juliet, TN

DUPLICATE 1 L1220990-19 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 14:05 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 09:56	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480610	1	05/27/20 01:02	05/27/20 18:59	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 16:09	LD	Mt. Juliet, TN

MW-801 L1220990-20 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 16:50 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 09:35	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480611	1	05/27/20 07:12	05/27/20 19:18	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 17:43	LD	Mt. Juliet, TN

MW-802 L1220990-21 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 17:45 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 09:58	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480611	1	05/27/20 07:12	05/27/20 19:36	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 16:12	LD	Mt. Juliet, TN

MW-803 L1220990-22 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 18:30 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 10:00	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480611	1	05/27/20 07:12	05/27/20 19:44	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 16:15	LD	Mt. Juliet, TN

MW-804 L1220990-23 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 19:10 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 10:02	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480611	1	05/27/20 07:12	05/27/20 19:47	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 16:19	LD	Mt. Juliet, TN

MW-805 L1220990-24 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 19:50 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 10:04	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480611	1	05/27/20 07:12	05/27/20 19:50	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 16:22	LD	Mt. Juliet, TN

DUPLICATE 2 L1220990-25 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 16:50 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 10:06	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480611	1	05/27/20 07:12	05/27/20 19:53	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 16:25	LD	Mt. Juliet, TN

MW-901 L1220990-26 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 18:50 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 10:08	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480611	1	05/27/20 07:12	05/27/20 19:55	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 16:29	LD	Mt. Juliet, TN

MW-902 L1220990-27 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 15:25 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 10:10	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480611	1	05/27/20 07:12	05/27/20 19:58	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 16:32	LD	Mt. Juliet, TN

MW-903 L1220990-28 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 19:00 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 10:12	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480611	1	05/27/20 07:12	05/27/20 20:01	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 16:35	LD	Mt. Juliet, TN

MW-904 L1220990-29 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 11:25 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 09:41	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480611	1	05/27/20 07:12	05/27/20 19:29	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480619	1	05/27/20 05:58	05/27/20 09:00	LAT	Mt. Juliet, TN

MW-905 L1220990-30 GW

Collected by: Jason R. Franks | Collected date/time: 05/19/20 14:05 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 10:14	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480611	1	05/27/20 07:12	05/27/20 20:04	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 16:52	LD	Mt. Juliet, TN

DUPLICATE 3 L1220990-31 GW

Collected by: Jason R. Franks
Collected date/time: 05/19/20 11:25
Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1480429	1	05/21/20 19:00	05/22/20 10:22	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1480611	1	05/27/20 07:12	05/27/20 20:06	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1480618	1	05/26/20 23:43	05/27/20 16:55	LD	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

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	05/22/2020 08:46	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Barium	137		5.00	1	05/27/2020 17:57	WG1480610
Chromium	ND		10.0	1	05/27/2020 17:57	WG1480610
Cobalt	ND		10.0	1	05/27/2020 17:57	WG1480610
Lithium	43.2		15.0	1	05/27/2020 17:57	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 17:57	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	ND		4.00	1	05/27/2020 00:44	WG1480617
Arsenic	ND		2.00	1	05/27/2020 00:44	WG1480617
Beryllium	ND		2.00	1	05/27/2020 06:46	WG1480617
Cadmium	ND		1.00	1	05/27/2020 00:44	WG1480617
Lead	ND		5.00	1	05/27/2020 00:44	WG1480617
Selenium	ND		2.00	1	05/27/2020 00:44	WG1480617
Thallium	ND		2.00	1	05/27/2020 00:44	WG1480617

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 08:48	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	490		5.00	1	05/27/2020 18:00	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:00	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:00	WG1480610
Lithium	68.3		15.0	1	05/27/2020 18:00	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:00	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 00:47	WG1480617
Arsenic	ND		2.00	1	05/27/2020 00:47	WG1480617
Beryllium	ND		2.00	1	05/27/2020 06:49	WG1480617
Cadmium	ND		1.00	1	05/27/2020 00:47	WG1480617
Lead	ND		5.00	1	05/27/2020 00:47	WG1480617
Selenium	ND		2.00	1	05/27/2020 00:47	WG1480617
Thallium	ND		2.00	1	05/27/2020 00:47	WG1480617

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 08:50	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	320		5.00	1	05/27/2020 18:03	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:03	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:03	WG1480610
Lithium	30.6		15.0	1	05/27/2020 18:03	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:03	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 00:51	WG1480617
Arsenic	11.5		2.00	1	05/27/2020 00:51	WG1480617
Beryllium	ND		2.00	1	05/27/2020 06:52	WG1480617
Cadmium	ND		1.00	1	05/27/2020 00:51	WG1480617
Lead	ND		5.00	1	05/27/2020 00:51	WG1480617
Selenium	ND		2.00	1	05/27/2020 00:51	WG1480617
Thallium	ND		2.00	1	05/27/2020 00:51	WG1480617

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 08:52	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	32.3		5.00	1	05/27/2020 18:11	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:11	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:11	WG1480610
Lithium	59.0		15.0	1	05/27/2020 18:11	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:11	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 00:54	WG1480617
Arsenic	ND		2.00	1	05/27/2020 00:54	WG1480617
Beryllium	ND		2.00	1	05/27/2020 06:56	WG1480617
Cadmium	ND		1.00	1	05/27/2020 00:54	WG1480617
Lead	ND		5.00	1	05/27/2020 00:54	WG1480617
Selenium	ND		2.00	1	05/27/2020 00:54	WG1480617
Thallium	ND		2.00	1	05/27/2020 00:54	WG1480617

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 08:54	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	16.6		5.00	1	05/27/2020 18:14	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:14	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:14	WG1480610
Lithium	50.0		15.0	1	05/27/2020 18:14	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:14	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 00:57	WG1480617
Arsenic	ND		2.00	1	05/27/2020 00:57	WG1480617
Beryllium	ND		2.00	1	05/27/2020 07:19	WG1480617
Cadmium	ND		1.00	1	05/27/2020 00:57	WG1480617
Lead	ND		5.00	1	05/27/2020 00:57	WG1480617
Selenium	ND		2.00	1	05/27/2020 00:57	WG1480617
Thallium	ND		2.00	1	05/27/2020 00:57	WG1480617

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:09	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	42.3		5.00	1	05/27/2020 18:17	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:17	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:17	WG1480610
Lithium	38.5		15.0	1	05/27/2020 18:17	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:17	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 01:01	WG1480617
Arsenic	ND		2.00	1	05/27/2020 01:01	WG1480617
Beryllium	ND		2.00	1	05/27/2020 07:23	WG1480617
Cadmium	ND		1.00	1	05/27/2020 01:01	WG1480617
Lead	ND		5.00	1	05/27/2020 01:01	WG1480617
Selenium	ND		2.00	1	05/27/2020 01:01	WG1480617
Thallium	ND		2.00	1	05/27/2020 01:01	WG1480617

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:11	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	42.5		5.00	1	05/27/2020 18:20	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:20	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:20	WG1480610
Lithium	21.0		15.0	1	05/27/2020 18:20	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:20	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 01:04	WG1480617
Arsenic	ND		2.00	1	05/27/2020 01:04	WG1480617
Beryllium	ND		2.00	1	05/27/2020 07:26	WG1480617
Cadmium	ND		1.00	1	05/27/2020 01:04	WG1480617
Lead	ND		5.00	1	05/27/2020 01:04	WG1480617
Selenium	ND		2.00	1	05/27/2020 01:04	WG1480617
Thallium	ND		2.00	1	05/27/2020 01:04	WG1480617

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:13	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	136		5.00	1	05/27/2020 18:23	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:23	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:23	WG1480610
Lithium	59.8		15.0	1	05/27/2020 18:23	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:23	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 01:07	WG1480617
Arsenic	ND		2.00	1	05/27/2020 01:07	WG1480617
Beryllium	ND		2.00	1	05/27/2020 07:30	WG1480617
Cadmium	1.46		1.00	1	05/27/2020 01:07	WG1480617
Lead	ND		5.00	1	05/27/2020 01:07	WG1480617
Selenium	ND		2.00	1	05/27/2020 01:07	WG1480617
Thallium	ND		2.00	1	05/27/2020 01:07	WG1480617

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:15	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	105		5.00	1	05/27/2020 18:26	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:26	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:26	WG1480610
Lithium	52.3		15.0	1	05/27/2020 18:26	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:26	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 01:17	WG1480617
Arsenic	ND		2.00	1	05/27/2020 01:17	WG1480617
Beryllium	ND		2.00	1	05/27/2020 07:33	WG1480617
Cadmium	ND		1.00	1	05/27/2020 01:17	WG1480617
Lead	ND		5.00	1	05/27/2020 01:17	WG1480617
Selenium	ND		2.00	1	05/27/2020 01:17	WG1480617
Thallium	ND		2.00	1	05/27/2020 01:17	WG1480617

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:17	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	201		5.00	1	05/27/2020 18:29	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:29	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:29	WG1480610
Lithium	36.2		15.0	1	05/27/2020 18:29	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:29	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 01:21	WG1480617
Arsenic	ND		2.00	1	05/27/2020 01:21	WG1480617
Beryllium	ND		2.00	1	05/27/2020 07:37	WG1480617
Cadmium	ND		1.00	1	05/27/2020 01:21	WG1480617
Lead	ND		5.00	1	05/27/2020 01:21	WG1480617
Selenium	ND		2.00	1	05/27/2020 01:21	WG1480617
Thallium	ND		2.00	1	05/27/2020 01:21	WG1480617

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:19	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	133		5.00	1	05/27/2020 18:32	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:32	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:32	WG1480610
Lithium	118		15.0	1	05/27/2020 18:32	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:32	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 01:24	WG1480617
Arsenic	ND		2.00	1	05/27/2020 01:24	WG1480617
Beryllium	ND		2.00	1	05/27/2020 07:40	WG1480617
Cadmium	ND		1.00	1	05/27/2020 01:24	WG1480617
Lead	ND		5.00	1	05/27/2020 01:24	WG1480617
Selenium	ND		2.00	1	05/27/2020 01:24	WG1480617
Thallium	ND		2.00	1	05/27/2020 01:24	WG1480617

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:21	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	275		5.00	1	05/27/2020 18:35	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:35	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:35	WG1480610
Lithium	59.6		15.0	1	05/27/2020 18:35	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:35	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 01:28	WG1480617
Arsenic	ND		2.00	1	05/27/2020 01:28	WG1480617
Beryllium	ND		2.00	1	05/27/2020 07:44	WG1480617
Cadmium	ND		1.00	1	05/27/2020 01:28	WG1480617
Lead	ND		5.00	1	05/27/2020 01:28	WG1480617
Selenium	ND		2.00	1	05/27/2020 01:28	WG1480617
Thallium	ND		2.00	1	05/27/2020 01:28	WG1480617

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 08:36	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	72.6		5.00	1	05/27/2020 17:43	WG1480610
Chromium	ND		10.0	1	05/27/2020 17:43	WG1480610
Cobalt	ND		10.0	1	05/27/2020 17:43	WG1480610
Lithium	92.1		15.0	1	05/27/2020 17:43	WG1480610
Molybdenum	5.09		5.00	1	05/27/2020 17:43	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 00:04	WG1480617
Arsenic	ND		2.00	1	05/27/2020 00:04	WG1480617
Beryllium	ND		2.00	1	05/27/2020 06:32	WG1480617
Cadmium	ND		1.00	1	05/27/2020 00:04	WG1480617
Lead	ND		5.00	1	05/27/2020 00:04	WG1480617
Selenium	ND		2.00	1	05/27/2020 00:04	WG1480617
Thallium	ND		2.00	1	05/27/2020 00:04	WG1480617

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:23	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	88.7		5.00	1	05/27/2020 18:38	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:38	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:38	WG1480610
Lithium	113		15.0	1	05/27/2020 18:38	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:38	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 01:31	WG1480617
Arsenic	ND		2.00	1	05/27/2020 01:31	WG1480617
Beryllium	ND		2.00	1	05/27/2020 07:47	WG1480617
Cadmium	ND		1.00	1	05/27/2020 01:31	WG1480617
Lead	ND		5.00	1	05/27/2020 01:31	WG1480617
Selenium	ND		2.00	1	05/27/2020 01:31	WG1480617
Thallium	ND		2.00	1	05/27/2020 01:31	WG1480617

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:25	WG1480428

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	199		5.00	1	05/27/2020 18:46	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:46	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:46	WG1480610
Lithium	116		15.0	1	05/27/2020 18:46	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:46	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 17:16	WG1480618
Arsenic	ND		2.00	1	05/27/2020 17:16	WG1480618
Beryllium	ND		2.00	1	05/27/2020 17:16	WG1480618
Cadmium	ND		1.00	1	05/27/2020 17:16	WG1480618
Lead	ND		5.00	1	05/27/2020 17:16	WG1480618
Selenium	ND		2.00	1	05/27/2020 17:16	WG1480618
Thallium	ND		2.00	1	05/27/2020 17:16	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:47	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	24.1		5.00	1	05/27/2020 18:50	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:50	WG1480610
Cobalt	12.1		10.0	1	05/27/2020 18:50	WG1480610
Lithium	1010		15.0	1	05/27/2020 18:50	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:50	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 17:19	WG1480618
Arsenic	ND		2.00	1	05/27/2020 17:19	WG1480618
Beryllium	ND		2.00	1	05/27/2020 17:19	WG1480618
Cadmium	ND		1.00	1	05/27/2020 17:19	WG1480618
Lead	ND		5.00	1	05/27/2020 17:19	WG1480618
Selenium	ND		2.00	1	05/27/2020 17:19	WG1480618
Thallium	ND		2.00	1	05/27/2020 17:19	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:49	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	202		5.00	1	05/27/2020 18:53	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:53	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:53	WG1480610
Lithium	69.1		15.0	1	05/27/2020 18:53	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:53	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 17:23	WG1480618
Arsenic	ND		2.00	1	05/27/2020 17:23	WG1480618
Beryllium	ND		2.00	1	05/27/2020 17:23	WG1480618
Cadmium	ND		1.00	1	05/27/2020 17:23	WG1480618
Lead	ND		5.00	1	05/27/2020 17:23	WG1480618
Selenium	ND		2.00	1	05/27/2020 17:23	WG1480618
Thallium	ND		2.00	1	05/27/2020 17:23	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:51	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	65.6		5.00	1	05/27/2020 18:56	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:56	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:56	WG1480610
Lithium	127		15.0	1	05/27/2020 18:56	WG1480610
Molybdenum	ND		5.00	1	05/27/2020 18:56	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 17:26	WG1480618
Arsenic	ND		2.00	1	05/27/2020 17:26	WG1480618
Beryllium	ND		2.00	1	05/27/2020 17:26	WG1480618
Cadmium	ND		1.00	1	05/27/2020 17:26	WG1480618
Lead	ND		5.00	1	05/27/2020 17:26	WG1480618
Selenium	ND		2.00	1	05/27/2020 17:26	WG1480618
Thallium	ND		2.00	1	05/27/2020 17:26	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:56	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	73.2		5.00	1	05/27/2020 18:59	WG1480610
Chromium	ND		10.0	1	05/27/2020 18:59	WG1480610
Cobalt	ND		10.0	1	05/27/2020 18:59	WG1480610
Lithium	91.3		15.0	1	05/27/2020 18:59	WG1480610
Molybdenum	5.02		5.00	1	05/27/2020 18:59	WG1480610

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 16:09	WG1480618
Arsenic	ND		2.00	1	05/27/2020 16:09	WG1480618
Beryllium	ND		2.00	1	05/27/2020 16:09	WG1480618
Cadmium	ND		1.00	1	05/27/2020 16:09	WG1480618
Lead	ND		5.00	1	05/27/2020 16:09	WG1480618
Selenium	ND		2.00	1	05/27/2020 16:09	WG1480618
Thallium	ND		2.00	1	05/27/2020 16:09	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:35	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	509	O1	5.00	1	05/27/2020 19:18	WG1480611
Chromium	ND		10.0	1	05/27/2020 19:18	WG1480611
Cobalt	ND		10.0	1	05/27/2020 19:18	WG1480611
Lithium	84.2		15.0	1	05/27/2020 19:18	WG1480611
Molybdenum	9.74		5.00	1	05/27/2020 19:18	WG1480611

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 17:43	WG1480618
Arsenic	ND		2.00	1	05/27/2020 17:43	WG1480618
Beryllium	ND		2.00	1	05/27/2020 17:43	WG1480618
Cadmium	ND		1.00	1	05/27/2020 17:43	WG1480618
Lead	7.79		5.00	1	05/27/2020 17:43	WG1480618
Selenium	ND		2.00	1	05/27/2020 17:43	WG1480618
Thallium	ND		2.00	1	05/27/2020 17:43	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:58	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	939		5.00	1	05/27/2020 19:36	WG1480611
Chromium	ND		10.0	1	05/27/2020 19:36	WG1480611
Cobalt	ND		10.0	1	05/27/2020 19:36	WG1480611
Lithium	85.0		15.0	1	05/27/2020 19:36	WG1480611
Molybdenum	ND		5.00	1	05/27/2020 19:36	WG1480611

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 16:12	WG1480618
Arsenic	ND		2.00	1	05/27/2020 16:12	WG1480618
Beryllium	ND		2.00	1	05/27/2020 16:12	WG1480618
Cadmium	ND		1.00	1	05/27/2020 16:12	WG1480618
Lead	ND		5.00	1	05/27/2020 16:12	WG1480618
Selenium	ND		2.00	1	05/27/2020 16:12	WG1480618
Thallium	ND		2.00	1	05/27/2020 16:12	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 10:00	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	231		5.00	1	05/27/2020 19:44	WG1480611
Chromium	ND		10.0	1	05/27/2020 19:44	WG1480611
Cobalt	ND		10.0	1	05/27/2020 19:44	WG1480611
Lithium	67.2		15.0	1	05/27/2020 19:44	WG1480611
Molybdenum	5.00		5.00	1	05/27/2020 19:44	WG1480611

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 16:15	WG1480618
Arsenic	ND		2.00	1	05/27/2020 16:15	WG1480618
Beryllium	ND		2.00	1	05/27/2020 16:15	WG1480618
Cadmium	ND		1.00	1	05/27/2020 16:15	WG1480618
Lead	ND		5.00	1	05/27/2020 16:15	WG1480618
Selenium	ND		2.00	1	05/27/2020 16:15	WG1480618
Thallium	ND		2.00	1	05/27/2020 16:15	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 10:02	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	147		5.00	1	05/27/2020 19:47	WG1480611
Chromium	ND		10.0	1	05/27/2020 19:47	WG1480611
Cobalt	ND		10.0	1	05/27/2020 19:47	WG1480611
Lithium	34.2		15.0	1	05/27/2020 19:47	WG1480611
Molybdenum	ND		5.00	1	05/27/2020 19:47	WG1480611

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 16:19	WG1480618
Arsenic	ND		2.00	1	05/27/2020 16:19	WG1480618
Beryllium	ND		2.00	1	05/27/2020 16:19	WG1480618
Cadmium	ND		1.00	1	05/27/2020 16:19	WG1480618
Lead	ND		5.00	1	05/27/2020 16:19	WG1480618
Selenium	ND		2.00	1	05/27/2020 16:19	WG1480618
Thallium	ND		2.00	1	05/27/2020 16:19	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 10:04	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	35.0		5.00	1	05/27/2020 19:50	WG1480611
Chromium	ND		10.0	1	05/27/2020 19:50	WG1480611
Cobalt	ND		10.0	1	05/27/2020 19:50	WG1480611
Lithium	24.0		15.0	1	05/27/2020 19:50	WG1480611
Molybdenum	ND		5.00	1	05/27/2020 19:50	WG1480611

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 16:22	WG1480618
Arsenic	ND		2.00	1	05/27/2020 16:22	WG1480618
Beryllium	ND		2.00	1	05/27/2020 16:22	WG1480618
Cadmium	ND		1.00	1	05/27/2020 16:22	WG1480618
Lead	ND		5.00	1	05/27/2020 16:22	WG1480618
Selenium	ND		2.00	1	05/27/2020 16:22	WG1480618
Thallium	ND		2.00	1	05/27/2020 16:22	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 10:06	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	517		5.00	1	05/27/2020 19:53	WG1480611
Chromium	ND		10.0	1	05/27/2020 19:53	WG1480611
Cobalt	ND		10.0	1	05/27/2020 19:53	WG1480611
Lithium	84.2		15.0	1	05/27/2020 19:53	WG1480611
Molybdenum	10.3		5.00	1	05/27/2020 19:53	WG1480611

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 16:25	WG1480618
Arsenic	ND		2.00	1	05/27/2020 16:25	WG1480618
Beryllium	ND		2.00	1	05/27/2020 16:25	WG1480618
Cadmium	ND		1.00	1	05/27/2020 16:25	WG1480618
Lead	10.9		5.00	1	05/27/2020 16:25	WG1480618
Selenium	ND		2.00	1	05/27/2020 16:25	WG1480618
Thallium	ND		2.00	1	05/27/2020 16:25	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 10:08	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	165		5.00	1	05/27/2020 19:55	WG1480611
Chromium	ND		10.0	1	05/27/2020 19:55	WG1480611
Cobalt	ND		10.0	1	05/27/2020 19:55	WG1480611
Lithium	60.4		15.0	1	05/27/2020 19:55	WG1480611
Molybdenum	ND		5.00	1	05/27/2020 19:55	WG1480611

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 16:29	WG1480618
Arsenic	ND		2.00	1	05/27/2020 16:29	WG1480618
Beryllium	ND		2.00	1	05/27/2020 16:29	WG1480618
Cadmium	ND		1.00	1	05/27/2020 16:29	WG1480618
Lead	ND		5.00	1	05/27/2020 16:29	WG1480618
Selenium	ND		2.00	1	05/27/2020 16:29	WG1480618
Thallium	ND		2.00	1	05/27/2020 16:29	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 10:10	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	126		5.00	1	05/27/2020 19:58	WG1480611
Chromium	ND		10.0	1	05/27/2020 19:58	WG1480611
Cobalt	ND		10.0	1	05/27/2020 19:58	WG1480611
Lithium	33.3		15.0	1	05/27/2020 19:58	WG1480611
Molybdenum	ND		5.00	1	05/27/2020 19:58	WG1480611

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 16:32	WG1480618
Arsenic	ND		2.00	1	05/27/2020 16:32	WG1480618
Beryllium	ND		2.00	1	05/27/2020 16:32	WG1480618
Cadmium	ND		1.00	1	05/27/2020 16:32	WG1480618
Lead	ND		5.00	1	05/27/2020 16:32	WG1480618
Selenium	ND		2.00	1	05/27/2020 16:32	WG1480618
Thallium	ND		2.00	1	05/27/2020 16:32	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 10:12	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	15.7		5.00	1	05/27/2020 20:01	WG1480611
Chromium	ND		10.0	1	05/27/2020 20:01	WG1480611
Cobalt	ND		10.0	1	05/27/2020 20:01	WG1480611
Lithium	50.6		15.0	1	05/27/2020 20:01	WG1480611
Molybdenum	ND		5.00	1	05/27/2020 20:01	WG1480611

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 16:35	WG1480618
Arsenic	ND		2.00	1	05/27/2020 16:35	WG1480618
Beryllium	ND		2.00	1	05/27/2020 16:35	WG1480618
Cadmium	ND		1.00	1	05/27/2020 16:35	WG1480618
Lead	ND		5.00	1	05/27/2020 16:35	WG1480618
Selenium	ND		2.00	1	05/27/2020 16:35	WG1480618
Thallium	ND		2.00	1	05/27/2020 16:35	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 09:41	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	72.9		5.00	1	05/27/2020 19:29	WG1480611
Chromium	ND		10.0	1	05/27/2020 19:29	WG1480611
Cobalt	ND		10.0	1	05/27/2020 19:29	WG1480611
Lithium	41.1		15.0	1	05/27/2020 19:29	WG1480611
Molybdenum	8.64		5.00	1	05/27/2020 19:29	WG1480611

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 09:00	WG1480619
Arsenic	ND		2.00	1	05/27/2020 09:00	WG1480619
Beryllium	ND		2.00	1	05/27/2020 09:00	WG1480619
Cadmium	ND		1.00	1	05/27/2020 09:00	WG1480619
Lead	ND		5.00	1	05/27/2020 09:00	WG1480619
Selenium	ND		2.00	1	05/27/2020 09:00	WG1480619
Thallium	ND		2.00	1	05/27/2020 09:00	WG1480619

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 10:14	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	136		5.00	1	05/27/2020 20:04	WG1480611
Chromium	ND		10.0	1	05/27/2020 20:04	WG1480611
Cobalt	ND		10.0	1	05/27/2020 20:04	WG1480611
Lithium	63.3		15.0	1	05/27/2020 20:04	WG1480611
Molybdenum	ND		5.00	1	05/27/2020 20:04	WG1480611

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 16:52	WG1480618
Arsenic	2.46		2.00	1	05/27/2020 16:52	WG1480618
Beryllium	ND		2.00	1	05/27/2020 16:52	WG1480618
Cadmium	ND		1.00	1	05/27/2020 16:52	WG1480618
Lead	ND		5.00	1	05/27/2020 16:52	WG1480618
Selenium	ND		2.00	1	05/27/2020 16:52	WG1480618
Thallium	ND		2.00	1	05/27/2020 16:52	WG1480618

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/22/2020 10:22	WG1480429

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	72.2		5.00	1	05/27/2020 20:06	WG1480611
Chromium	ND		10.0	1	05/27/2020 20:06	WG1480611
Cobalt	ND		10.0	1	05/27/2020 20:06	WG1480611
Lithium	42.1		15.0	1	05/27/2020 20:06	WG1480611
Molybdenum	7.89		5.00	1	05/27/2020 20:06	WG1480611

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/27/2020 16:55	WG1480618
Arsenic	ND		2.00	1	05/27/2020 16:55	WG1480618
Beryllium	ND		2.00	1	05/27/2020 16:55	WG1480618
Cadmium	ND		1.00	1	05/27/2020 16:55	WG1480618
Lead	ND		5.00	1	05/27/2020 16:55	WG1480618
Selenium	ND		2.00	1	05/27/2020 16:55	WG1480618
Thallium	ND		2.00	1	05/27/2020 16:55	WG1480618

Method Blank (MB)

(MB) R3530756-1 05/22/20 08:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Mercury	U		0.100	0.200

Laboratory Control Sample (LCS)

(LCS) R3530756-2 05/22/20 08:31

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	3.00	2.80	93.4	80.0-120	

L1220990-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1220990-13 05/22/20 08:36 • (MS) R3530756-3 05/22/20 08:38 • (MSD) R3530756-4 05/22/20 08:40

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 %
Mercury	3.00	ND	3.05	3.00	102	99.9	1	75.0-125			1.79	20

Method Blank (MB)

(MB) R3530790-1 05/22/20 09:27

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Mercury	U		0.100	0.200

Laboratory Control Sample (LCS)

(LCS) R3530790-2 05/22/20 09:33

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	3.00	3.05	102	80.0-120	

L1220990-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1220990-20 05/22/20 09:35 • (MS) R3530790-3 05/22/20 09:37 • (MSD) R3530790-4 05/22/20 09:39

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 %
Mercury	3.00	ND	3.14	3.10	105	103	1	75.0-125			1.26	20

L1220990-29 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1220990-29 05/22/20 09:41 • (MS) R3530790-5 05/22/20 09:43 • (MSD) R3530790-6 05/22/20 09:45

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 %
Mercury	3.00	ND	3.04	3.02	101	101	1	75.0-125			0.676	20

Method Blank (MB)

(MB) R3532365-1 05/27/20 17:37

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Barium	U		0.895	5.00
Chromium	U		5.00	10.0
Cobalt	U		0.807	10.0
Lithium	U		5.74	15.0
Molybdenum	U		1.04	5.00

Laboratory Control Sample (LCS)

(LCS) R3532365-2 05/27/20 17:40

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	1000	986	98.6	80.0-120	
Chromium	1000	968	96.8	80.0-120	
Cobalt	1000	986	98.6	80.0-120	
Lithium	1000	945	94.5	80.0-120	
Molybdenum	1000	998	99.8	80.0-120	

L1220990-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1220990-13 05/27/20 17:43 • (MS) R3532365-4 05/27/20 17:48 • (MSD) R3532365-5 05/27/20 17:51

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 %
Barium	1000	72.6	1020	1030	94.8	95.3	1	75.0-125			0.477	20
Chromium	1000	ND	963	969	96.3	96.9	1	75.0-125			0.645	20
Cobalt	1000	ND	1020	1030	102	103	1	75.0-125			0.506	20
Lithium	1000	92.1	1010	1010	91.4	91.6	1	75.0-125			0.208	20
Molybdenum	1000	5.09	989	995	98.4	99.0	1	75.0-125			0.645	20

Method Blank (MB)

(MB) R3532357-1 05/27/20 19:13

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Barium	U		0.895	5.00
Chromium	U		5.00	10.0
Cobalt	U		0.807	10.0
Lithium	U		5.74	15.0
Molybdenum	U		1.04	5.00

Laboratory Control Sample (LCS)

(LCS) R3532357-2 05/27/20 19:15

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	1000	976	97.6	80.0-120	
Chromium	1000	937	93.7	80.0-120	
Cobalt	1000	938	93.8	80.0-120	
Lithium	1000	936	93.6	80.0-120	
Molybdenum	1000	976	97.6	80.0-120	

L1220990-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1220990-20 05/27/20 19:18 • (MS) R3532357-4 05/27/20 19:23 • (MSD) R3532357-5 05/27/20 19:26

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	1000	509	1460	1460	95.5	95.5	1	75.0-125			0.0385	20
Chromium	1000	ND	935	939	93.5	93.9	1	75.0-125			0.363	20
Cobalt	1000	ND	987	988	98.7	98.8	1	75.0-125			0.168	20
Lithium	1000	84.2	1000	1010	91.9	92.5	1	75.0-125			0.611	20
Molybdenum	1000	9.74	1000	996	99.4	98.6	1	75.0-125			0.824	20

L1220990-29 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1220990-29 05/27/20 19:29 • (MS) R3532357-6 05/27/20 19:31 • (MSD) R3532357-7 05/27/20 19:34

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 %
Barium	1000	72.9	1030	1030	96.2	96.1	1	75.0-125			0.0924	20
Chromium	1000	ND	937	932	93.7	93.2	1	75.0-125			0.520	20
Cobalt	1000	ND	975	969	97.5	96.9	1	75.0-125			0.637	20
Lithium	1000	41.1	971	967	92.9	92.6	1	75.0-125			0.401	20
Molybdenum	1000	8.64	991	994	98.2	98.5	1	75.0-125			0.278	20

Method Blank (MB)

(MB) R3531944-1 05/26/20 23:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	U		1.32	4.00
Arsenic	U		0.735	2.00
Cadmium	U		0.478	1.00
Lead	U		2.49	5.00
Selenium	U		0.657	2.00
Thallium	U		0.460	2.00

Method Blank (MB)

(MB) R3531965-1 05/27/20 06:25

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Beryllium	U		0.454	2.00

Laboratory Control Sample (LCS)

(LCS) R3531944-2 05/27/20 00:00

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	50.0	46.3	92.5	80.0-120	
Arsenic	50.0	51.0	102	80.0-120	
Cadmium	50.0	49.5	99.1	80.0-120	
Lead	50.0	48.5	97.0	80.0-120	
Selenium	50.0	43.9	87.8	80.0-120	
Thallium	50.0	47.7	95.3	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3531965-2 05/27/20 06:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Beryllium	50.0	42.1	84.1	80.0-120	

L1220990-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1220990-13 05/27/20 00:04 • (MS) R3531944-4 05/27/20 00:10 • (MSD) R3531944-5 05/27/20 00:14

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 %
Antimony	50.0	ND	49.0	50.5	94.5	97.7	1	75.0-125			3.14	20
Arsenic	50.0	ND	51.2	50.3	102	101	1	75.0-125			1.62	20
Cadmium	50.0	ND	48.9	48.0	97.9	96.0	1	75.0-125			1.86	20
Lead	50.0	ND	49.8	48.1	99.7	96.2	1	75.0-125			3.56	20
Selenium	50.0	ND	48.9	48.5	97.8	97.0	1	75.0-125			0.866	20
Thallium	50.0	ND	48.2	47.1	96.4	94.2	1	75.0-125			2.31	20

L1220990-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1220990-13 05/27/20 06:32 • (MS) R3531965-4 05/27/20 06:39 • (MSD) R3531965-5 05/27/20 06:42

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 %
Beryllium	50.0	ND	44.2	43.5	88.4	87.0	1	75.0-125			1.65	20

Method Blank (MB)

(MB) R3532304-6 05/27/20 17:37

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	U		1.32	4.00
Arsenic	U		0.735	2.00
Beryllium	U		0.454	2.00
Cadmium	U		0.478	1.00
Lead	U		2.49	5.00
Selenium	U		0.657	2.00
Thallium	U		0.460	2.00

Laboratory Control Sample (LCS)

(LCS) R3532304-7 05/27/20 17:40

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	50.0	45.9	91.8	80.0-120	
Arsenic	50.0	42.6	85.2	80.0-120	
Beryllium	50.0	50.8	102	80.0-120	
Cadmium	50.0	48.1	96.2	80.0-120	
Lead	50.0	46.7	93.3	80.0-120	
Selenium	50.0	49.1	98.3	80.0-120	
Thallium	50.0	46.3	92.5	80.0-120	

L1220990-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1220990-20 05/27/20 17:43 • (MS) R3532304-9 05/27/20 17:50 • (MSD) R3532304-10 05/27/20 17:53

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 %
Antimony	50.0	ND	46.4	46.0	92.9	92.0	1	75.0-125			0.943	20
Arsenic	50.0	ND	48.2	48.6	93.7	94.7	1	75.0-125			0.974	20
Beryllium	50.0	ND	56.7	55.1	113	110	1	75.0-125			2.88	20
Cadmium	50.0	ND	49.3	49.4	98.7	98.8	1	75.0-125			0.186	20
Lead	50.0	7.79	55.2	56.3	94.9	97.0	1	75.0-125			1.89	20
Selenium	50.0	ND	47.9	49.4	95.8	98.7	1	75.0-125			3.00	20
Thallium	50.0	ND	47.8	47.5	95.5	95.0	1	75.0-125			0.538	20

Method Blank (MB)

(MB) R3532049-1 05/27/20 08:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	U		1.32	4.00
Arsenic	U		0.735	2.00
Beryllium	U		0.454	2.00
Cadmium	U		0.478	1.00
Lead	U		2.49	5.00
Selenium	U		0.657	2.00
Thallium	U		0.460	2.00

Laboratory Control Sample (LCS)

(LCS) R3532049-2 05/27/20 08:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	50.0	51.5	103	80.0-120	
Arsenic	50.0	49.8	99.6	80.0-120	
Beryllium	50.0	45.7	91.5	80.0-120	
Cadmium	50.0	50.1	100	80.0-120	
Lead	50.0	49.0	98.0	80.0-120	
Selenium	50.0	54.0	108	80.0-120	
Thallium	50.0	48.7	97.4	80.0-120	

L1220990-29 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1220990-29 05/27/20 09:00 • (MS) R3532049-4 05/27/20 09:07 • (MSD) R3532049-5 05/27/20 09:10

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 %
Antimony	50.0	ND	53.5	55.8	107	112	1	75.0-125			4.26	20
Arsenic	50.0	ND	49.4	48.9	96.7	95.8	1	75.0-125			0.878	20
Beryllium	50.0	ND	48.2	46.7	96.4	93.5	1	75.0-125			3.07	20
Cadmium	50.0	ND	50.7	50.0	101	100	1	75.0-125			1.31	20
Lead	50.0	ND	49.6	50.6	99.3	101	1	75.0-125			1.88	20
Selenium	50.0	ND	55.7	54.1	111	108	1	75.0-125			3.05	20
Thallium	50.0	ND	49.4	48.2	98.7	96.3	1	75.0-125			2.46	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
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

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	LAO00356
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

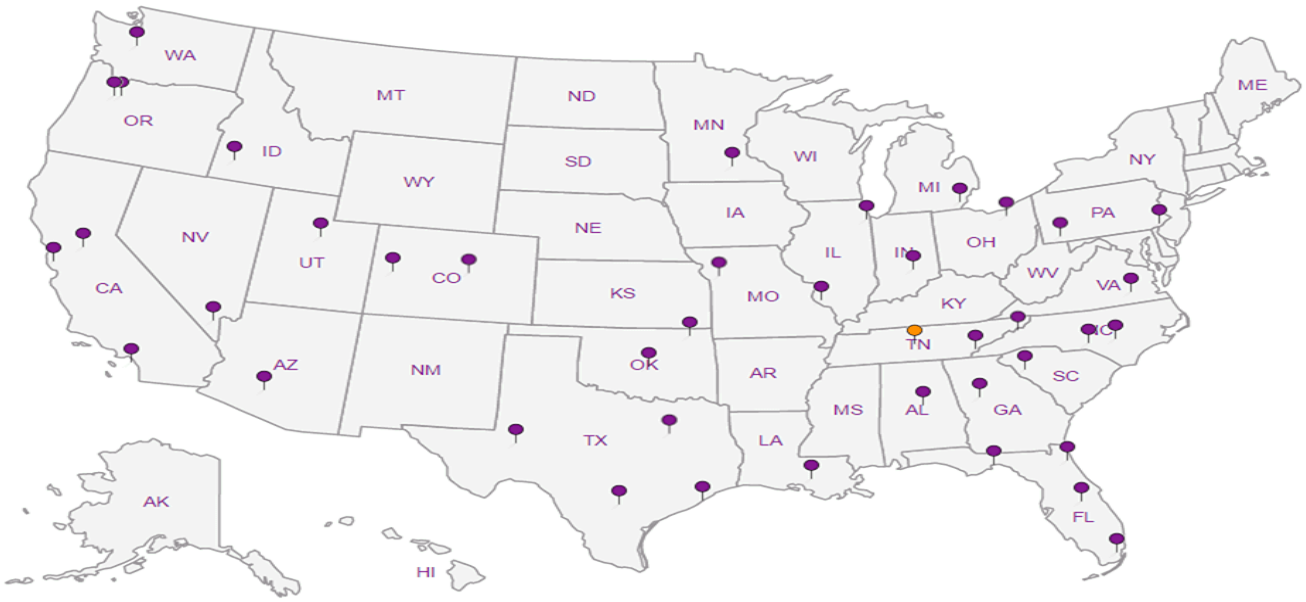
Third Party Federal Accreditations

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.



SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk: LC

Report to: Jason Franks

Email To: jfranks@scsengineers.com;jay.martin@evergy.c

Project Description: Evergy - LaCygne Generating Station

City/State Collected: LaCygne KS

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project # 27217233.20

Lab Project # AQUAOPKS-LACYGNE

Collected by (print): Jason R. Franks

Site/Facility ID #

P.O. #

Collected by (signature): Jason R. Franks

Immediately Packed on Ice N ___ Y ✓

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

Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page 1 of 4

Pace Analytical® National Center for Testing & Innovation

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

SDG # 122090

G240

Acctnum: AQUAOPKS
Template: T166954
Prelogin: P770321
PM: 206 - Jeff Carr
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CCR Metals 250mlHDPE-HNO3	Remarks	Sample # (lab only)
MW-6	GRAB	GW	-	5/19/20	1120	1	X		-01
MW-7		GW	-		1210	1	X		02
MW-10		GW	-		1545	1	X		03
MW-11		GW	-		1500	1	X		04
MW-13		GW	-		1745	1	X		05
MW-14R		GW	-		1620	1	X		06
MW-15		GW	-		1815	1	X		07
MW-601		GW	-		1210	1	X		08
MW-602		GW	-		1700	1	X		09
MW-701		GW	-		1315	1	X		10

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

Remarks:6010 Metals-BA,CR,CO,LI,MO, 6020 Metals-SB,AS,BE,CD,PB,SE,TL, 7470 Metals-HG.

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:		✓Y N

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
	5-20-20	0960			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.6 °C -.1 =1.5	Bottles Received: 34
	5-20-20	1600	FedEx		
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/21/20	Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

SCS Engineers - KS
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk: Y

Report to: Jason Franks

Email To: jfranks@scsengineers.com;jay.martin@evergy.c

Project Description: Evergy - LaCygne Generating Station

City/State Collected: La Cygne, KS

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project # 27217233.20

Lab Project # AQUAOPKS-LACYGNE

Collected by (print): Jason R. Franks

Site/Facility ID #

P.O. #

Collected by (signature): Jason R. Franks

Immediately Packed on Ice N ___ Y ✓

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

Date Results Needed

Quote #

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CCR Metals 250mlHDPE-HNO3	Remarks	Sample # (lab only)
MW-702	Grab	GW	—	5/19/20	1035	1	X		11
MW-703		GW	—		1130	1	X		12
MW-704		GW	—		1400	1	X		13
MW-705		GW	—		1305	1	X		14
MW-706		GW	—		1345	1	X		15
MW-707B		GW	—		1520	1	X		16
MW-708		GW	—		1605	1	X		17
TW-1		GW	—		1430	1	X		18
DUPLICATE 1		GW	—		1405	1	X		19
704 MS/MSD		GW	—		1410	1	X		13 20

Chain of Custody

Pace Analytical® National Center for Testing & Innovation

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

SDG # 1220990

Table #

Acctnum: AQUAOPKS

Template: T166954

Prelogin: P770321

PM: 206 - Jeff Carr

PB:

Shipped Via:

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

Remarks: 6010 Metals-BA,CR,CO,LI,MO, 6020 Metals-SB,AS,BE,CD,PB,SE,TL, 7470 Metals-HG.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking #

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: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Jason R. Franks	5-20-20	0900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.6, 1.5 °C Bottles Received: 34	
	5-20-20	1800	FedEx		
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/21/20 Time: 8:45	Hold: Condition: NCF / OK
			Carol Kemp		

SCS Engineers - KS
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Report to: Jason Franks
Email To: jfranks@scsengineers.com;jay.martin@evergy.c

Project Description: Evergy - LaCygne Generating Station
City/State Collected: LA CYGNE, KS
Please Circle: PT MT CT ET

Phone: 913-681-0030
Client Project # 27217233.20
Lab Project # AQUAOPKS-LACYGNE

Collected by (print): Jason R. Franks
Site/Facility ID #
P.O. #

Collected by (signature): Jason R. Franks
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Date Results Needed
Quote #

Pres Chk: CL

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CCR Metals 250mlHDPE-HNO3	Remarks	Sample # (lab only)
MW-801	GRAB	GW	—	5/19/20	1650	1	X		20 21
MW-802		GW	—		1745	1	X		21 22
MW-803		GW	—		1830	1	X		22 23
MW-804		GW	—		1910	1	X		23 24
MW-805		GW	—		1950	1	X		24 25
DUPLICATE 2		GW	—		1650	1	X		25 26
801 MS/MSD		GW	—		1655	1	X		26 27
MW-901		GW	—		1850	1	X		26 28
MW-902		GW	—		1525	1	X		27 29
MW-903		GW	—		1900	1	X		28 30

Chain of Custody Page 3 of 4

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

SDG # 1220990
Table #
Acctnum: AQUAOPKS
Template: T166954
Prelogin: P770321
PM: 206 - Jeff Carr
PB:
Shipped Via:

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

Remarks: 6010 Metals-BA,CR,CO,LI,MO, 6020 Metals-SB,AS,BE,CD,PB,SE,TL, 7470 Metals-HG.

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____
Tracking #

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: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	If preservation required by Login: Date/Time
Jason R. Franks	5-20-20	0900			
	5-20-20	1800	FedEx	Temp: 1.6-1=1.5 Bottles Received: 34	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/21/20 Time: 8:45	Hold: Condition: NCF / OK

Chain of Custody Page 4 of 4

SCS Engineers - KS
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pace Analytical®
National Center for Testing & Innovation
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@evergy.c

Project Description: Evergy - LaCygne Generating Station
City/State Collected: LA CYGNE, KS
Please Circle: PT MT CT ET

Phone: 913-681-0030
Client Project # 27217233.20
Lab Project # AQUAOPKS-LACYGNE

Collected by (print): JASON R FRANKS
Site/Facility ID #
P.O. #

Collected by (signature): Jason R Franks
Immediately Packed on Ice N ___ Y ✓

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

Quote #

SDG # 120990
Table #
Acctnum: AQUAOPKS
Template: T166954
Prelogin: P770321
PM: 206 - Jeff Carr
PB:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CCR Metals 250mlHDPE-HNO3	Remarks	Sample # (lab only)
MW-904	GRAB	GW	—	5/19/20	1125	1	X		29
MW-905	↓	GW	—		1405	1	X		30
DUPLICATE 3		GW	—		1125	1	X		31
904 MS/MSD		GW	—	↓	1125	1	X		29-32

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

Remarks: 6010 Metals-BA,CR,CO,LI,MO, 6020 Metals-SB,AS,BE,CD,PB,SE,TL, 7470 Metals-HG.

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: Y N

Samples returned via: __ UPS __ FedEx __ Courier _____
Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Jason R Franks	5-20-20	0900	
	5-20-20	1800	FedEx
			Received for lab by: (Signature): Carol Kemp

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 4.6-1=1.5 °C Bottles Received: 34

If preservation required by Login: Date/Time

Date: 5/21/20 Time: 8:45

Hold: Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

June 19, 2020

SCS Engineers - KS

Sample Delivery Group:	L1221007
Samples Received:	05/21/2020
Project Number:	27217233.20
Description:	Evergy - LaCygne Generating Station

Report To:

Jason Franks
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

MW-6 L1221007-01 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 11:20 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 09:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 19:13	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 19:13	RGT	Mt. Juliet, TN

MW-7 L1221007-02 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 12:10 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 09:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 19:13	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 19:13	RGT	Mt. Juliet, TN

MW-10 L1221007-03 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 15:45 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 09:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN

MW-11 L1221007-04 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 15:00 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 09:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN

MW-13 L1221007-05 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 17:45 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 09:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN

MW-14R L1221007-06 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 16:20 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 09:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN

MW-15 L1221007-07 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 18:15 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 09:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN

MW-601 L1221007-08 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 12:10 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 09:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN

MW-602 L1221007-09 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 17:00 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 09:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN

MW-701 L1221007-10 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 13:15 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 13:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN

MW-702 L1221007-11 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 10:35 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 13:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN

MW-703 L1221007-12 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 11:30 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 13:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN

MW-704 L1221007-13 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 14:00 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 13:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN

MW-705 L1221007-14 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 13:05 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 13:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN

MW-706 L1221007-15 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 13:45 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482900	1	05/28/20 14:52	06/03/20 13:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1487018	1	06/04/20 15:41	06/05/20 15:02	RGT	Mt. Juliet, TN

MW-707B L1221007-16 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 15:20 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1483720	1	05/29/20 12:43	06/07/20 12:40	SNR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN

MW-708 L1221007-17 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 16:05 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1483720	1	05/29/20 12:43	06/07/20 12:40	SNR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN

TW-1 L1221007-18 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 14:30 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1483720	1	05/29/20 12:43	06/07/20 12:40	SNR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN

DUPLICATE 1 L1221007-19 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 14:05 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1483720	1	05/29/20 12:43	06/07/20 12:40	SNR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN

MW-801 L1221007-20 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 16:50 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1483720	1	05/29/20 12:43	06/07/20 12:40	SNR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN

MW-802 L1221007-21 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 17:45 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1483720	1	05/29/20 12:43	06/07/20 12:40	SNR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN

MW-803 L1221007-22 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 18:30 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1483720	1	05/29/20 12:43	06/07/20 12:40	SNR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN

MW-804 L1221007-23 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 19:10 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1483720	1	05/29/20 12:43	06/08/20 09:45	SNR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN

MW-805 L1221007-24 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 19:50 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1483720	1	05/29/20 12:43	06/08/20 09:45	SNR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN

DUPLICATE 2 L1221007-25 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 16:50 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1483720	1	05/29/20 12:43	06/08/20 09:45	SNR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN

MW-901 L1221007-26 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 18:50 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1483720	1	05/29/20 12:43	06/08/20 09:45	SNR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN

MW-902 L1221007-27 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 15:25 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1484279	1	06/02/20 13:54	06/16/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1488872	1	06/08/20 15:36	06/16/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN

MW-903 L1221007-28 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 19:00 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1484279	1	06/02/20 13:54	06/16/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1488872	1	06/08/20 15:36	06/16/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1488872	1	06/08/20 15:36	06/09/20 15:19	RGT	Mt. Juliet, TN

MW-904 L1221007-29 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 11:25 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1484279	1	06/02/20 13:54	06/16/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1489235	1	06/11/20 14:06	06/16/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1489235	1	06/11/20 14:06	06/12/20 15:10	RGT	Mt. Juliet, TN

MW-905 L1221007-30 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 05/19/20 14:05 | Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1484279	1	06/02/20 13:54	06/16/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1489235	1	06/11/20 14:06	06/16/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1489235	1	06/11/20 14:06	06/12/20 15:10	RGT	Mt. Juliet, TN

DUPLICATE 3 L1221007-31 Non-Potable Water

Collected by: Jason R Franks
Collected date/time: 05/19/20 11:25
Received date/time: 05/21/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1484279	1	06/02/20 13:54	06/16/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1489235	1	06/11/20 14:06	06/16/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1489235	1	06/11/20 14:06	06/12/20 15:15	RGT	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 radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.08		0.600	0.851	06/03/2020 09:35	WG1482900
(T) Barium	*113*			*62.0-143*	*06/03/2020 09:35*	WG1482900
(T) Yttrium	*107*			*79.0-136*	*06/03/2020 09:35*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.42		0.876	1.15	06/05/2020 19:13	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.342		0.276	0.296	06/05/2020 19:13	WG1487018
(T) Barium-133	*77.6*			*30.0-143*	*06/05/2020 19:13*	WG1487018

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.06		0.644	0.995	06/03/2020 09:35	WG1482900
(T) Barium	*109*			*62.0-143*	*06/03/2020 09:35*	WG1482900
(T) Yttrium	*105*			*79.0-136*	*06/03/2020 09:35*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.72		0.972	1.25	06/05/2020 19:13	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.653		0.328	0.254	06/05/2020 19:13	WG1487018
(T) Barium-133	*84.7*			*30.0-143*	*06/05/2020 19:13*	WG1487018

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.0592		0.677	1.1	06/03/2020 09:35	WG1482900
(T) Barium	*116*			*62.0-143*	*06/03/2020 09:35*	WG1482900
(T) Yttrium	*108*			*79.0-136*	*06/03/2020 09:35*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.425		0.974	1.39	06/05/2020 15:02	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.425		0.297	0.287	06/05/2020 15:02	WG1487018
(T) Barium-133	*79.9*			*30.0-143*	*06/05/2020 15:02*	WG1487018

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	2.50		0.568	0.891	06/03/2020 09:35	WG1482900
(T) Barium	*103*			*62.0-143*	*06/03/2020 09:35*	WG1482900
(T) Yttrium	*98.0*			*79.0-136*	*06/03/2020 09:35*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	2.54		0.684	1.12	06/05/2020 15:02	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0343		0.116	0.226	06/05/2020 15:02	WG1487018
(T) Barium-133	*94.9*			*30.0-143*	*06/05/2020 15:02*	WG1487018

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.09		0.578	0.799	06/03/2020 09:35	WG1482900
(T) Barium	*101*			*62.0-143*	*06/03/2020 09:35*	WG1482900
(T) Yttrium	*110*			*79.0-136*	*06/03/2020 09:35*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.25		0.776	1.08	06/05/2020 15:02	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.161		0.198	0.277	06/05/2020 15:02	WG1487018
(T) Barium-133	*99.2*			*30.0-143*	*06/05/2020 15:02*	WG1487018

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.849		0.601	0.925	06/03/2020 09:35	WG1482900
(T) Barium	*93.2*			*62.0-143*	*06/03/2020 09:35*	WG1482900
(T) Yttrium	*109*			*79.0-136*	*06/03/2020 09:35*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.945		0.741	1.14	06/05/2020 15:02	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0956		0.140	0.21	06/05/2020 15:02	WG1487018
(T) Barium-133	*92.1*			*30.0-143*	*06/05/2020 15:02*	WG1487018

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.18		0.544	0.776	06/03/2020 09:35	WG1482900
(T) Barium	*99.0*			*62.0-143*	*06/03/2020 09:35*	WG1482900
(T) Yttrium	*108*			*79.0-136*	*06/03/2020 09:35*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.74		0.864	1.12	06/05/2020 15:02	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.560		0.320	0.342	06/05/2020 15:02	WG1487018
(T) Barium-133	*91.7*			*30.0-143*	*06/05/2020 15:02*	WG1487018

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.113		0.545	0.84	06/03/2020 09:35	WG1482900
(T) Barium	*106*			*62.0-143*	*06/03/2020 09:35*	WG1482900
(T) Yttrium	*106*			*79.0-136*	*06/03/2020 09:35*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.329		0.744	1.08	06/05/2020 15:02	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.216		0.199	0.237	06/05/2020 15:02	WG1487018
(T) Barium-133	*98.9*			*30.0-143*	*06/05/2020 15:02*	WG1487018

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.644		0.614	1.02	06/03/2020 09:35	WG1482900
(T) Barium	*103*			*62.0-143*	*06/03/2020 09:35*	WG1482900
(T) Yttrium	*105*			*79.0-136*	*06/03/2020 09:35*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.000		0.827	1.41	06/05/2020 15:02	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	-0.0790		0.213	0.386	06/05/2020 15:02	WG1487018
(T) Barium-133	*92.2*			*30.0-143*	*06/05/2020 15:02*	WG1487018

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.68		0.590	0.851	06/03/2020 13:40	WG1482900
(T) Barium	*105*			*62.0-143*	*06/03/2020 13:40*	WG1482900
(T) Yttrium	*105*			*79.0-136*	*06/03/2020 13:40*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.08		0.886	1.17	06/05/2020 15:02	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.400		0.296	0.322	06/05/2020 15:02	WG1487018
(T) Barium-133	*77.7*			*30.0-143*	*06/05/2020 15:02*	WG1487018

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	-0.673		0.612	0.995	06/03/2020 13:40	WG1482900
(T) Barium	*112*			*62.0-143*	*06/03/2020 13:40*	WG1482900
(T) Yttrium	*101*			*79.0-136*	*06/03/2020 13:40*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.500		0.876	1.18	06/05/2020 15:02	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.500		0.264	0.181	06/05/2020 15:02	WG1487018
(T) Barium-133	*96.3*			*30.0-143*	*06/05/2020 15:02*	WG1487018

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	-1.18		0.656	1.1	06/03/2020 13:40	WG1482900
(T) Barium	*111*			*62.0-143*	*06/03/2020 13:40*	WG1482900
(T) Yttrium	*101*			*79.0-136*	*06/03/2020 13:40*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.33		1.09	1.32	06/05/2020 15:02	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	1.33		0.429	0.216	06/05/2020 15:02	WG1487018
(T) Barium-133	*103*			*30.0-143*	*06/05/2020 15:02*	WG1487018

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	3.32		0.569	0.873	06/03/2020 13:40	WG1482900
(T) Barium	*106*			*62.0-143*	*06/03/2020 13:40*	WG1482900
(T) Yttrium	*111*			*79.0-136*	*06/03/2020 13:40*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	3.52		0.830	1.24	06/05/2020 15:02	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.201		0.261	0.371	06/05/2020 15:02	WG1487018
(T) Barium-133	*96.1*			*30.0-143*	*06/05/2020 15:02*	WG1487018

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.385		0.582	1.44	06/03/2020 13:40	WG1482900
(T) Barium	*109*			*62.0-143*	*06/03/2020 13:40*	WG1482900
(T) Yttrium	*106*			*79.0-136*	*06/03/2020 13:40*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.343		0.830	1.68	06/05/2020 15:02	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.343		0.248	0.236	06/05/2020 15:02	WG1487018
(T) Barium-133	*95.8*			*30.0-143*	*06/05/2020 15:02*	WG1487018

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.40		0.647	0.967	06/03/2020 13:40	WG1482900
(T) Barium	*107*			*62.0-143*	*06/03/2020 13:40*	WG1482900
(T) Yttrium	*102*			*79.0-136*	*06/03/2020 13:40*	WG1482900

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.52		0.824	1.23	06/05/2020 15:02	WG1487018

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.122		0.177	0.267	06/05/2020 15:02	WG1487018
(T) Barium-133	*96.3*			*30.0-143*	*06/05/2020 15:02*	WG1487018

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	-0.218		0.615	0.966	06/07/2020 12:40	WG1483720
(T) Barium	*124*			*62.0-143*	*06/07/2020 12:40*	WG1483720
(T) Yttrium	*108*			*79.0-136*	*06/07/2020 12:40*	WG1483720

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.210		0.862	1.31	06/09/2020 15:19	WG1488872

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.210		0.247	0.34	06/09/2020 15:19	WG1488872
(T) Barium-133	*92.9*			*30.0-143*	*06/09/2020 15:19*	WG1488872

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.182		0.684	1.09	06/07/2020 12:40	WG1483720
(T) Barium	*122*			*62.0-143*	*06/07/2020 12:40*	WG1483720
(T) Yttrium	*106*			*79.0-136*	*06/07/2020 12:40*	WG1483720

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.123		0.908	1.44	06/09/2020 15:19	WG1488872

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.123		0.224	0.347	06/09/2020 15:19	WG1488872
(T) Barium-133	*95.4*			*30.0-143*	*06/09/2020 15:19*	WG1488872

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.970		0.605	0.983	06/07/2020 12:40	WG1483720
(T) Barium	*121*			*62.0-143*	*06/07/2020 12:40*	WG1483720
(T) Yttrium	*110*			*79.0-136*	*06/07/2020 12:40*	WG1483720

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.18		0.814	1.24	06/09/2020 15:19	WG1488872

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.213		0.209	0.255	06/09/2020 15:19	WG1488872
(T) Barium-133	*90.0*			*30.0-143*	*06/09/2020 15:19*	WG1488872

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.204		0.614	0.901	06/07/2020 12:40	WG1483720
(T) Barium	*120*			*62.0-143*	*06/07/2020 12:40*	WG1483720
(T) Yttrium	*105*			*79.0-136*	*06/07/2020 12:40*	WG1483720

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.592		0.911	1.13	06/09/2020 15:19	WG1488872

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.592		0.297	0.23	06/09/2020 15:19	WG1488872
(T) Barium-133	*93.5*			*30.0-143*	*06/09/2020 15:19*	WG1488872

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.289		0.606	0.913	06/07/2020 12:40	WG1483720
(T) Barium	*95.4*			*62.0-143*	*06/07/2020 12:40*	WG1483720
(T) Yttrium	*104*			*79.0-136*	*06/07/2020 12:40*	WG1483720

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.632		0.846	1.15	06/09/2020 15:19	WG1488872

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.344		0.240	0.232	06/09/2020 15:19	WG1488872
(T) Barium-133	*98.7*			*30.0-143*	*06/09/2020 15:19*	WG1488872

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.128		0.520	0.754	06/07/2020 12:40	WG1483720
(T) Barium	*116*			*62.0-143*	*06/07/2020 12:40*	WG1483720
(T) Yttrium	*104*			*79.0-136*	*06/07/2020 12:40*	WG1483720

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.881		0.857	0.991	06/09/2020 15:19	WG1488872

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.753		0.337	0.237	06/09/2020 15:19	WG1488872
(T) Barium-133	*90.8*			*30.0-143*	*06/09/2020 15:19*	WG1488872

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.173		0.561	0.85	06/07/2020 12:40	WG1483720
(T) Barium	*107*			*62.0-143*	*06/07/2020 12:40*	WG1483720
(T) Yttrium	*111*			*79.0-136*	*06/07/2020 12:40*	WG1483720

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.758		0.895	1.16	06/09/2020 15:19	WG1488872

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.585		0.334	0.307	06/09/2020 15:19	WG1488872
(T) Barium-133	*89.4*			*30.0-143*	*06/09/2020 15:19*	WG1488872

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.0906		0.582	0.906	06/08/2020 09:45	WG1483720
(T) Barium	*105*			*62.0-143*	*06/08/2020 09:45*	WG1483720
(T) Yttrium	*111*			*79.0-136*	*06/08/2020 09:45*	WG1483720

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.304		0.801	1.13	06/09/2020 15:19	WG1488872

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.304		0.219	0.223	06/09/2020 15:19	WG1488872
(T) Barium-133	*87.0*			*30.0-143*	*06/09/2020 15:19*	WG1488872

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.20		0.502	0.692	06/08/2020 09:45	WG1483720
(T) Barium	*117*			*62.0-143*	*06/08/2020 09:45*	WG1483720
(T) Yttrium	*110*			*79.0-136*	*06/08/2020 09:45*	WG1483720

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.24		0.692	1.01	06/09/2020 15:19	WG1488872

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0441		0.190	0.314	06/09/2020 15:19	WG1488872
(T) Barium-133	*103*			*30.0-143*	*06/09/2020 15:19*	WG1488872

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.570		0.616	1.02	06/08/2020 09:45	WG1483720
(T) Barium	*106*			*62.0-143*	*06/08/2020 09:45*	WG1483720
(T) Yttrium	*112*			*79.0-136*	*06/08/2020 09:45*	WG1483720

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.783		0.813	1.26	06/09/2020 15:19	WG1488872

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.213		0.197	0.235	06/09/2020 15:19	WG1488872
(T) Barium-133	*101*			*30.0-143*	*06/09/2020 15:19*	WG1488872

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.73		0.643	1.01	06/08/2020 09:45	WG1483720
(T) Barium	*111*			*62.0-143*	*06/08/2020 09:45*	WG1483720
(T) Yttrium	*111*			*79.0-136*	*06/08/2020 09:45*	WG1483720

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.90		0.914	1.4	06/09/2020 15:19	WG1488872

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.176		0.271	0.388	06/09/2020 15:19	WG1488872
(T) Barium-133	*91.9*			*30.0-143*	*06/09/2020 15:19*	WG1488872

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.13		0.673	0.954	06/16/2020 09:40	WG1484279
(T) Barium	*100*			*62.0-143*	*06/16/2020 09:40*	WG1484279
(T) Yttrium	*92.6*			*79.0-136*	*06/16/2020 09:40*	WG1484279

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.33		0.887	1.24	06/16/2020 09:40	WG1488872

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.201		0.214	0.282	06/09/2020 15:19	WG1488872
(T) Barium-133	*88.8*			*30.0-143*	*06/09/2020 15:19*	WG1488872

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.486		0.604	1.01	06/16/2020 09:40	WG1484279
(T) Barium	*90.9*			*62.0-143*	*06/16/2020 09:40*	WG1484279
(T) Yttrium	*105*			*79.0-136*	*06/16/2020 09:40*	WG1484279

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.509		0.694	1.22	06/16/2020 09:40	WG1488872

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0233		0.0899	0.205	06/09/2020 15:19	WG1488872
(T) Barium-133	*85.1*			*30.0-143*	*06/09/2020 15:19*	WG1488872

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.167		0.630	0.999	06/16/2020 09:40	WG1484279
(T) Barium	*98.7*			*62.0-143*	*06/16/2020 09:40*	WG1484279
(T) Yttrium	*99.4*			*79.0-136*	*06/16/2020 09:40*	WG1484279

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.215		0.738	1.2	06/16/2020 09:40	WG1489235

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0478		0.108	0.198	06/12/2020 15:10	WG1489235
(T) Barium-133	*99.4*			*30.0-143*	*06/12/2020 15:10*	WG1489235

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.294		0.545	0.949	06/16/2020 09:40	WG1484279
(T) Barium	*95.6*			*62.0-143*	*06/16/2020 09:40*	WG1484279
(T) Yttrium	*98.9*			*79.0-136*	*06/16/2020 09:40*	WG1484279

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.281		0.772	1.19	06/16/2020 09:40	WG1489235

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.281		0.227	0.242	06/12/2020 15:10	WG1489235
(T) Barium-133	*95.9*			*30.0-143*	*06/12/2020 15:10*	WG1489235

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.0624		0.594	0.93	06/16/2020 09:40	WG1484279
(T) Barium	*91.1*			*62.0-143*	*06/16/2020 09:40*	WG1484279
(T) Yttrium	*101*			*79.0-136*	*06/16/2020 09:40*	WG1484279

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.149		0.745	1.18	06/16/2020 09:40	WG1489235

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0868		0.151	0.246	06/12/2020 15:15	WG1489235
(T) Barium-133	*93.4*			*30.0-143*	*06/12/2020 15:15*	WG1489235

Method Blank (MB)

(MB) R3535421-1 06/03/20 09:35

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-228	-0.0276		0.501
(T) Barium	*106*		
(T) Yttrium	*105*		

L1222318-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1222318-01 06/03/20 13:40 • (DUP) R3535421-5 06/03/20 09:35

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	1.35	1.54	1	13.4	0.220		20	3
(T) Barium	*107*	*100*						
(T) Yttrium	*101*	*108*						

Laboratory Control Sample (LCS)

(LCS) R3535421-2 06/03/20 09:35

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.81	96.1	80.0-120	
(T) Barium			*98.1*		
(T) Yttrium			*104*		

L1221007-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221007-13 06/03/20 13:40 • (MS) R3535421-3 06/03/20 09:35 • (MSD) R3535421-4 06/03/20 09:35

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	10.0	3.32	11.8	14.2	84.7	108	1	70.0-130			18.3		20
(T) Barium		*106*			*105*	*105*							
(T) Yttrium		*111*			*109*	*109*							

Method Blank (MB)

(MB) R3536266-1 06/07/20 12:40

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-228	0.711		0.542
(T) Barium	*82.1*		
(T) Yttrium	*103*		

L1221007-19 Original Sample (OS) • Duplicate (DUP)

(OS) L1221007-19 06/07/20 12:40 • (DUP) R3536266-5 06/07/20 12:40

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	-0.204	0.282	1	200	0.515		20	3
(T) Barium	*120*	*104*						
(T) Yttrium	*105*	*106*						

Laboratory Control Sample (LCS)

(LCS) R3536266-2 06/07/20 12:40

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.47	109	80.0-120	
(T) Barium			*92.5*		
(T) Yttrium			*97.7*		

L1221007-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221007-20 06/07/20 12:40 • (MS) R3536266-3 06/07/20 12:40 • (MSD) R3536266-4 06/07/20 12:40

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	10.0	0.289	10.8	10.5	105	102	1	70.0-130			3.19		20
(T) Barium		*95.4*			*119*	*120*							
(T) Yttrium		*104*			*101*	*106*							

Method Blank (MB)

(MB) R3540497-1 06/16/20 09:40

Analyte	MB Result	MB Qualifier	MB MDA
	pCi/l		pCi/l
Radium-228	0.442		0.422
(T) Barium	*97.2*		
(T) Yttrium	*105*		

L1222881-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1222881-01 06/16/20 09:40 • (DUP) R3540497-5 06/16/20 09:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	pCi/l		%			%	
Radium-228	0.394	0.886	1	76.9	0.543		20	3
(T) Barium	*82.7*	*86.8*						
(T) Yttrium	*97.9*	*104*						

Laboratory Control Sample (LCS)

(LCS) R3540497-2 06/16/20 09:40

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	4.72	94.4	80.0-120	
(T) Barium			*83.3*		
(T) Yttrium			*97.0*		

Method Blank (MB)

(MB) R3537395-1 06/05/20 15:02

Analyte	MB Result	MB Qualifier	MB MDA
	pCi/l		pCi/l
Radium-226	-0.0212		0.0760
(T) Barium-133	*101*		

L1224651-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1224651-01 06/05/20 15:02 • (DUP) R3537395-5 06/05/20 15:02

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	pCi/l		%			%	
Radium-226	0.289	0.269	1	7.21	0.0681		20	3
(T) Barium-133	*104*	*94.0*						

Laboratory Control Sample (LCS)

(LCS) R3537395-2 06/05/20 15:02

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.02	4.75	94.5	80.0-120	
(T) Barium-133			*99.4*		

L1221007-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221007-13 06/05/20 15:02 • (MS) R3537395-3 06/05/20 15:02 • (MSD) R3537395-4 06/05/20 15:02

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.1	0.201	19.7	23.7	96.9	117	1	75.0-125			18.4		20
(T) Barium-133		*96.1*			*99.0*	*85.9*							

Method Blank (MB)

(MB) R3538773-1 06/09/20 15:19

Analyte	MB Result	MB Qualifier	MB MDA
	pCi/l		pCi/l
Radium-226	-0.0212		0.0760
(T) Barium-133	*103*		

L1221007-17 Original Sample (OS) • Duplicate (DUP)

(OS) L1221007-17 06/09/20 15:19 • (DUP) R3538773-5 06/09/20 15:19

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	pCi/l		%			%	
Radium-226	0.123	0.154	1	22.3	0.114		20	3
(T) Barium-133	*95.4*	*99.3*						

Laboratory Control Sample (LCS)

(LCS) R3538773-2 06/09/20 15:19

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.02	5.55	110	80.0-120	
(T) Barium-133			*103*		

L1221007-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221007-20 06/09/20 15:19 • (MS) R3538773-3 06/09/20 15:19 • (MSD) R3538773-4 06/09/20 15:19

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.1	0.344	18.6	21.0	91.0	103	1	75.0-125			11.9		20
(T) Barium-133		*98.7*			*102*	*104*							

Method Blank (MB)

(MB) R3539344-1 06/12/20 15:10

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-226	-0.00387		0.0511
(T) Barium-133	*85.9*		

L1221829-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1221829-01 06/12/20 15:15 • (DUP) R3539344-5 06/12/20 15:10

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	-0.0278	-0.0200	1	0.000	0.0975		20	3
(T) Barium-133	*111*	*100*						

Laboratory Control Sample (LCS)

(LCS) R3539344-2 06/12/20 15:10

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	5.10	102	80.0-120	
(T) Barium-133			*94.7*		

L1221007-29 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221007-29 06/12/20 15:10 • (MS) R3539344-3 06/12/20 15:10 • (MSD) R3539344-4 06/12/20 15:10

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.1	0.0478	21.0	20.3	104	101	1	75.0-125			3.58		20
(T) Barium-133		*99.4*			*96.9*	*100*							

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

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
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

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

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	LAO00356
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

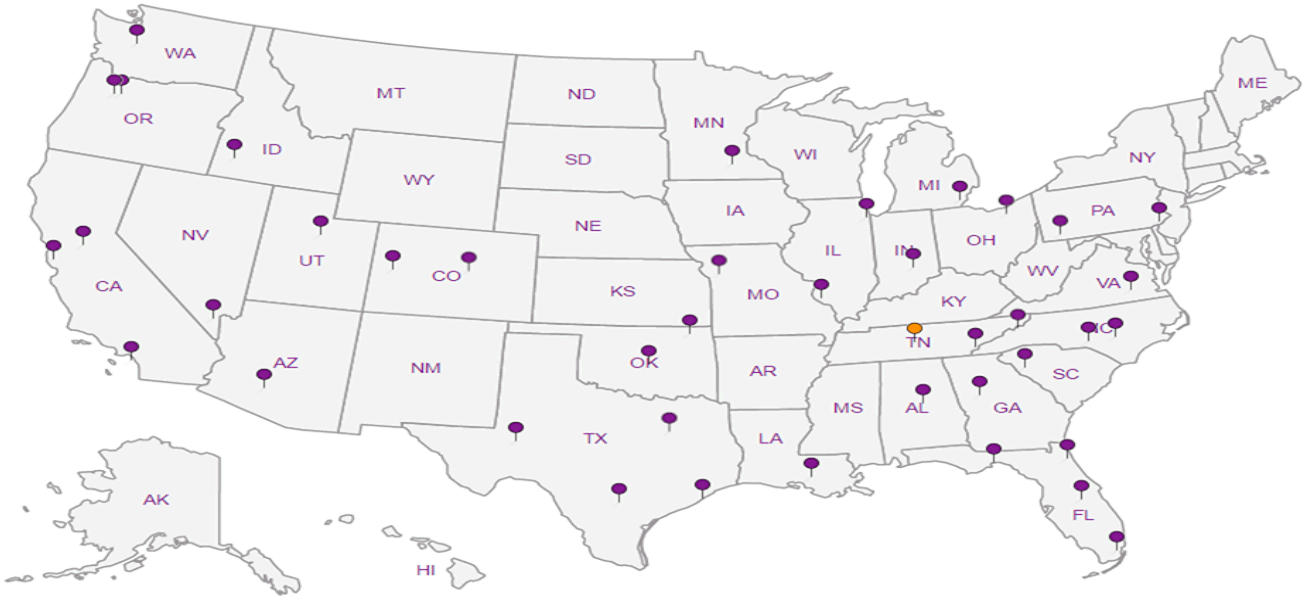
Third Party Federal Accreditations

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.



SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Report to: Jason Franks

Email To: jfranks@scsengineers.com;jay.martin@evergy.c

Project Description: Evergy - LaCygne Generating Station

City/State Collected: LA CYGNE, KS

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project # 27217233.20

Lab Project # AQUAOPKS-LACYGNE

Collected by (print): JASON R. FRANKS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

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

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 4

Pace Analytical®
National Center for Testing & Innovation

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

SDG # 127007
G241

Acctnum: AQUAOPKS
Template: T167974
Prelogin: P774139
PM: 206 - Jeff Carr
PB:

Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	RA226, RA228 1L-HDPE-Add HNO3	Remarks	Sample # (lab only)
MW-6	GRAB	NPW	—	5/19/20	1120	2	X		-01
MW-7		NPW	—		1210	2	X		02
MW-10		NPW	—		1545	2	X		03
MW-11		NPW	—		1500	2	X		04
MW-13		NPW	—		1745	2	X		05
MW-14R		NPW	—		1620	2	X		06
MW-15		NPW	—		1815	2	X		07
MW-601		NPW	—		1210	2	X		08
MW-602		NPW	—		1700	2	X		09
MW-701		NPW	—		1315	2	X		10

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

Remarks: RA 226/228 - Report separately and combined.

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: Y N

Samples returned via: __ UPS __ FedEx __ Courier ___

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	
	5-20-20	0900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.6-1.5 °C	Bottles Received: 68
	5-20-20	1800	FedEx		
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/21/20	Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk: LL

Report to: Jason Franks

Email To: jfranks@scsengineers.com;jay.martin@evergy.c

Project Description: Evergy - LaCygne Generating Station

City/State Collected: La Cygne, KS

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project # 27217233.20

Lab Project # AQUAOPKS-LACYGNE

Collected by (print): JASON R. FRANKS

Site/Facility ID #

P.O. #

Collected by (signature): Jason R. Franks

Immediately Packed on Ice N ___ Y ___

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

Analysis / Container / Preservative

Chain of Custody Page 2 of 4

Pace Analytical® National Center for Testing & Innovation

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

SDG # 122007

Table #

Acctnum: AQUAOPKS

Template: T167974

Prelogin: P774139

PM: 206 - Jeff Carr

PB:

Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	RA226, RA228 1L-HDPE-Add HNO3	Remarks	Sample # (lab only)
MW-702	GRAB	NPW	—	5/19/20	1035	2	X		11
MW-703		NPW	—		1130	2	X		12
MW-704		NPW	—		1400	2	X		13
MW-705		NPW	—		1305	2	X		14
MW-706		NPW	—		1345	2	X		15
MW-707B		NPW	—		1520	2	X		16
MW-708		NPW	—		1605	2	X		17
TW-1		NPW	—		1430	2	X		18
DUPLICATE 1		NPW	—		1405	2	X		19
704 MS/MSD		NPW	—		1410	2	X		13

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

Remarks: RA 226/228 - Report separately and combined.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking #

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:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Jason R. Franks	5-20-20	0900	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	5-20-20	1800	FedEx
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Laura Kemp

Trip Blank Received: Yes / No (No) HCL / MeoH TBR

Temp: 1.6, 1.5 °C Bottles Received: 68

Date: 5/21/20 Time: 8:45

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Chain of Custody

SCS Engineers - KS
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk: 02

Analysis / Container / Preservative: RA226, RA228 1L-HDPE-Add HNO3

Pace Analytical® National Center for Testing & Innovation
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@evergy.c**

Project Description: **Evergy - LaCygne Generating Station**
City/State Collected: LaCygne, KS
Please Circle: PT MT CT ET

Phone: **913-681-0030**
Client Project # **27217233.20**
Lab Project # **AQUAOPKS-LACYGNE**

SDG # 122607
Table #
Acctnum: **AQUAOPKS**
Template: **T167974**
Prelogin: **P774139**
PM: **206 - Jeff Carr**
PB:
Shipped Via: **FedEx Ground**

Collected by (print): JASON R. FRANKS
Collected by (signature): Jason R. Franks
Immediately Packed on Ice N ___ Y ✓

Site/Facility ID #
P.O. #
Quote #

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	RA226, RA228 1L-HDPE-Add HNO3								Remarks	Sample # (lab only)
MSD	GRAB	NPW	—	5/19/20	1650	2	X									20
MW-801		NPW	—		1745	2	X	1650								20
MW-802		NPW	—		1830	2	X	1745								21
MW-803		NPW	—		1910	2	X	1830								22
MW-804		NPW	—		1950	2	X	1910								23
MW-805		NPW	—		1650	2	X	1950								24
DUPLICATE 2		NPW	—		1655	2	X	1650								25
801 MS/MSD		NPW	—		1850	2	X	1655								20
~~MSD~~		NPW	—		~~1575~~	2	X									
MW-901		NPW	—		~~1900~~ 1850	2	X	1850								26

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

Remarks: RA 226/228 - Report separately and combined.

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

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: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeoH TBR
Jason R. Franks	5-20-20	0900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 0.1 °C Bottles Received:
	5-20-20	1800	FedEx	1.6-.1=1.5 68
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
				5/21/20 8:45

If preservation required by Login: Date/Time

Hold: Condition: NCF / (OK)

Chain of Custody Page 4 of 4

SCS Engineers - KS
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk: LL

Analysis / Container / Preservative: RA226, RA228 1L-HDPE-Add HNO3

Pace Analytical® National Center for Testing & Innovation
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@evergy.c

Project Description: Evergy - LaCygne Generating Station
City/State Collected: LaCygne, KS
Please Circle: PT MT CT ET

Phone: 913-681-0030
Client Project # 27217233.20
Lab Project # AQUAOPKS-LACYGNE

SDG # 122007
Table #
Acctnum: AQUAOPKS
Template: T167974
Prelogin: P774139
PM: 206 - Jeff Carr
PB:
Shipped Via: FedEX Ground

Collected by (print): JASON R. FRANKS
Collected by (signature): Jason R. Franks
Immediately Packed on Ice N ____ Y ✓

Site/Facility ID #
P.O. #
Quote #

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	RA226, RA228 1L-HDPE-Add HNO3	Remarks	Sample # (lab only)
MW-902	GRAB	NPW	—	5/19/20	1525	2	X		27
MW-903		NPW	—		1900	2	X		28
MW-904		NPW	—		1125	2	X		29
MW-905		NPW	—		1405	2	X		30
DUPLICATE 3		NPW	—		1125	2	X		31
904 MS/MSD		NPW	—		1125	2	X		29
		NPW				2	X		

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

Remarks: RA 226/228 - Report separately and combined.

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____
Tracking #

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: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Jason R. Franks	5-20-20	0900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.7 °C Bottles Received:	If preservation required by Login: Date/Time
	5-20-20	1800	FedEx	1.6-1.5 68	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:
			Chuck Kemp	5/21/20	8:45

Hold: Condition: NCF / OK

Kelsey Stephenson

Login #: L1221007	Client:AQUAOPKS	Date:05/21	Evaluated by:Kelsey S

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time		Login Clarification Needed		**If Broken Container:**
	Temperature not in range		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	pH not in range.		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Courier
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments: Received MW-707B with a pH of 6 and 7.

pH adj 1550 05/21. Lot#19L04452

Client informed by:		Call		Email		Voice Mail		Date:	Time:
TSR Initials:	Client Contact:								

Login Instructions:

Will hold 16 hrs & proceed with analysis.
DE 5/21/20 1644

ATTACHMENT 1-4

July 2020 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

July 21, 2020

SCS Engineers - KS

Sample Delivery Group:	L1239490
Samples Received:	07/15/2020
Project Number:	27217233.20
Description:	Evergy - LaCygne Generating Station

Report To:

Jason Franks
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

MW-13 L1239490-01 GW

Collected by: G. Penaflor | Collected date/time: 07/13/20 12:25 | Received date/time: 07/15/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1509631	1	07/16/20 06:38	07/16/20 06:38	ELN	Mt. Juliet, TN

MW-14R L1239490-02 GW

Collected by: G. Penaflor | Collected date/time: 07/13/20 11:45 | Received date/time: 07/15/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1509631	1	07/16/20 06:55	07/16/20 06:55	ELN	Mt. Juliet, TN

DUPLICATE 1 L1239490-03 GW

Collected by: G. Penaflor | Collected date/time: 07/13/20 11:50 | Received date/time: 07/15/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1509631	1	07/16/20 08:19	07/16/20 08:19	ELN	Mt. Juliet, TN

MW-701 L1239490-04 GW

Collected by: G. Penaflor | Collected date/time: 07/13/20 14:07 | Received date/time: 07/15/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1509664	1	07/16/20 10:18	07/16/20 16:17	EL	Mt. Juliet, TN

MW-704 L1239490-05 GW

Collected by: G. Penaflor | Collected date/time: 07/13/20 13:25 | Received date/time: 07/15/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1509631	5	07/16/20 08:36	07/16/20 08:36	ELN	Mt. Juliet, TN

MW-706 L1239490-06 GW

Collected by: G. Penaflor | Collected date/time: 07/13/20 11:50 | Received date/time: 07/15/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1509631	1	07/16/20 11:25	07/16/20 11:25	ELN	Mt. Juliet, TN

MW-707B L1239490-07 GW

Collected by: G. Penaflor | Collected date/time: 07/13/20 11:05 | Received date/time: 07/15/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1509664	1	07/16/20 10:18	07/16/20 15:30	EL	Mt. Juliet, TN

DUPLICATE 2 L1239490-08 GW

Collected by: G. Penaflor | Collected date/time: 07/13/20 11:10 | Received date/time: 07/15/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1509664	1	07/16/20 10:18	07/16/20 16:20	EL	Mt. Juliet, TN

TW-1 L1239490-09 GW

Collected by: G. Penaflor
Collected date/time: 07/13/20 10:50
Received date/time: 07/15/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1509631	1	07/16/20 09:10	07/16/20 09:10	ELN	Mt. Juliet, TN

DUPLICATE 3 L1239490-10 GW

Collected by: G. Penaflor
Collected date/time: 07/13/20 10:55
Received date/time: 07/15/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1509631	5	07/16/20 10:01	07/16/20 10:01	ELN	Mt. Juliet, TN

MW-901 L1239490-11 GW

Collected by: G. Penaflor
Collected date/time: 07/13/20 09:45
Received date/time: 07/15/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1509631	1	07/16/20 10:18	07/16/20 10:18	ELN	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

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	18800		1000	1	07/16/2020 06:38	WG1509631

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6380		1000	1	07/16/2020 06:55	WG1509631
Fluoride	336		150	1	07/16/2020 06:55	WG1509631

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6370		1000	1	07/16/2020 08:19	WG1509631
Fluoride	339		150	1	07/16/2020 08:19	WG1509631

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	41300		1000	1	07/16/2020 16:17	WG1509664

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	90100		5000	5	07/16/2020 08:36	WG1509631

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	21300		5000	1	07/16/2020 11:25	WG1509631

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	421000	O1 V	1000	1	07/16/2020 15:30	WG1509664

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	422000		1000	1	07/16/2020 16:20	WG1509664

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	69400		5000	1	07/16/2020 09:10	WG1509631

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	69800		25000	5	07/16/2020 10:01	WG1509631

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	562		150	1	07/16/2020 10:18	WG1509631

Method Blank (MB)

(MB) R3550034-1 07/16/20 00:33

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

L1239053-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1239053-01 07/16/20 02:07 • (DUP) R3550034-3 07/16/20 02:24

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	18800	18600	1	1.21		15
Fluoride	ND	ND	1	0.000		15
Sulfate	8370	8470	1	1.20		15

L1239490-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1239490-11 07/16/20 10:18 • (DUP) R3550034-8 07/16/20 11:08

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	24100	24000	1	0.491		15
Fluoride	562	565	1	0.444		15
Sulfate	21500	21400	1	0.174		15

Laboratory Control Sample (LCS)

(LCS) R3550034-2 07/16/20 00:50

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40000	100	80.0-120	
Fluoride	8000	8020	100	80.0-120	
Sulfate	40000	39800	99.5	80.0-120	

L1239490-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1239490-02 07/16/20 06:55 • (MS) R3550034-4 07/16/20 07:45 • (MSD) R3550034-5 07/16/20 08:02

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	6380	52700	52900	92.6	93.1	1	80.0-120			0.455	15
Fluoride	5000	336	4920	4940	91.7	92.1	1	80.0-120			0.462	15
Sulfate	50000	56800	98200	98300	82.7	83.0	1	80.0-120			0.130	15

L1239490-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1239490-09 07/16/20 09:10 • (MS) R3550034-6 07/16/20 09:27 • (MSD) R3550034-7 07/16/20 09:44

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	41200	86000	86300	89.6	90.2	1	80.0-120			0.321	15
Fluoride	5000	444	5030	5040	91.8	92.0	1	80.0-120			0.198	15
Sulfate	50000	69400	113000	113000	86.5	86.4	1	80.0-120	E	E	0.0432	15

Method Blank (MB)

(MB) R3550315-1 07/16/20 15:24

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		389	1000

Laboratory Control Sample (LCS)

(LCS) R3550315-2 07/16/20 15:27

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	9480	94.8	80.0-120	

L1239490-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1239490-07 07/16/20 15:30 • (MS) R3550315-4 07/16/20 15:36 • (MSD) R3550315-5 07/16/20 15:39

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 %
Calcium	10000	421000	422000	417000	17.3	0.000	1	75.0-125	V	V	1.24	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).
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	LAO00356
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

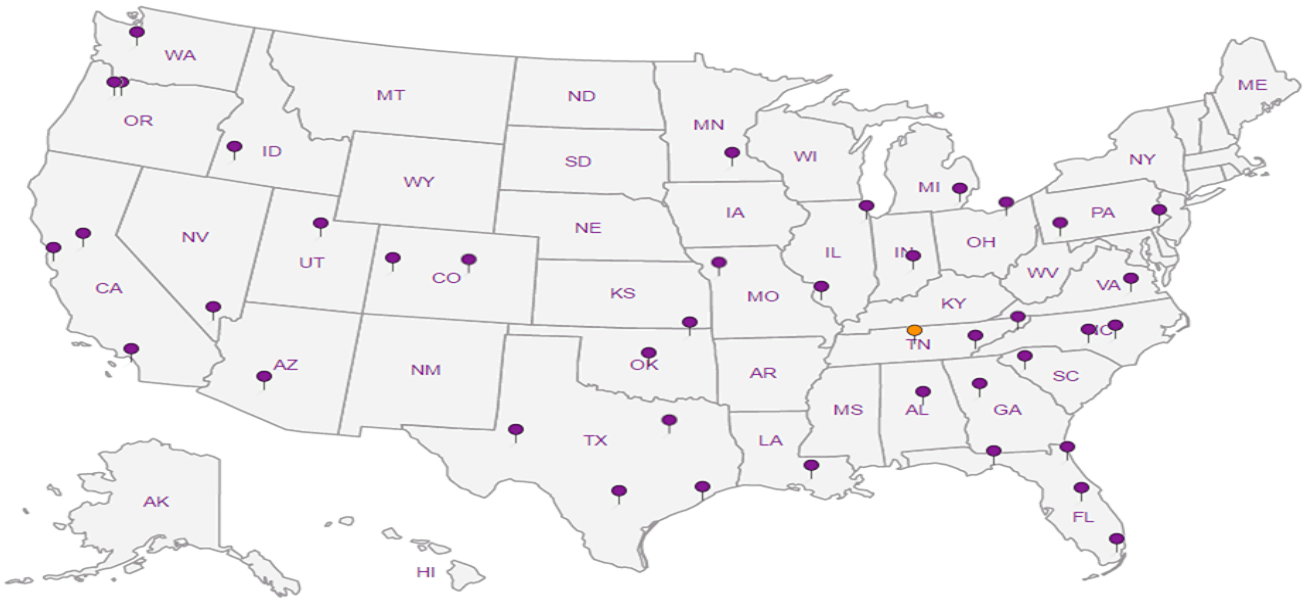
Third Party Federal Accreditations

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.



SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk

Report to: Jason Franks

Email To: jfranks@scsengineers.com;jay.martin@evergy.c

Project Description: Evergy - LaCygne Generating Station

City/State Collected:

Please Circle: PT MT CT ET (CT circled)

Phone: 913-681-0030

Client Project #: 27217233.20

Lab Project #: AQUAOPKS-LACYGNE

Collected by (print): G. Penaflor

Site/Facility ID #:

P.O. #:

Collected by (signature): [signature]

Immediately Packed on Ice N___ Y X

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

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

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

SDG #: L1239490

F089

Table #:

Acctnum: AQUAOPKS
Template: T136276
Prelogin: P784787
PM: 206 - Jeff Carr
PB:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Calcium - 6010 250mlHDPE-HNO3 (<2)	Chloride 125mlHDPE-NoPres	Chloride, Fluoride 125mlHDPE-NoPres	Fluoride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres					Remarks	Sample # (lab only)
MW-13	GRAB	GW		7/13/20	1225	1		X									-01
MW-14R	↓	GW		↓	1145	1			X								-02
MW-14R MS/MSD	↓	GW		↓	1155	1			X								-02
DUPLICATE 1	↓	GW		↓	1150	1			X								-03
MW-701	↓	GW		↓	1407	1	X										-04
MW-704	↓	GW		↓	1325	1		X									-05
MW-706	↓	GW		↓	1150	1					X						-06
MW-707B	↓	GW		↓	1105	1	X	X									-07
MW-707B MS/MSD	↓	GW		↓	1115	1	X	X									-07
DUPLICATE 2	↓	GW		↓	1110	1	X	X									-08

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

Remarks:

pH ______ Temp ______

Flow ______ Other ______

Samples returned via: __ UPS __ FedEx __ Courier ________

Tracking # 1845 4330 1990

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: ✓Y _N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
[signature]	7-14-20	1330	[signature]
[signature]	7-14-20	1800	FedEx
			Received for lab by: (Signature) L. White

Trip Blank Received: Yes / No (No circled)
HCL / MeoH
TBR

Temp: MA3 °C 2.0+2=2.0 Bottles Received: 14

Date: 7/15/20 Time: 08:30

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK (OK circled)

SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

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@evergy.c

Project Description: Evergy - LaCygne Generating Station

City/State Collected:

Please Circle: PT MT (CT) ET

Phone: 913-681-0030

Client Project # 27217233.20

Lab Project # AQUAOPKS-LACYGNE

Site/Facility ID #

P.O. #

Quote #

Collected by (print): G. Penaflor

Collected by (signature): [signature]

Immediately Packed on Ice N___ Y X

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

Date Results Needed: Std

SDG # L1239490

Table #

Acctnum: AQUAOPKS
Template: T136276
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PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Calcium - 6010 250mlHDPE-HNO3	Chloride 125mlHDPE-NoPres	Chloride, Fluoride 125mlHDPE-NoPres	Fluoride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres						Remarks	Sample # (lab only)
TW-1	GRAB	GW		7/13/20	1050	1					X							-09
TW-1 MS/MSD	↓	GW		↓	1100	1					X							-09
DUPLICATE 3	↓	GW		↓	1055	1					X							-10
MW-901	↓	GW		↓	0945	1				X								-11

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

Remarks:

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier ________

Tracking #

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: ✓Y __N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeoH TBR
[signature]	7-14-20	1330	[signature]	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: TV93 °C 2.2-2=2.0 Bottles Received: 14
[signature]	7-14-20	1800	FedEx	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7/15/20 Time: 08:30
			J. Webster [signature]	

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

ATTACHMENT 1-5

August 2020 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

September 02, 2020

SCS Engineers - KS

Sample Delivery Group:	L1255853
Samples Received:	08/28/2020
Project Number:	27217233.20
Description:	Evergy - LaCygne Generating Station

Report To:

Jason Franks
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

MW-14R L1255853-01 GW

Collected by: Whit Martin | Collected date/time: 08/27/20 13:15 | Received date/time: 08/28/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1535066	1	08/30/20 12:45	08/30/20 12:45	ELN	Mt. Juliet, TN

DUPLICATE 1 L1255853-02 GW

Collected by: Whit Martin | Collected date/time: 08/27/20 13:15 | Received date/time: 08/28/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1535066	1	08/30/20 13:51	08/30/20 13:51	ELN	Mt. Juliet, TN

MW-704 L1255853-03 GW

Collected by: Whit Martin | Collected date/time: 08/27/20 12:35 | Received date/time: 08/28/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1535066	1	08/30/20 14:04	08/30/20 14:04	ELN	Mt. Juliet, TN

MW-706 L1255853-04 GW

Collected by: Whit Martin | Collected date/time: 08/27/20 11:00 | Received date/time: 08/28/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1535066	1	08/30/20 14:17	08/30/20 14:17	ELN	Mt. Juliet, TN

TW-1 L1255853-05 GW

Collected by: Whit Martin | Collected date/time: 08/27/20 11:40 | Received date/time: 08/28/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1535066	1	08/30/20 14:30	08/30/20 14:30	ELN	Mt. Juliet, TN

DUPLICATE 2 L1255853-06 GW

Collected by: Whit Martin | Collected date/time: 08/27/20 11:40 | Received date/time: 08/28/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1535066	1	08/30/20 15:09	08/30/20 15:09	ELN	Mt. Juliet, TN

MW-901 L1255853-07 GW

Collected by: Whit Martin | Collected date/time: 08/27/20 10:10 | Received date/time: 08/28/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1535066	1	08/30/20 15:22	08/30/20 15:22	ELN	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

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6250		1000	1	08/30/2020 12:45	WG1535066
Fluoride	312		150	1	08/30/2020 12:45	WG1535066

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6330		1000	1	08/30/2020 13:51	WG1535066
Fluoride	317		150	1	08/30/2020 13:51	WG1535066

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	92200		1000	1	08/30/2020 14:04	WG1535066

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	20700		5000	1	08/30/2020 14:17	WG1535066

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	72400		5000	1	08/30/2020 14:30	WG1535066

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	72200		5000	1	08/30/2020 15:09	WG1535066

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	500		150	1	08/30/2020 15:22	WG1535066

Method Blank (MB)

(MB) R3565608-1 08/30/20 09:31

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

L1256294-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1256294-12 08/30/20 10:47 • (DUP) R3565608-3 08/30/20 11:00

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	138000	138000	10	0.369		15
Fluoride	ND	ND	10	0.545		15
Sulfate	89200	91400	10	2.49		15

L1255853-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1255853-07 08/30/20 15:22 • (DUP) R3565608-8 08/30/20 16:01

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	24100	24200	1	0.350		15
Fluoride	500	500	1	0.0600		15
Sulfate	21500	21600	1	0.264		15

Laboratory Control Sample (LCS)

(LCS) R3565608-2 08/30/20 09:44

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39600	99.1	80.0-120	
Fluoride	8000	8040	101	80.0-120	
Sulfate	40000	39900	99.7	80.0-120	

L1255853-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1255853-01 08/30/20 12:45 • (MS) R3565608-4 08/30/20 13:25 • (MSD) R3565608-5 08/30/20 13:38

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	6250	57400	57400	102	102	1	80.0-120			0.0209	15
Fluoride	5000	312	5340	5350	101	101	1	80.0-120			0.275	15
Sulfate	50000	56900	106000	106000	98.4	98.5	1	80.0-120	E	E	0.00961	15

L1255853-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1255853-05 08/30/20 14:30 • (MS) R3565608-6 08/30/20 14:43 • (MSD) R3565608-7 08/30/20 14:56

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	41800	91300	91400	98.9	99.2	1	80.0-120			0.138	15
Fluoride	5000	391	5480	5490	102	102	1	80.0-120			0.0747	15
Sulfate	50000	72400	121000	121000	97.4	97.7	1	80.0-120	E	E	0.124	15

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).

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	LAO00356
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

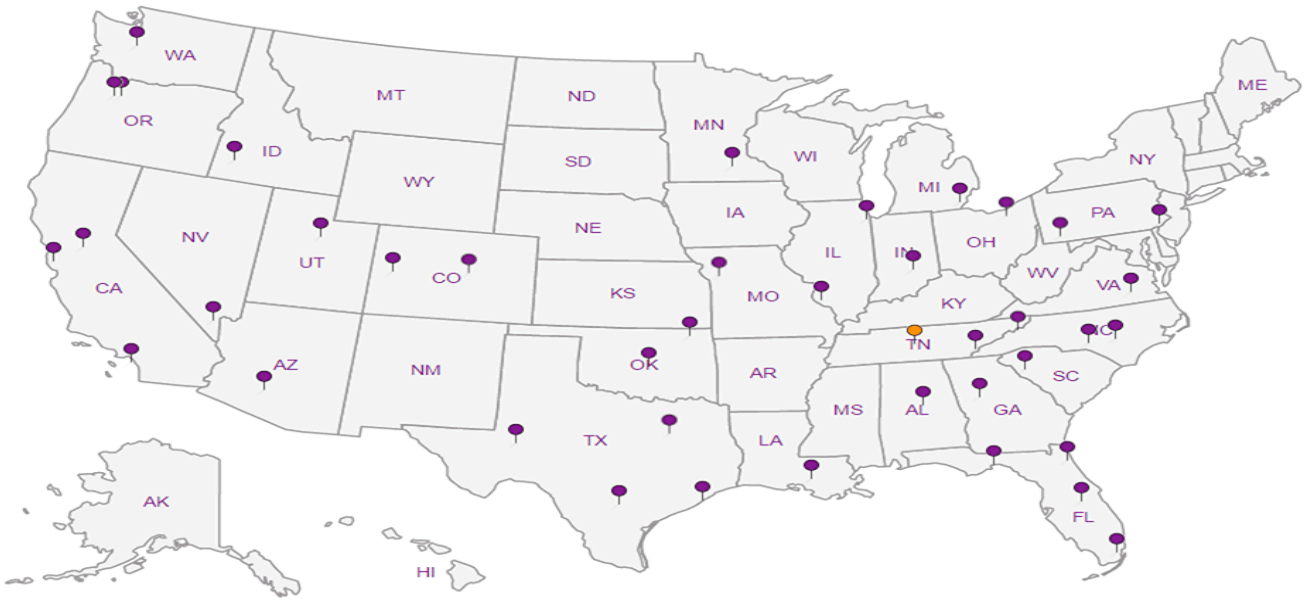
Third Party Federal Accreditations

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.



SCS Engineers - KS
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk

Report to: Jason Franks

Email To: jfranks@scsengineers.com;jay.martin@evergy.c

Project Description: Evergy - LaCygne Generating Station

City/State Collected: LaCygne, KS

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project # 27217233.20

Lab Project # AQUAOPKS-LACYGNE

Collected by (print): Whit Martin

Site/Facility ID #

P.O. #

Collected by (signature): Whit Martin

Immediately Packed on Ice N ___ Y X

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Chloride 125mlHDPE-NoPres	Chloride, Fluoride 125mlHDPE-NoPres	Fluoride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-14R	Grab	GW		8/27/20	1315	1		X				-01
MW-14R MS/MSD	Grab	GW		8/27/20	1315	1		X				-01
DUPLICATE 1	Grab	GW		8/27/20	1315	1		X				-02
MW-704	Grab	GW		8/27/20	1235	1	X					-03
MW-706	Grab	GW		8/27/20	1100	1				X		-04
TW-1	Grab	GW		8/27/20	1140	1				X		-05
TW-1 MS/MSD	Grab	GW		8/27/20	1140	1				X		-05
DUPLICATE 2	Grab	GW		8/27/20	1140	1				X		-06
MW-901	Grab	GW		8/27/20	1010	1			X			-07

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1255853
A138
Acctnum: AQUA
Template: T136276
Prelogin: P789921
PM: 206 - Jeff Carr
PB:
Shipped Via:

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 526 5166 3861 0001

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: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Whit Martin	8/27/20	1545		A6	
	8/27/20	1810	FedEx	Temp: -.5 °C 1.3 .8 Bottles Received: 9	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:	Hold:	Condition: NCF / OK
			Deborah Holeman	8-28-20	8:00		

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

September 03, 2020

SCS Engineers - KS

Sample Delivery Group:	L1255852
Samples Received:	08/28/2020
Project Number:	27217233.20
Description:	Evergy - LaCygne Generating Station

Report To:

Jason Franks
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

MW-14R L1255852-01 GW

Collected by: Whit Martin | Collected date/time: 08/27/20 13:15 | Received date/time: 08/28/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1536154	1	09/01/20 15:48	09/01/20 15:48	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1534671	1	08/30/20 16:24	08/30/20 16:24	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1535591	1	09/02/20 15:49	09/02/20 23:48	CCE	Mt. Juliet, TN

MW-704 L1255852-02 GW

Collected by: Whit Martin | Collected date/time: 08/27/20 12:35 | Received date/time: 08/28/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1536154	1	09/01/20 15:55	09/01/20 15:55	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1534671	5	08/30/20 20:01	08/30/20 20:01	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1535592	1	09/02/20 17:23	09/02/20 20:29	EL	Mt. Juliet, TN

MW-706 L1255852-03 GW

Collected by: Whit Martin | Collected date/time: 08/27/20 11:00 | Received date/time: 08/28/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1536154	1	09/01/20 16:02	09/01/20 16:02	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1534671	5	08/30/20 20:12	08/30/20 20:12	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1535592	1	09/02/20 17:23	09/02/20 20:39	EL	Mt. Juliet, TN

TW-1 L1255852-04 GW

Collected by: Whit Martin | Collected date/time: 08/27/20 11:40 | Received date/time: 08/28/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1536154	1	09/01/20 16:10	09/01/20 16:10	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1534671	1	08/30/20 16:57	08/30/20 16:57	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1535592	1	09/02/20 17:23	09/02/20 20:42	EL	Mt. Juliet, TN

MW-901 L1255852-05 GW

Collected by: Whit Martin | Collected date/time: 08/27/20 10:10 | Received date/time: 08/28/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1536154	1	09/01/20 16:17	09/01/20 16:17	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1534671	1	08/30/20 17:40	08/30/20 17:40	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1535592	1	09/02/20 17:23	09/02/20 20:45	EL	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

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	476000		20000	1	09/01/2020 15:48	WG1536154
Alkalinity,Carbonate	ND		20000	1	09/01/2020 15:48	WG1536154

Sample Narrative:

L1255852-01 WG1536154: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	54700		5000	1	08/30/2020 16:24	WG1534671

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	54100		1000	1	09/02/2020 23:48	WG1535591
Magnesium	38300		1000	1	09/02/2020 23:48	WG1535591
Potassium	4250		2000	1	09/02/2020 23:48	WG1535591
Sodium	112000		3000	1	09/02/2020 23:48	WG1535591

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	803000		20000	1	09/01/2020 15:55	WG1536154
Alkalinity,Carbonate	ND		20000	1	09/01/2020 15:55	WG1536154

Sample Narrative:

L1255852-02 WG1536154: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	150000		25000	5	08/30/2020 20:01	WG1534671

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	21800		1000	1	09/02/2020 20:29	WG1535592
Magnesium	16100		1000	1	09/02/2020 20:29	WG1535592
Potassium	5510		2000	1	09/02/2020 20:29	WG1535592
Sodium	444000	V	3000	1	09/02/2020 20:29	WG1535592

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	751000		20000	1	09/01/2020 16:02	WG1536154
Alkalinity,Carbonate	ND		20000	1	09/01/2020 16:02	WG1536154

Sample Narrative:

L1255852-03 WG1536154: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	238000		5000	5	08/30/2020 20:12	WG1534671

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	23000		1000	1	09/02/2020 20:39	WG1535592
Magnesium	19400		1000	1	09/02/2020 20:39	WG1535592
Potassium	6250		2000	1	09/02/2020 20:39	WG1535592
Sodium	437000		3000	1	09/02/2020 20:39	WG1535592

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	835000		20000	1	09/01/2020 16:10	WG1536154
Alkalinity,Carbonate	ND		20000	1	09/01/2020 16:10	WG1536154

Sample Narrative:

L1255852-04 WG1536154: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	41000		1000	1	08/30/2020 16:57	WG1534671

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	23600		1000	1	09/02/2020 20:42	WG1535592
Magnesium	58300		1000	1	09/02/2020 20:42	WG1535592
Potassium	7610		2000	1	09/02/2020 20:42	WG1535592
Sodium	304000		3000	1	09/02/2020 20:42	WG1535592

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity,Bicarbonate	432000		20000	1	09/01/2020 16:17	WG1536154
Alkalinity,Carbonate	ND		20000	1	09/01/2020 16:17	WG1536154

Sample Narrative:

L1255852-05 WG1536154: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	24000		1000	1	08/30/2020 17:40	WG1534671
Sulfate	20400		5000	1	08/30/2020 17:40	WG1534671

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	56700		1000	1	09/02/2020 20:45	WG1535592
Magnesium	21800		1000	1	09/02/2020 20:45	WG1535592
Potassium	3820		2000	1	09/02/2020 20:45	WG1535592
Sodium	122000		3000	1	09/02/2020 20:45	WG1535592

Method Blank (MB)

(MB) R3566231-1 09/01/20 15:19

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity,Bicarbonate	U		8450	20000
Alkalinity,Carbonate	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1256606-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1256606-01 09/01/20 16:24 • (DUP) R3566231-2 09/01/20 16:31

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	293000	293000	1	0.251		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

L1256606-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1256606-04 09/01/20 16:58 • (DUP) R3566231-4 09/01/20 17:05

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	125000	125000	1	0.107		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Method Blank (MB)

(MB) R3565469-1 08/30/20 10:55

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Sulfate	U		594	5000

L1255051-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1255051-01 08/30/20 13:30 • (DUP) R3565469-3 08/30/20 13:41

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	ND	ND	1	0.000		15
Sulfate	20300	20700	1	1.90		15

L1255852-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1255852-04 08/30/20 16:57 • (DUP) R3565469-6 08/30/20 17:29

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	41000	41600	1	1.29		15
Sulfate	69000	69100	1	0.112		15

Laboratory Control Sample (LCS)

(LCS) R3565469-2 08/30/20 11:06

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39300	98.2	80.0-120	
Sulfate	40000	39400	98.4	80.0-120	

L1255091-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1255091-03 08/30/20 13:52 • (MS) R3565469-4 08/30/20 14:03 • (MSD) R3565469-5 08/30/20 14:14

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	197000	239000	239000	83.7	83.6	1	80.0-120	E	E	0.0302	15
Sulfate	50000	197000	243000	242000	91.2	88.6	1	80.0-120	E	E	0.536	15

L1255852-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1255852-05 08/30/20 17:40 • (MS) R3565469-7 08/30/20 17:51

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	24000	75100	102	1	80.0-120	
Sulfate	50000	20400	71700	103	1	80.0-120	

Method Blank (MB)

(MB) R3566804-1 09/02/20 22:33

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		389	1000
Magnesium	U		111	1000
Potassium	U		510	2000
Sodium	U		1400	3000

Laboratory Control Sample (LCS)

(LCS) R3566804-2 09/02/20 22:36

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	9830	98.3	80.0-120	
Magnesium	10000	9380	93.8	80.0-120	
Potassium	10000	9310	93.1	80.0-120	
Sodium	10000	9730	97.3	80.0-120	

L1255618-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1255618-01 09/02/20 22:39 • (MS) R3566804-4 09/02/20 22:44 • (MSD) R3566804-5 09/02/20 22:46

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 %
Calcium	10000	35400	44700	44700	93.2	93.8	1	75.0-125			0.125	20
Magnesium	10000	9700	18700	18800	90.5	91.0	1	75.0-125			0.274	20
Potassium	10000	23600	32500	32400	88.2	87.2	1	75.0-125			0.315	20
Sodium	10000	23100	32300	32200	92.3	91.5	1	75.0-125			0.274	20

Method Blank (MB)

(MB) R3566772-1 09/02/20 20:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		389	1000
Magnesium	U		111	1000
Potassium	U		510	2000
Sodium	U		1400	3000

Laboratory Control Sample (LCS)

(LCS) R3566772-2 09/02/20 20:26

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	10000	100	80.0-120	
Magnesium	10000	10100	101	80.0-120	
Potassium	10000	9610	96.1	80.0-120	
Sodium	10000	9910	99.1	80.0-120	

L1255852-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1255852-02 09/02/20 20:29 • (MS) R3566772-4 09/02/20 20:34 • (MSD) R3566772-5 09/02/20 20:36

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 %
Calcium	10000	21800	31500	31100	97.6	93.7	1	75.0-125			1.24	20
Magnesium	10000	16100	25500	25200	94.9	91.3	1	75.0-125			1.45	20
Potassium	10000	5510	15300	15200	97.8	96.5	1	75.0-125			0.883	20
Sodium	10000	444000	444000	441000	0.000	0.000	1	75.0-125	V	V	0.571	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.

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	LAO00356
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

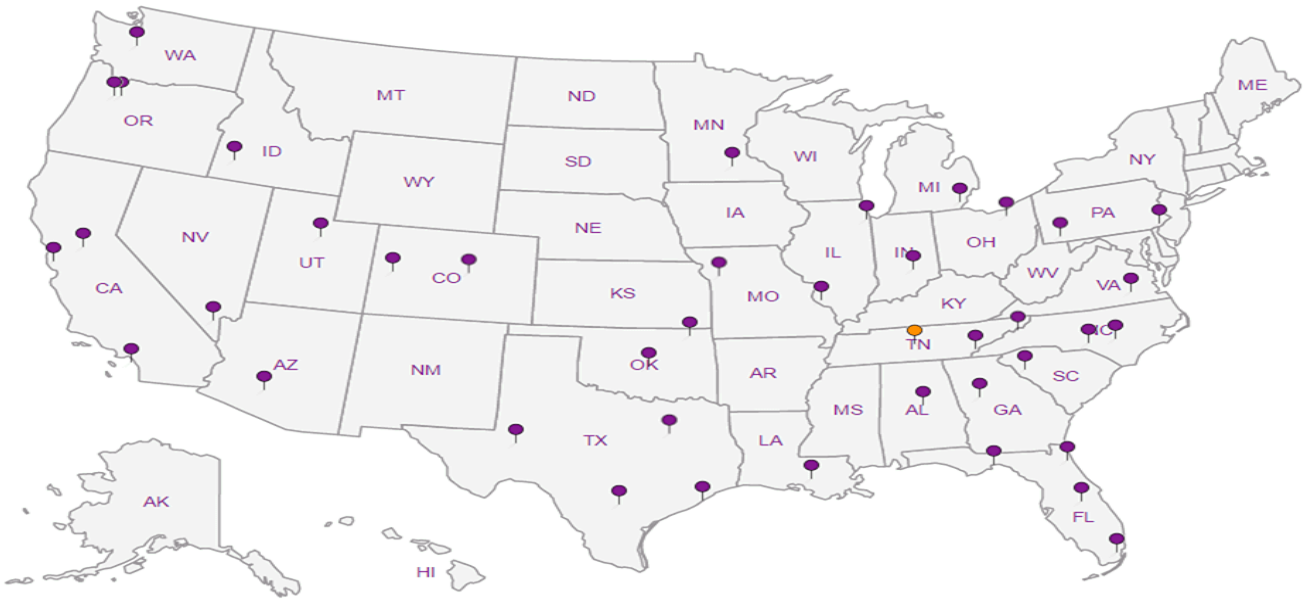
Third Party Federal Accreditations

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.



SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Report to:
Jason Franks

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk

Email To:
jfranks@scsengineers.com;jay.martin@evergy.c

Project Description:
Evergy - LaCygne Generating Station

City/State Collected: LaCygne, KS

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project # 27217233.19

Lab Project # AQUAOPKS-LACYGNE

Collected by (print): Whit Martin

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALKBI, ALKCA 125mlHDPE-NoPres	Ca, K, Mg, Na - 6010 250mlHDPE-HNO3	Chloride - 9056 125mlHDPE-NoPres	Chloride, SO4 - 9056 125mlHDPE-NoPres	SO4 - 9056 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-14R	Grab	GW		8/27/20	1315	3	X	X			X		-01
MW-704	Grab	GW		8/27/20	1235	3	X	X			X		-02
MW-706	Grab	GW		8/27/20	1100	3	X	X	X				-03
TW-1	Grab	GW		8/27/20	1140	3	X	X	X				-04
MW-901	Grab	GW		8/27/20	1010	3	X	X		X			-05

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical
National Center for Testing & Innovation

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

SDG # L1255852

A137

Template: T152974
Prelogin: P789924
PM: 206 - Jeff Carr
PB:
Shipped Via:

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

Remarks:

pH ____ Temp ____
Flow ____ Other ____

Samples returned via:
__ UPS __ FedEx __ Courier

Tracking # 5865166736 1 cool

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: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	8/27/20	1545	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	8/27/20	1800	FedEx
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Deedra Kirkendall

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 4.6°C Bottles Received: 15
1.3.5.2.8

Date: 8-28-20 Time: 8:00

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ATTACHMENT 1-6

November 2020 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

December 03, 2020

SCS Engineers - KS

Sample Delivery Group:	L1286006
Samples Received:	11/14/2020
Project Number:	27217233.20
Description:	KCPL - LaCygne Generating Station

Report To: Jason Franks
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

MW-6 L1286006-01 GW

Collected by: G. Penaflor | Collected date/time: 11/12/20 14:55 | Received date/time: 11/14/20 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1579271	1	11/19/20 16:05	11/19/20 19:02	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	1	11/25/20 09:46	11/25/20 09:46	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	5	11/25/20 10:11	11/25/20 10:11	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1579830	1	11/21/20 21:05	11/23/20 21:33	EL	Mt. Juliet, TN

MW-7 L1286006-02 GW

Collected by: G. Penaflor | Collected date/time: 11/12/20 14:20 | Received date/time: 11/14/20 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1579271	1	11/19/20 16:05	11/19/20 19:02	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	1	11/25/20 10:37	11/25/20 10:37	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1579830	1	11/21/20 21:05	11/23/20 22:40	EL	Mt. Juliet, TN

MW-11 L1286006-03 GW

Collected by: G. Penaflor | Collected date/time: 11/12/20 12:50 | Received date/time: 11/14/20 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1579271	1	11/19/20 16:05	11/19/20 19:02	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	1	11/25/20 11:02	11/25/20 11:02	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	5	11/25/20 11:15	11/25/20 11:15	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1579830	1	11/21/20 21:05	11/23/20 22:43	EL	Mt. Juliet, TN

MW-701 L1286006-04 GW

Collected by: G. Penaflor | Collected date/time: 11/12/20 13:30 | Received date/time: 11/14/20 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1579271	1	11/19/20 16:05	11/19/20 19:02	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	1	11/25/20 21:44	11/25/20 21:44	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1579830	1	11/21/20 21:05	11/23/20 22:46	EL	Mt. Juliet, TN

MW-702 L1286006-05 GW

Collected by: G. Penaflor | Collected date/time: 11/12/20 10:10 | Received date/time: 11/14/20 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1579271	1	11/19/20 16:05	11/19/20 19:02	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	1	11/25/20 21:57	11/25/20 21:57	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1579830	1	11/21/20 21:05	11/23/20 22:49	EL	Mt. Juliet, TN

MW-703 L1286006-06 GW

Collected by: G. Penaflor | Collected date/time: 11/12/20 11:00 | Received date/time: 11/14/20 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1579271	1	11/19/20 16:05	11/19/20 19:02	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	1	11/25/20 22:10	11/25/20 22:10	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	5	11/25/20 12:57	11/25/20 12:57	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1579830	1	11/21/20 21:05	11/23/20 22:52	EL	Mt. Juliet, TN

MW-704 L1286006-07 GW

Collected by: G. Penaflor | Collected date/time: 11/12/20 14:05 | Received date/time: 11/14/20 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1579271	1	11/19/20 16:05	11/19/20 19:02	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	1	11/25/20 13:10	11/25/20 13:10	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	5	11/25/20 13:48	11/25/20 13:48	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1579834	1	11/21/20 18:41	11/23/20 23:31	EL	Mt. Juliet, TN

MW-705 L1286006-08 GW

Collected by: G. Penaflor | Collected date/time: 11/12/20 15:05 | Received date/time: 11/14/20 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1579271	1	11/19/20 16:05	11/19/20 19:02	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	1	11/25/20 22:35	11/25/20 22:35	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	5	11/25/20 14:39	11/25/20 14:39	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1579834	1	11/21/20 18:41	11/23/20 23:42	EL	Mt. Juliet, TN

MW-706 L1286006-09 GW

Collected by: G. Penaflor | Collected date/time: 11/12/20 14:35 | Received date/time: 11/14/20 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1579271	1	11/19/20 16:05	11/19/20 19:02	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	5	11/25/20 22:48	11/25/20 22:48	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1579834	1	11/21/20 18:41	11/23/20 23:45	EL	Mt. Juliet, TN

MW-707B L1286006-10 GW

Collected by: G. Penaflor | Collected date/time: 11/12/20 13:05 | Received date/time: 11/14/20 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1579271	1	11/19/20 16:05	11/19/20 19:02	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	1	11/25/20 23:26	11/25/20 23:26	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	100	11/25/20 15:30	11/25/20 15:30	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1579834	1	11/21/20 18:41	11/23/20 23:48	EL	Mt. Juliet, TN

MW-708 L1286006-11 GW

Collected by: G. Penaflor | Collected date/time: 11/12/20 12:35 | Received date/time: 11/14/20 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1579271	1	11/19/20 16:05	11/19/20 19:02	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	1	11/25/20 17:03	11/25/20 17:03	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1579834	1	11/21/20 18:41	11/23/20 23:51	EL	Mt. Juliet, TN

TW-1 L1286006-12 GW

Collected by: G. Penaflor | Collected date/time: 11/12/20 13:30 | Received date/time: 11/14/20 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1579271	1	11/19/20 16:05	11/19/20 19:02	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	1	11/25/20 17:29	11/25/20 17:29	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1579836	1	11/21/20 16:30	11/23/20 09:48	CCE	Mt. Juliet, TN

DUPLICATE L1286006-13 GW

Collected by: G. Penaflor
Collected date/time: 11/12/20 14:05
Received date/time: 11/14/20 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1579271	1	11/19/20 16:05	11/19/20 19:02	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1581709	1	11/25/20 18:20	11/25/20 18:20	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1584151	5	11/30/20 16:28	11/30/20 16:28	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1579836	1	11/21/20 16:30	11/23/20 09:51	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

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	1130000		3750	13300	1	11/19/2020 19:02	WG1579271

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	205000		1900	5000	5	11/25/2020 10:11	WG1581709
Fluoride	561		64.0	150	1	11/25/2020 09:46	WG1581709
Sulfate	133000		2970	25000	5	11/25/2020 10:11	WG1581709

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	1140		20.0	200	1	11/23/2020 21:33	WG1579830
Calcium	82400		79.3	1000	1	11/23/2020 21:33	WG1579830

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	917000		2820	10000	1	11/19/2020 19:02	WG1579271

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	94200		379	1000	1	11/25/2020 10:37	WG1581709
Fluoride	1250		64.0	150	1	11/25/2020 10:37	WG1581709
Sulfate	1120	J	594	5000	1	11/25/2020 10:37	WG1581709

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	1560		20.0	200	1	11/23/2020 22:40	WG1579830
Calcium	20500		79.3	1000	1	11/23/2020 22:40	WG1579830

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	920000		2820	10000	1	11/19/2020 19:02	WG1579271

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	84100		379	1000	1	11/25/2020 11:02	WG1581709
Fluoride	573		64.0	150	1	11/25/2020 11:02	WG1581709
Sulfate	179000		2970	25000	5	11/25/2020 11:15	WG1581709

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	1190		20.0	200	1	11/23/2020 22:43	WG1579830
Calcium	54200		79.3	1000	1	11/23/2020 22:43	WG1579830

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	569000		2820	10000	1	11/19/2020 19:02	WG1579271

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	49100		379	1000	1	11/25/2020 21:44	WG1581709
Fluoride	607		64.0	150	1	11/25/2020 21:44	WG1581709
Sulfate	86200		594	5000	1	11/25/2020 21:44	WG1581709

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	920		20.0	200	1	11/23/2020 22:46	WG1579830
Calcium	45400		79.3	1000	1	11/23/2020 22:46	WG1579830

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	563000		2820	10000	1	11/19/2020 19:02	WG1579271

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	39400		379	1000	1	11/25/2020 21:57	WG1581709
Fluoride	1190		64.0	150	1	11/25/2020 21:57	WG1581709
Sulfate	1640	J	594	5000	1	11/25/2020 21:57	WG1581709

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	1530		20.0	200	1	11/23/2020 22:49	WG1579830
Calcium	3600		79.3	1000	1	11/23/2020 22:49	WG1579830

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	934000	J3	2820	10000	1	11/19/2020 19:02	WG1579271

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	109000		1900	5000	5	11/25/2020 12:57	WG1581709
Fluoride	1610		64.0	150	1	11/25/2020 22:10	WG1581709
Sulfate	U		594	5000	1	11/25/2020 22:10	WG1581709

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	1830		20.0	200	1	11/23/2020 22:52	WG1579830
Calcium	18400		79.3	1000	1	11/23/2020 22:52	WG1579830

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	1200000		3750	13300	1	11/19/2020 19:02	WG1579271

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	90200		379	1000	1	11/25/2020 13:10	WG1581709
Fluoride	885		64.0	150	1	11/25/2020 13:10	WG1581709
Sulfate	171000		2970	25000	5	11/25/2020 13:48	WG1581709

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	1970		20.0	200	1	11/23/2020 23:31	WG1579834
Calcium	21500		79.3	1000	1	11/23/2020 23:31	WG1579834

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	1000000		3750	13300	1	11/19/2020 19:02	WG1579271

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	141000		1900	5000	5	11/25/2020 14:39	WG1581709
Fluoride	1020		64.0	150	1	11/25/2020 22:35	WG1581709
Sulfate	40100		594	5000	1	11/25/2020 22:35	WG1581709

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	2070		20.0	200	1	11/23/2020 23:42	WG1579834
Calcium	28800		79.3	1000	1	11/23/2020 23:42	WG1579834

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	1180000		3750	13300	1	11/19/2020 19:02	WG1579271

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	244000		1900	5000	5	11/25/2020 22:48	WG1581709
Fluoride	1050		320	750	5	11/25/2020 22:48	WG1581709
Sulfate	20000	J	2970	25000	5	11/25/2020 22:48	WG1581709

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	1980		20.0	200	1	11/23/2020 23:45	WG1579834
Calcium	24400		79.3	1000	1	11/23/2020 23:45	WG1579834

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	8180000		11300	40000	1	11/19/2020 19:02	WG1579271

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	267000		37900	100000	100	11/25/2020 15:30	WG1581709
Fluoride	196		64.0	150	1	11/25/2020 23:26	WG1581709
Sulfate	5250000		59400	500000	100	11/25/2020 15:30	WG1581709

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	1830		20.0	200	1	11/23/2020 23:48	WG1579834
Calcium	404000		79.3	1000	1	11/23/2020 23:48	WG1579834

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	632000		2820	10000	1	11/19/2020 19:02	WG1579271

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	45500		379	1000	1	11/25/2020 17:03	WG1581709
Fluoride	590		64.0	150	1	11/25/2020 17:03	WG1581709
Sulfate	9880		594	5000	1	11/25/2020 17:03	WG1581709

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	1320		20.0	200	1	11/23/2020 23:51	WG1579834
Calcium	30100		79.3	1000	1	11/23/2020 23:51	WG1579834

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	1050000		3750	13300	1	11/19/2020 19:02	WG1579271

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	40500		379	1000	1	11/25/2020 17:29	WG1581709
Fluoride	384		64.0	150	1	11/25/2020 17:29	WG1581709
Sulfate	73800		594	5000	1	11/25/2020 17:29	WG1581709

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	1380		20.0	200	1	11/23/2020 09:48	WG1579836
Calcium	24600		79.3	1000	1	11/23/2020 09:48	WG1579836

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	1240000		3750	13300	1	11/19/2020 19:02	WG1579271

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	95600		379	1000	1	11/25/2020 18:20	WG1581709
Fluoride	917		64.0	150	1	11/25/2020 18:20	WG1581709
Sulfate	157000		2970	25000	5	11/30/2020 16:28	WG1584151

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	1990		20.0	200	1	11/23/2020 09:51	WG1579836
Calcium	21700		79.3	1000	1	11/23/2020 09:51	WG1579836

Method Blank (MB)

(MB) R3595997-1 11/19/20 19:02

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

L1286006-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1286006-06 11/19/20 19:02 • (DUP) R3595997-3 11/19/20 19:02

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Dissolved Solids	934000	1250000	1	29.2	J3	5

L1286006-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1286006-13 11/19/20 19:02 • (DUP) R3595997-4 11/19/20 19:02

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Dissolved Solids	1240000	1200000	1	3.28		5

Laboratory Control Sample (LCS)

(LCS) R3595997-2 11/19/20 19:02

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8430000	95.8	77.4-123	

Method Blank (MB)

(MB) R3598339-1 11/25/20 09:07

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

L1286006-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1286006-01 11/25/20 09:46 • (DUP) R3598339-3 11/25/20 09:59

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Fluoride	561	596	1	6.05		15

L1286006-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1286006-01 11/25/20 10:11 • (DUP) R3598339-4 11/25/20 10:24

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	205000	206000	5	0.862		15
Sulfate	133000	134000	5	0.643		15

L1286006-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1286006-12 11/25/20 17:29 • (DUP) R3598339-7 11/25/20 17:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	40500	40300	1	0.334		15
Fluoride	384	383	1	0.0261		15
Sulfate	73800	73300	1	0.757		15

Laboratory Control Sample (LCS)

(LCS) R3598339-2 11/25/20 09:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	42400	106	80.0-120	
Fluoride	8000	8790	110	80.0-120	
Sulfate	40000	43400	109	80.0-120	

L1286006-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286006-07 11/25/20 13:10 • (MS) R3598339-5 11/25/20 13:23 • (MSD) R3598339-6 11/25/20 13:35

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	90200	147000	147000	114	113	1	80.0-120	E	E	0.353	15
Fluoride	5000	885	6660	6620	116	115	1	80.0-120			0.670	15
Sulfate	50000	163000	223000	222000	119	117	1	80.0-120	E	E	0.535	15

L1286012-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286012-07 11/25/20 20:53 • (MS) R3598339-8 11/25/20 21:06 • (MSD) R3598339-9 11/25/20 21:19

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	95200	153000	152000	115	114	1	80.0-120	E	E	0.157	15
Fluoride	5000	1050	6910	6920	117	117	1	80.0-120			0.0795	15
Sulfate	50000	3250	59600	59600	113	113	1	80.0-120			0.0698	15

Method Blank (MB)

(MB) R3599044-1 11/30/20 12:49

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Sulfate	U		594	5000

L1286006-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1286006-13 11/30/20 16:28 • (DUP) R3599044-3 11/30/20 16:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	157000	160000	5	1.99		15

L1287938-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1287938-01 11/30/20 22:06 • (DUP) R3599044-6 11/30/20 22:23

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	2630	2630	1	0.0837	J	15

Laboratory Control Sample (LCS)

(LCS) R3599044-2 11/30/20 13:06

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Sulfate	40000	39600	99.0	80.0-120	

L1287914-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1287914-02 11/30/20 17:52 • (MS) R3599044-4 11/30/20 18:09 • (MSD) R3599044-5 11/30/20 18:26

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	%	%		%			%	%
Sulfate	50000	39300	85600	88000	92.6	97.3	1	80.0-120			2.76	15

L1287938-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1287938-02 11/30/20 23:14 • (MS) R3599044-7 11/30/20 23:30

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	ug/l	ug/l	ug/l	%		%	
Sulfate	50000	1250	49400	96.3	1	80.0-120	

Method Blank (MB)

(MB) R3596666-1 11/23/20 21:28

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		20.0	200
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3596666-2 11/23/20 21:30

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	955	95.5	80.0-120	
Calcium	10000	9670	96.7	80.0-120	

L1286006-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286006-01 11/23/20 21:33 • (MS) R3596666-4 11/23/20 21:39 • (MSD) R3596666-5 11/23/20 21:42

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	1140	2070	2100	92.6	95.3	1	75.0-125			1.27	20
Calcium	10000	82400	91600	91700	91.9	93.0	1	75.0-125			0.112	20

Method Blank (MB)

(MB) R3596674-1 11/23/20 23:26

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		20.0	200
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3596674-2 11/23/20 23:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	940	94.0	80.0-120	
Calcium	10000	9740	97.4	80.0-120	

L1286006-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286006-07 11/23/20 23:31 • (MS) R3596674-4 11/23/20 23:37 • (MSD) R3596674-5 11/23/20 23:39

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	1970	2850	2850	88.3	88.3	1	75.0-125			0.0109	20
Calcium	10000	21500	31700	31800	103	104	1	75.0-125			0.323	20

Method Blank (MB)

(MB) R3596428-1 11/23/20 09:32

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		20.0	200
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3596428-2 11/23/20 09:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	965	96.5	80.0-120	
Calcium	10000	9870	98.7	80.0-120	

L1286012-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286012-07 11/23/20 09:37 • (MS) R3596428-4 11/23/20 09:43 • (MSD) R3596428-5 11/23/20 09:45

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	2200	3120	3130	92.5	92.9	1	75.0-125			0.112	20
Calcium	10000	26400	36000	35800	96.4	94.4	1	75.0-125			0.559	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.
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.

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	LAO00356
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

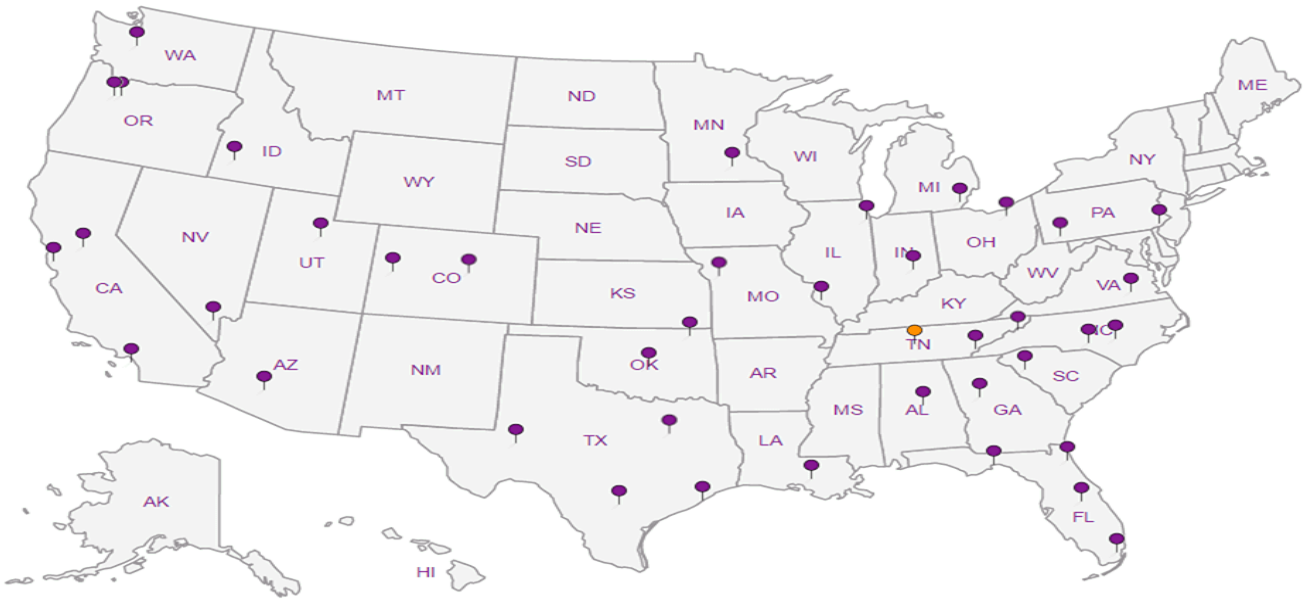
Third Party Federal Accreditations

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.



SCS Engineers - KS
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk

Report to: Jason Franks

Email To: jfranks@scsengineers.com;jay.martin@evergy.c

Project Description: KCPL - LaCygne Generating Station

City/State Collected:

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project # 27217233.20

Lab Project # AQUAOPKS-LACYGNE

Collected by (print): G. Penaflor

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Site/Facility ID #

P.O. #

Quote #

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

Date Results Needed: Std

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres									Remarks	Sample # (lab only)
MW-6	GRAB	GW	-	11/12/20	1455	3	X	X	X										-01
MW-7		GW	-		1420	3	X	X	X										02
MW-11		GW	-		1250	3	X	X	X										03
MW-701		GW	-		1330	3	X	X	X										04
MW-702		GW	-		1010	3	X	X	X										05
MW-703		GW	-		1100	3	X	X	X										06
MW-704		GW	-		1405	3	X	X	X										07
MW-705		GW	-		1505	3	X	X	X										08
MW-706		GW	-		1435	3	X	X	X										09
MW-707B		GW	-		1305	3	X	X	X										10

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Pace Analytical®
National Center for Testing & Innovation

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

SDG # 1286006
J048

Acctnum: AQUAOPKS
Template: T150678
Prelogin: P805980
PM: 206 - Jeff Carr
PB:

Shipped Via:

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # NO TRACK

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: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	11/13/20	1208	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	11/13/20	1800	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 1.5+.1=1.6 °C Bottles Received: 42

Date: 11/14/20 Time: 9:45

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Report to: Jason Franks

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Email To: jfranks@scsengineers.com;jay.martin@evergy.c

Project Description: KCPL - LaCygne Generating Station

City/State Collected: LaCygne KS

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project # 27217233.20

Lab Project # AQUAOPKS-LACYGNE

Collected by (print): JASON R. FRANKS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

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

Analysis / Container / Preservative

Pres Chk

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-708	GRAB	GW		11/12/20	1235	3	X	X	X		11
TW-1		GW			1330	3	X	X	X		12
DUPLICATE #2		GW			1405	3	X	X	X		13
704 MS/MSD		GW			1405	3	X	X	X		07

Chain of Custody Page 2 of 2

Pace Analytical
National Center for Testing & Innovation

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

SDG # 128600C

Table #

Acctnum: AQUAOPKS

Template: T150678

Prelogin: P805980

PM: 206 - Jeff Carr

PB:

Shipped Via:

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

Remarks:

pH ____ Temp ____

Flow ____ Other ____

Samples returned via: __ UPS __ FedEx __ Courier ____

Tracking #

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:	Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	11/13/20	1208	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	11/13/20	1800	SWA
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			R Holdeman

Trip Blank Received: Yes (No) HCL / MeoH TBR

Temp: 1.5 1.6 °C Bottles Received: 42

Date: 11/14/20 Time: 9:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ATTACHMENT 2

Statistical Analyses

ATTACHMENT 2-1

Fall 2019 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

March 10, 2020

To: La Cygne Generating Station
25166 East 2200 Road
La Cygne, Kansas 66040
Evergy Metro, Inc.

From: SCS Engineers

RE: Determination of Statistically Significant Increases –
Upper AQC Impoundment
Fall 2019 Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Upper AQC Impoundment at the La Cygne 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 7, 2019. Review and validation of the results from the November 2019 Detection Monitoring Event was completed on December 17, 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 January 14, 2020 and February 3, 2020.

The completed statistical evaluation identified one Appendix III constituent above the prediction limit established for monitoring well MW-706.

Constituent/Monitoring Well	*UPL	Observation November 7, 2019	1st Verification January 14, 2020	2nd Verification February 3, 2020
Sulfate				
MW-706	8.79	9.68	9.78	32.8

*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 a SSI above the background prediction limit for sulfate in monitoring well MW-706.

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

La Cygne Generating Station
Determination of Statistically Significant Increases
Upper AQC Impoundment
March 10, 2020

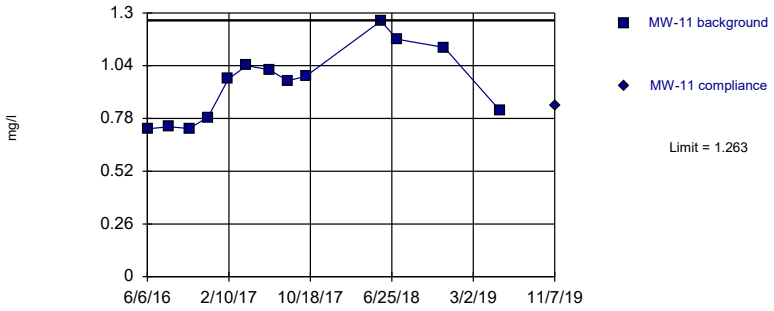
ATTACHMENT 1

Sanitas™ Output

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.95, Std. Dev.=0.1775, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9268, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

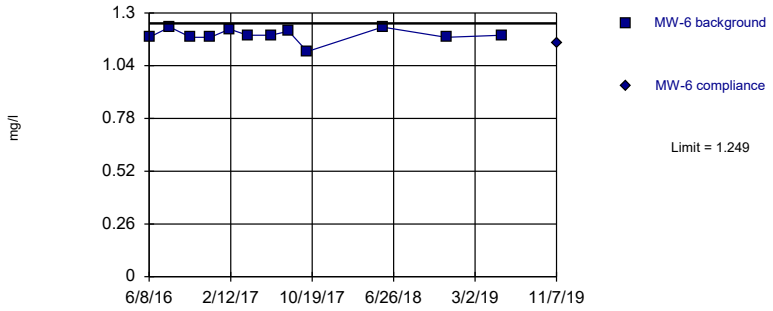
Constituent: BORON Analysis Run 2/21/2020 4:14 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.191, Std. Dev.=0.03204, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.84, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

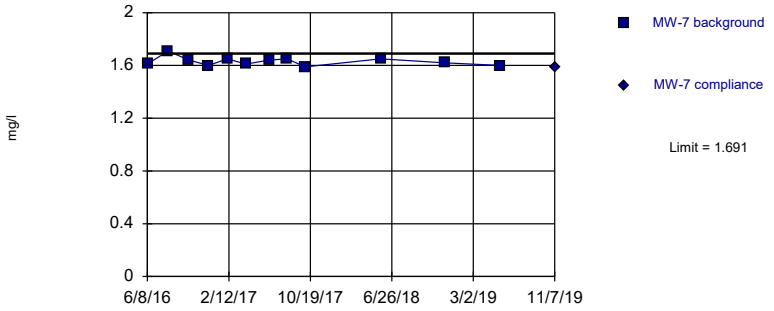
Constituent: BORON Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.631, Std. Dev.=0.03315, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8907, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

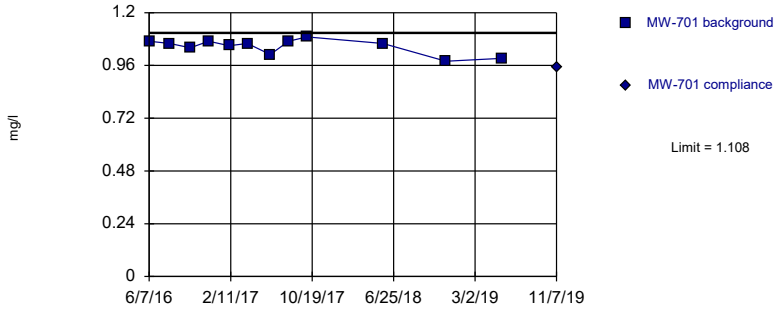
Constituent: BORON Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.046, Std. Dev.=0.03438, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8717, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: BORON Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

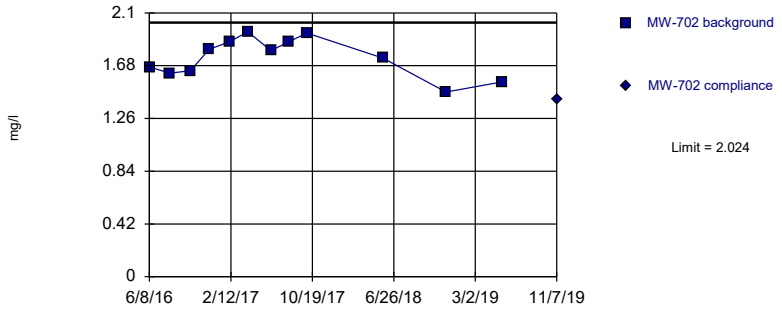
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-11	MW-11	MW-6	MW-6	MW-7	MW-7	MW-701	MW-701
6/6/2016	0.729							
6/7/2016							1.07	
6/8/2016			1.18		1.61			
8/9/2016							1.06	
8/10/2016			1.23		1.71			
8/11/2016	0.739							
10/11/2016							1.04	
10/12/2016	0.73							
10/13/2016			1.18		1.64			
12/6/2016							1.07	
12/9/2016	0.786							
12/12/2016			1.18		1.6			
2/7/2017							1.05	
2/8/2017					1.65			
2/9/2017	0.974		1.22					
4/4/2017							1.06	
4/5/2017			1.19		1.61			
4/6/2017	1.04							
6/13/2017							1.01	
6/15/2017	1.02		1.19		1.64			
8/8/2017							1.07	
8/9/2017			1.21		1.65			
8/10/2017	0.965							
10/3/2017							1.09	
10/5/2017	0.988		1.11		1.59			
5/23/2018	1.26		1.23		1.65			
5/24/2018							1.06	
7/11/2018	1.17							
12/3/2018	1.13						0.979	
12/4/2018			1.18		1.62			
5/23/2019	0.819		1.19		1.6		0.992	
11/7/2019		0.846		1.15		1.59		0.952

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.744, Std. Dev.=0.1551, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9541, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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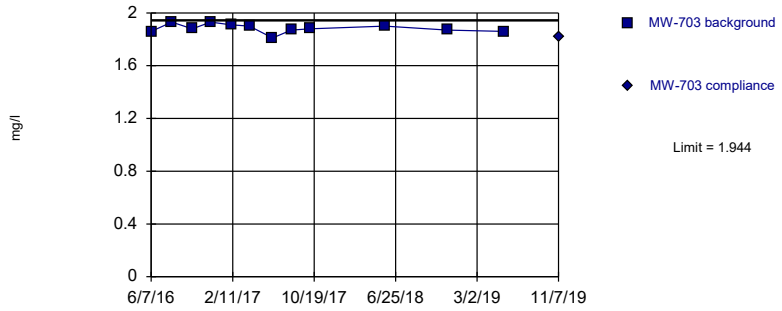
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.883, Std. Dev.=0.03367, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9397, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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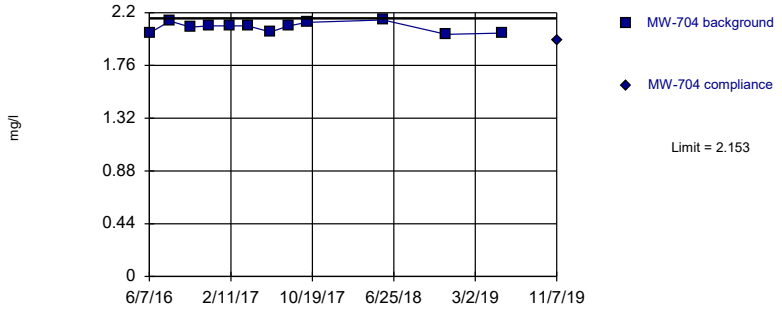
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.079, Std. Dev.=0.04078, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9087, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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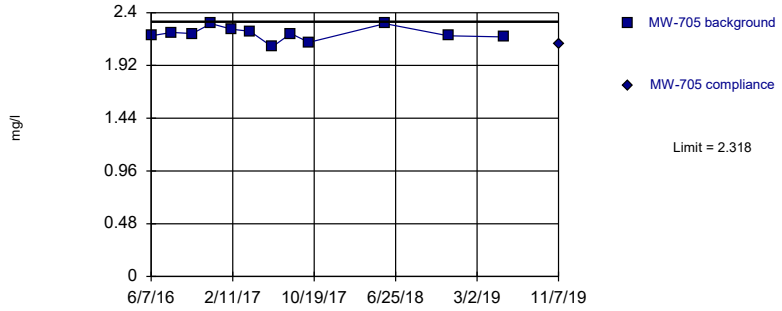
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.208, Std. Dev.=0.06088, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9524, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: BORON Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

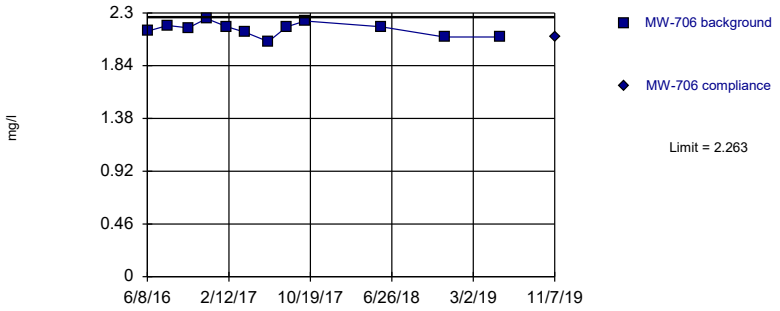
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-702	MW-702	MW-703	MW-703	MW-704	MW-704	MW-705	MW-705
6/7/2016			1.86		2.03		2.19	
6/8/2016	1.67							
8/9/2016	1.62		1.93		2.13		2.22	
10/11/2016	1.64		1.88		2.08		2.21	
12/6/2016			1.93		2.09			
12/7/2016							2.3	
12/8/2016	1.81							
2/7/2017			1.91		2.09			
2/8/2017	1.87							
2/9/2017							2.25	
4/4/2017			1.9		2.09			
4/5/2017	1.95							
4/6/2017							2.23	
6/13/2017					2.04		2.09	
6/14/2017			1.81					
6/15/2017	1.8							
8/8/2017					2.09			
8/9/2017	1.87						2.21	
8/10/2017			1.87					
10/3/2017	1.94				2.12		2.13	
10/5/2017			1.88					
5/24/2018	1.74		1.9		2.14		2.3	
12/3/2018	1.47		1.87		2.02			
12/4/2018							2.19	
5/23/2019	1.55		1.86		2.03		2.18	
11/7/2019		1.41		1.82		1.97		2.11

Within Limit

Prediction Limit

Intrawell Parametric



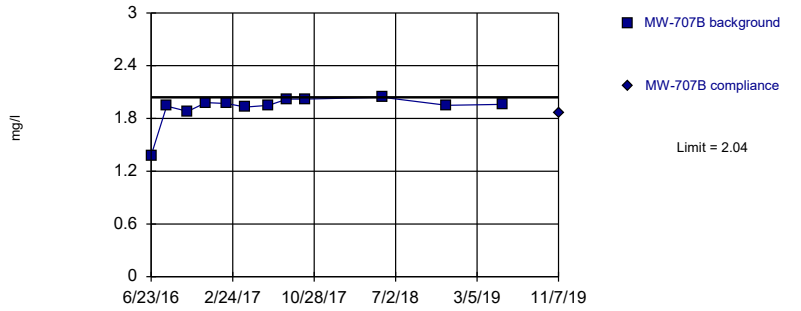
Background Data Summary: Mean=2.157, Std. Dev.=0.05898, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9577, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 2/21/2020 4:15 PM View: Upper AQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Non-parametric



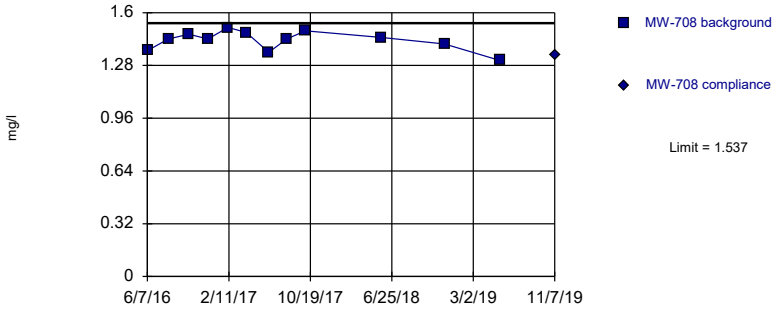
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

Constituent: BORON Analysis Run 2/21/2020 4:15 PM View: Upper AQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



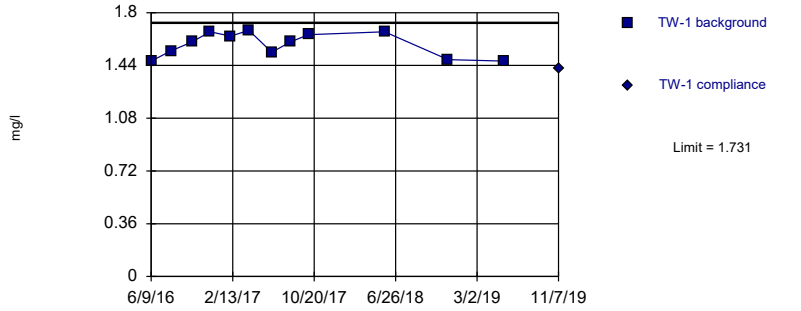
Background Data Summary: Mean=1.431, Std. Dev.=0.05885, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9376, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 2/21/2020 4:15 PM View: Upper AQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.583, Std. Dev.=0.08184, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.878, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 2/21/2020 4:15 PM View: Upper AQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: BORON Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

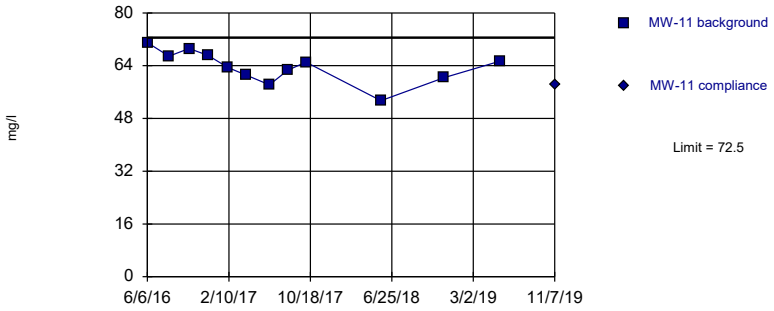
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-706	MW-706	MW-707B	MW-707B	MW-708	MW-708	TW-1	TW-1
6/7/2016					1.37			
6/8/2016	2.14							
6/9/2016							1.47	
6/23/2016			1.38					
8/9/2016	2.19		1.94				1.54	
8/10/2016					1.44			
10/11/2016	2.17		1.88				1.6	
10/12/2016					1.47			
12/6/2016	2.25		1.98				1.67	
12/9/2016					1.44			
2/7/2017	2.18		1.97				1.64	
2/9/2017					1.51			
4/4/2017	2.13		1.93				1.68	
4/6/2017					1.48			
6/13/2017	2.05		1.95				1.53	
6/14/2017					1.36			
8/8/2017			2.02		1.44		1.6	
8/9/2017	2.18							
10/3/2017			2.02				1.65	
10/4/2017	2.23				1.49			
5/23/2018					1.45			
5/24/2018	2.18		2.04				1.67	
12/4/2018	2.09		1.95		1.41		1.48	
5/23/2019	2.09		1.96		1.31		1.47	
11/7/2019		2.09		1.86		1.34		1.42

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=63.65, Std. Dev.=4.912, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.976, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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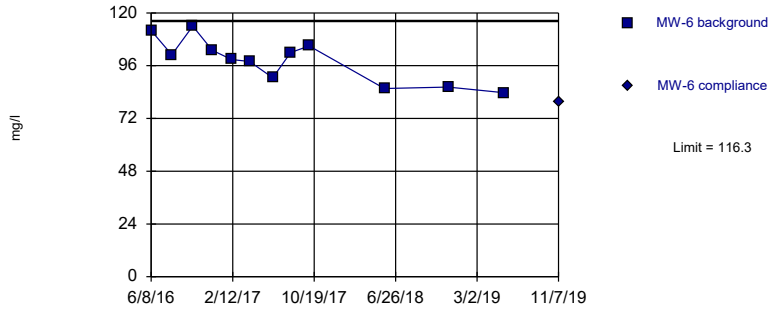
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=98.32, Std. Dev.=10.01, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.94, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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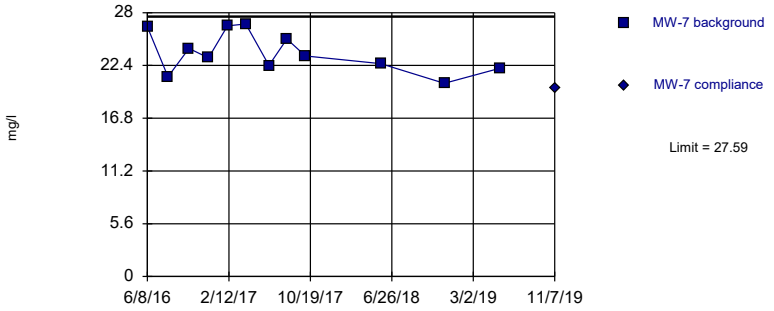
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=23.73, Std. Dev.=2.146, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9333, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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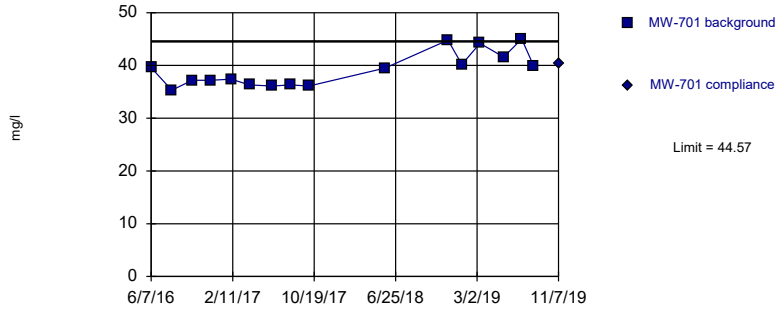
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=39.17, Std. Dev.=3.266, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8786, critical = 0.844. Kappa = 1.654 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CALCIUM Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

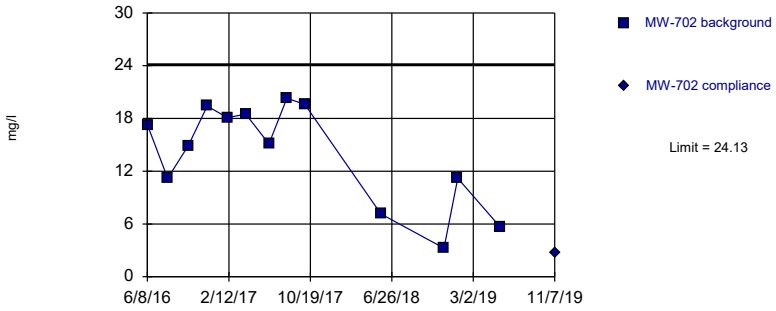
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-11	MW-11	MW-6	MW-6	MW-7	MW-7	MW-701	MW-701
6/6/2016	71							
6/7/2016							39.6	
6/8/2016			112		26.5			
8/9/2016							35.3	
8/10/2016			101		21.2			
8/11/2016	66.9							
10/11/2016							37.2	
10/12/2016	69.2							
10/13/2016			114		24.2			
12/6/2016							37.2	
12/9/2016	67.1							
12/12/2016			103		23.2			
2/7/2017							37.4	
2/8/2017					26.6			
2/9/2017	63.4		98.8					
4/4/2017							36.3	
4/5/2017			97.9		26.8			
4/6/2017	61.1							
6/13/2017							36.1	
6/15/2017	58.2		90.5		22.4			
8/8/2017							36.3	
8/9/2017			102		25.2			
8/10/2017	62.6							
10/3/2017							36.1	
10/5/2017	65.1		105		23.4			
5/23/2018	53.4		85.6		22.6			
5/24/2018							39.5	
12/3/2018	60.4						44.8	
12/4/2018			86.3		20.5			
1/15/2019							40.2	
3/11/2019							44.2	
5/23/2019	65.4		83.7		22.1		41.6	
7/17/2019							45	
8/23/2019							39.9	
11/7/2019		58.2		79.7		20		40.4

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=13.97, Std. Dev.=5.757, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8941, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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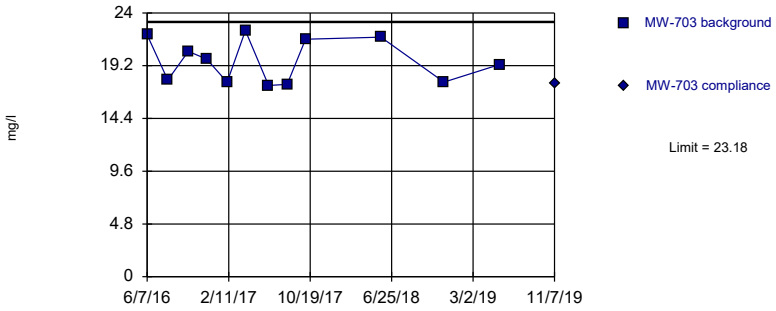
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=19.63, Std. Dev.=1.971, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8622, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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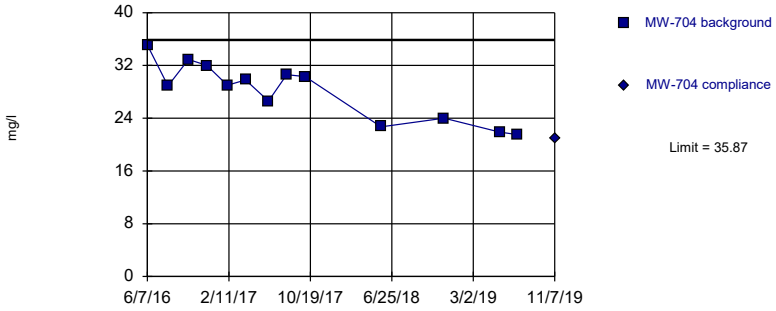
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=28.1, Std. Dev.=4.405, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9368, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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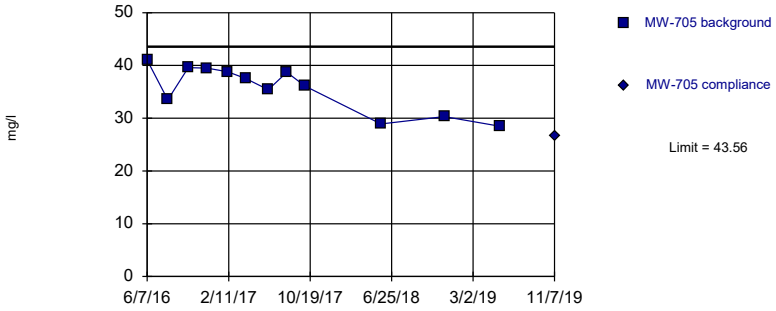
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=35.65, Std. Dev.=4.389, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.892, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CALCIUM Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

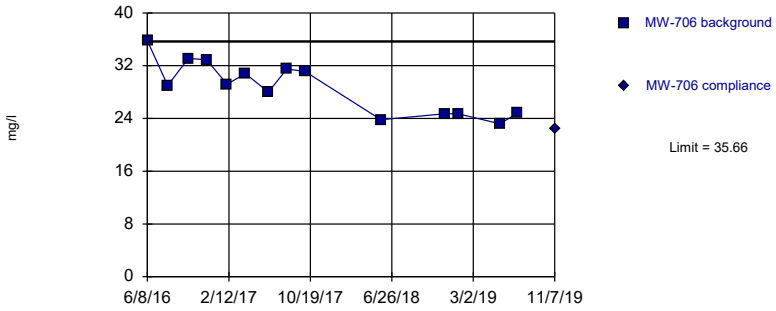
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-702	MW-702	MW-703	MW-703	MW-704	MW-704	MW-705	MW-705
6/7/2016			22		35.1		41	
6/8/2016	17.3							
8/9/2016	11.2		17.9		28.9		33.5	
10/11/2016	14.9		20.5		32.9		39.6	
12/6/2016			19.8		32			
12/7/2016							39.5	
12/8/2016	19.4							
2/7/2017			17.7		29			
2/8/2017	18.1							
2/9/2017							38.8	
4/4/2017			22.4		29.8			
4/5/2017	18.5							
4/6/2017							37.5	
6/13/2017					26.6		35.4	
6/14/2017			17.4					
6/15/2017	15.1							
8/8/2017					30.6			
8/9/2017	20.3						38.7	
8/10/2017			17.5					
10/3/2017	19.6				30.3		36.1	
10/5/2017			21.6					
5/24/2018	7.13		21.8		22.7		28.9	
12/3/2018	3.24		17.7		24			
12/4/2018							30.3	
1/14/2019	11.2							
5/23/2019	5.7		19.3		21.9		28.5	
7/17/2019					21.5			
11/7/2019		2.73		17.6		21		26.7

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=28.76, Std. Dev.=3.997, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9349, critical = 0.825. Kappa = 1.728 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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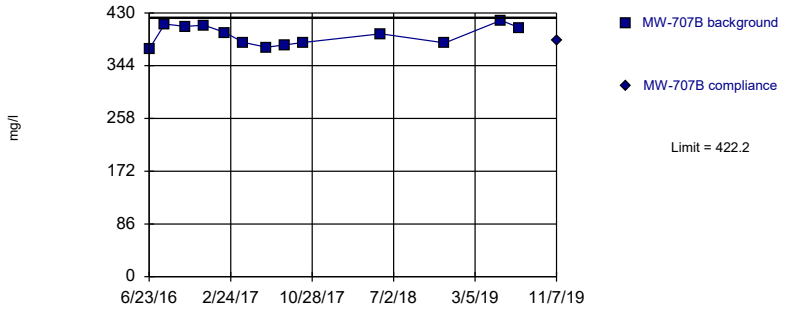
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=393.5, Std. Dev.=16.22, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9122, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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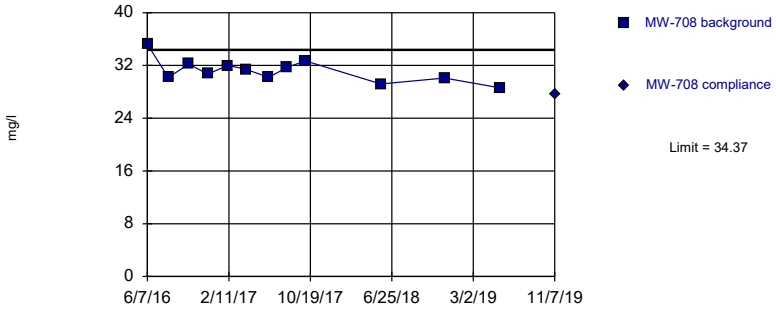
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=31.18, Std. Dev.=1.768, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9496, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

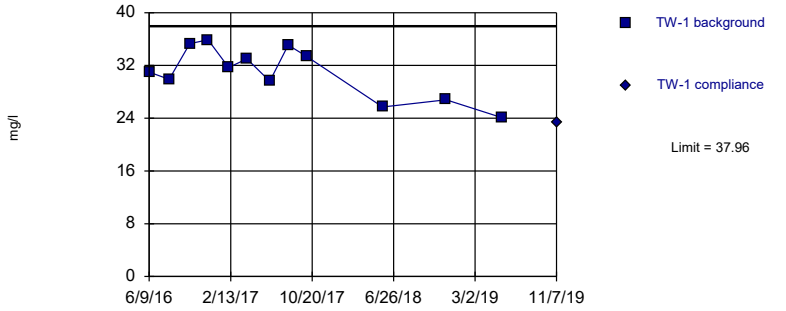
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=30.96, Std. Dev.=3.885, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9425, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CALCIUM Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

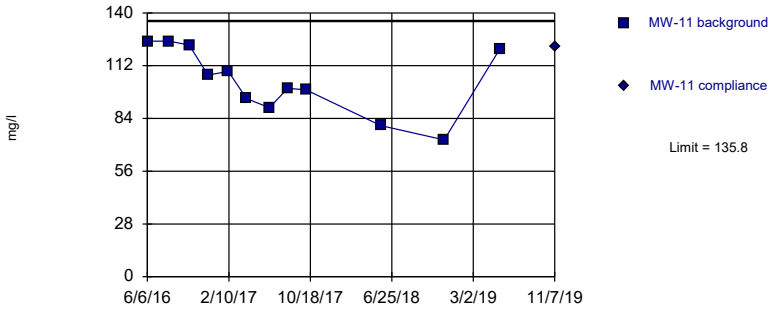
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-706	MW-706	MW-707B	MW-707B	MW-708	MW-708	TW-1	TW-1
6/7/2016					35.2			
6/8/2016	35.8							
6/9/2016							31	
6/23/2016			371					
8/9/2016	29		412				29.9	
8/10/2016					30.2			
10/11/2016	33.1		408				35.3	
10/12/2016					32.2			
12/6/2016	32.9		410				35.9	
12/9/2016					30.7			
2/7/2017	29.2		398				31.7	
2/9/2017					32			
4/4/2017	30.8		382				33	
4/6/2017					31.4			
6/13/2017	28		374				29.6	
6/14/2017					30.2			
8/8/2017			378		31.7		35.1	
8/9/2017	31.5							
10/3/2017			382				33.4	
10/4/2017	31.1				32.7			
5/23/2018					29.2			
5/24/2018	23.8		396				25.7	
12/4/2018	24.7		381		30.1		26.8	
1/15/2019	24.7							
5/23/2019	23.2		418		28.6		24.1	
7/17/2019	24.8		406					
11/7/2019		22.5		386		27.7		23.3

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=103.9, Std. Dev.=17.71, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.932, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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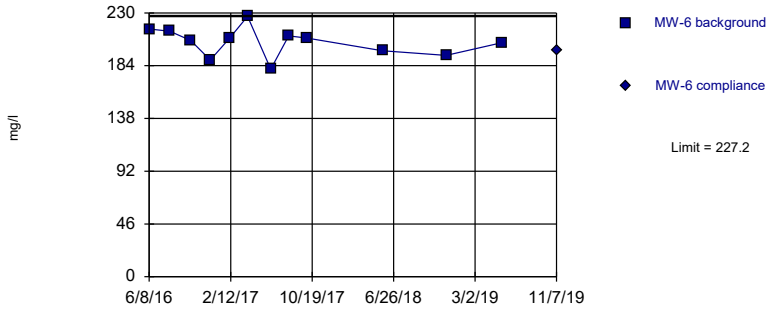
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=204.4, Std. Dev.=12.67, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9786, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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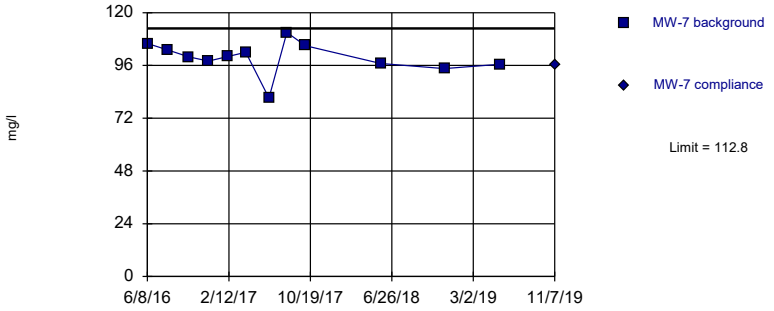
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=99.51, Std. Dev.=7.389, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9149, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

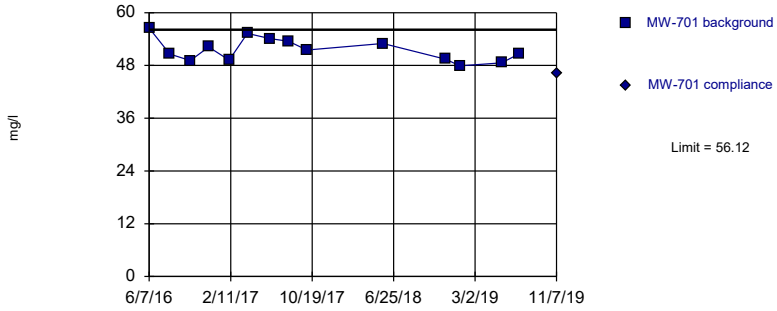
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=51.54, Std. Dev.=2.649, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9537, critical = 0.825. Kappa = 1.728 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CHLORIDE Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

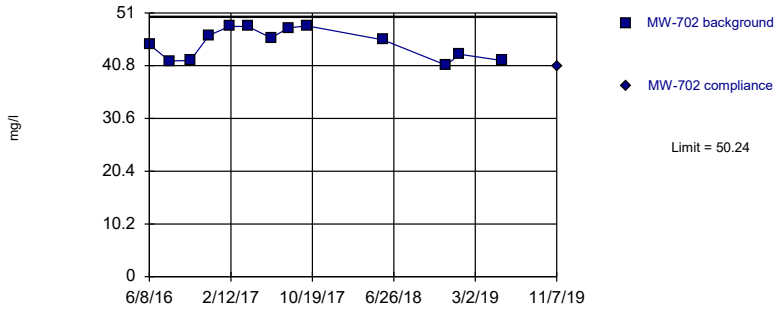
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-11	MW-11	MW-6	MW-6	MW-7	MW-7	MW-701	MW-701
6/6/2016	125							
6/7/2016							56.5	
6/8/2016			216		106			
8/9/2016							50.6	
8/10/2016			214		103			
8/11/2016	125							
10/11/2016							49.1	
10/12/2016	123							
10/13/2016			206		99.9			
12/6/2016							52.2	
12/9/2016	107							
12/12/2016			189		98			
2/7/2017							49.2	
2/8/2017					100			
2/9/2017	109		208					
4/4/2017							55.3	
4/5/2017			227		102			
4/6/2017	94.5							
6/13/2017							54.1	
6/15/2017	89.7		181		81.2			
8/8/2017							53.5	
8/9/2017			210		111			
8/10/2017	100							
10/3/2017							51.5	
10/5/2017	99.2		208		105			
5/23/2018	80.2		197		96.9			
5/24/2018							53	
12/3/2018	72.6						49.4	
12/4/2018			193		94.6			
1/15/2019							47.9	
5/23/2019	121		204		96.5		48.6	
7/17/2019							50.7	
11/7/2019		122		197		96.2		46.2

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=45.09, Std. Dev.=2.916, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8743, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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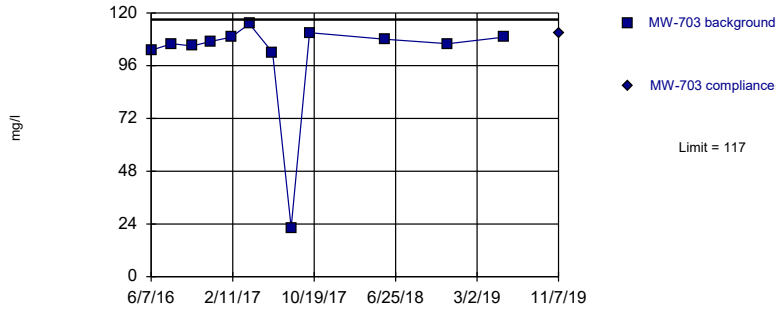
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on x^5 transformation): Mean=1.3e10, Std. Dev.=4.8e9, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8112, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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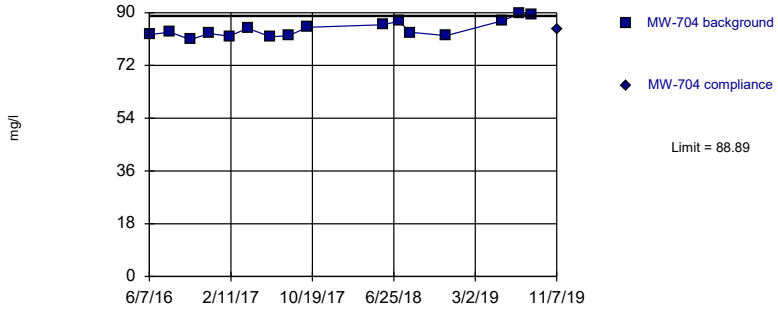
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=84.36, Std. Dev.=2.74, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9076, critical = 0.844. Kappa = 1.654 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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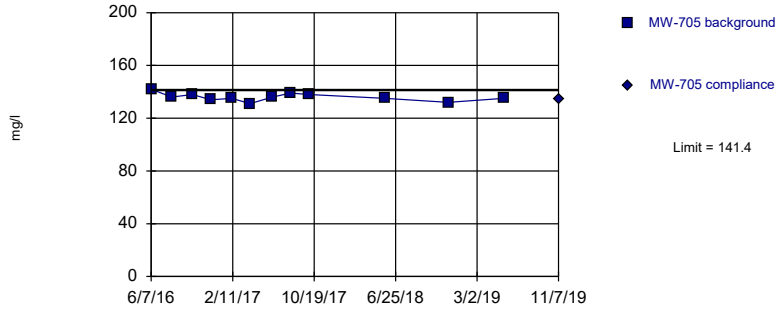
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=135.9, Std. Dev.=3.029, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9687, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CHLORIDE Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

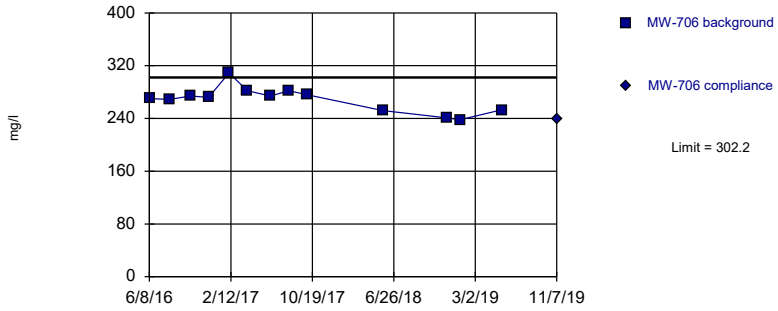
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-702	MW-702	MW-703	MW-703	MW-704	MW-704	MW-705	MW-705
6/7/2016			103		82.5		142	
6/8/2016	44.9							
8/9/2016	41.7		106		83.4		136	
10/11/2016	41.8		105		80.8		138	
12/6/2016			107		82.9			
12/7/2016							134	
12/8/2016	46.7							
2/7/2017			109		82			
2/8/2017	48.4							
2/9/2017							135	
4/4/2017			115		84.7			
4/5/2017	48.4							
4/6/2017							131	
6/13/2017					81.8		136	
6/14/2017			102					
6/15/2017	46.2							
8/8/2017					82.1			
8/9/2017	48.1						139	
8/10/2017			22.3					
10/3/2017	48.5				85		138	
10/5/2017			111					
5/24/2018	45.8		108		85.9		135	
7/11/2018					87.1			
8/16/2018					83.3			
12/3/2018	40.9		106		82.2			
12/4/2018							132	
1/14/2019	43							
5/23/2019	41.8		109		87.2		135	
7/17/2019					89.7			
8/23/2019					89.2			
11/7/2019		40.7		111		84.5		134

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=268.6, Std. Dev.=19.01, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9333, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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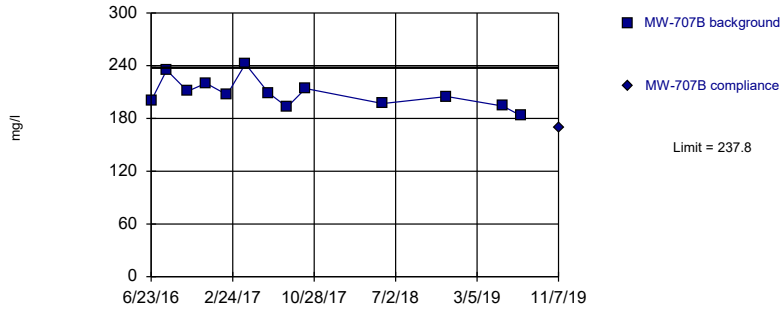
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=208.5, Std. Dev.=16.62, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9526, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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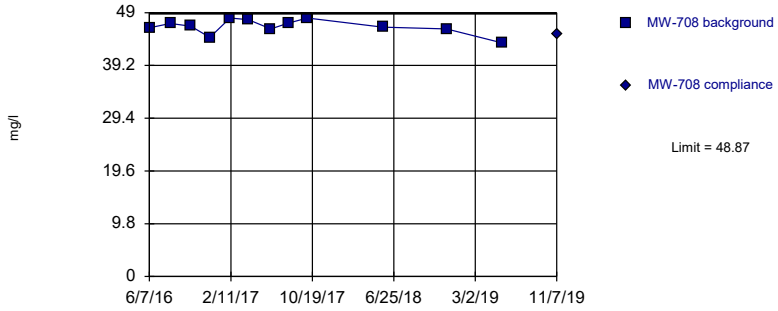
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=46.38, Std. Dev.=1.383, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9073, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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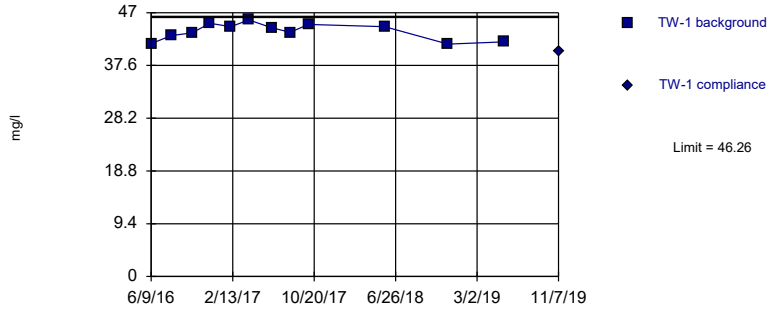
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=43.63, Std. Dev.=1.461, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9241, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CHLORIDE Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

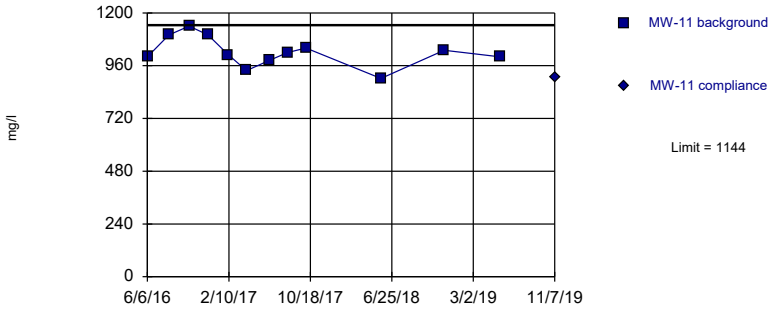
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-706	MW-706	MW-707B	MW-707B	MW-708	MW-708	TW-1	TW-1
6/7/2016					46.2			
6/8/2016	270							
6/9/2016							41.5	
6/23/2016			200					
8/9/2016	269		235				42.9	
8/10/2016					47			
10/11/2016	274		211				43.4	
10/12/2016					46.5			
12/6/2016	272		220				45.1	
12/9/2016					44.4			
2/7/2017	309		207				44.5	
2/9/2017					48			
4/4/2017	282		242				45.7	
4/6/2017					47.7			
6/13/2017	274		209				44.3	
6/14/2017					46			
8/8/2017			193		47.1		43.5	
8/9/2017	282							
10/3/2017			214				44.9	
10/4/2017	276				48			
5/23/2018					46.3			
5/24/2018	252		197				44.5	
12/4/2018	241		205		46		41.4	
1/15/2019	238							
5/23/2019	253		194		43.4		41.8	
7/17/2019			183					
11/7/2019		240		169		45		40.1

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1022, Std. Dev.=67.75, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9655, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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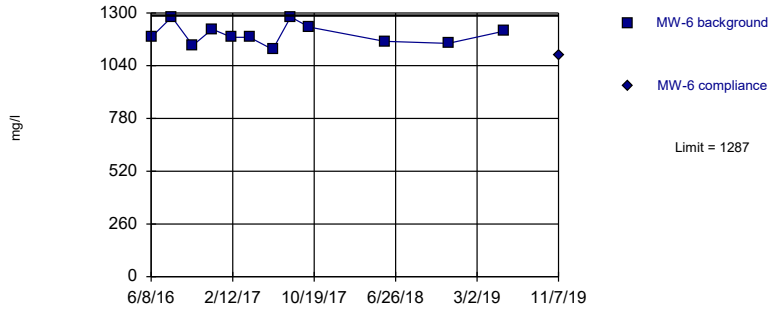
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1194, Std. Dev.=51.43, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9382, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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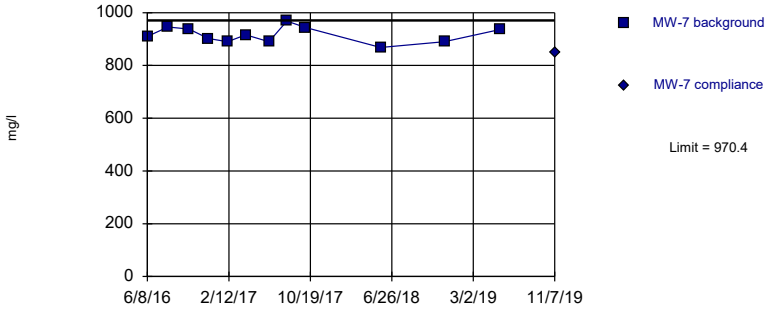
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=916.5, Std. Dev.=29.9, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9564, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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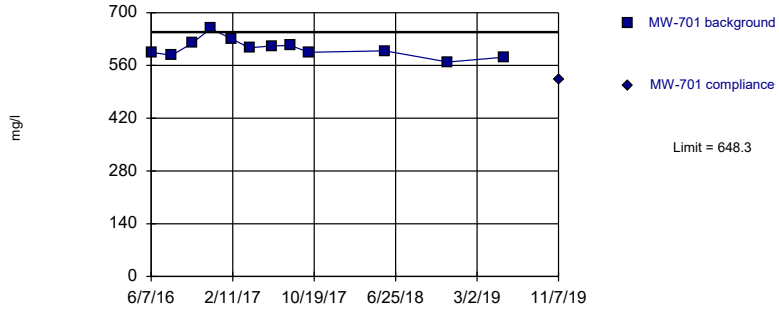
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=605.6, Std. Dev.=23.7, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9644, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

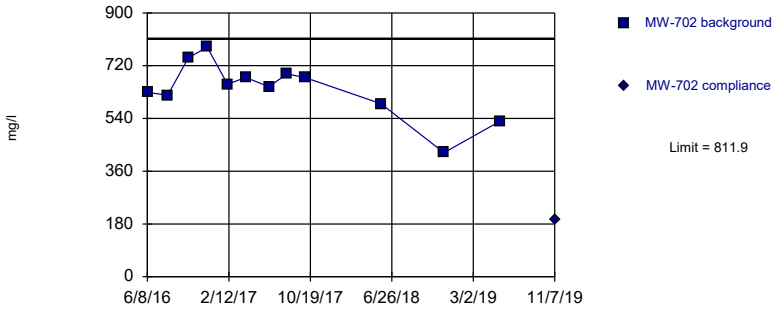
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-11	MW-11	MW-6	MW-6	MW-7	MW-7	MW-701	MW-701
6/6/2016	1000							
6/7/2016							595	
6/8/2016			1180		910			
8/9/2016							587	
8/10/2016			1280		946			
8/11/2016	1100							
10/11/2016							619	
10/12/2016	1140							
10/13/2016			1140		938			
12/6/2016							658	
12/9/2016	1100							
12/12/2016			1220		902			
2/7/2017							631	
2/8/2017					890			
2/9/2017	1010		1180					
4/4/2017							607	
4/5/2017			1180		916			
4/6/2017	938							
6/13/2017							612	
6/15/2017	984		1120		890			
8/8/2017							613	
8/9/2017			1280		968			
8/10/2017	1020							
10/3/2017							595	
10/5/2017	1040		1230		944			
5/23/2018	902		1160		868			
5/24/2018							599	
12/3/2018	1030						569	
12/4/2018			1150		890			
5/23/2019	1000		1210		936		582	
11/7/2019		908		1090		848		521

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=639.8, Std. Dev.=95.54, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9438, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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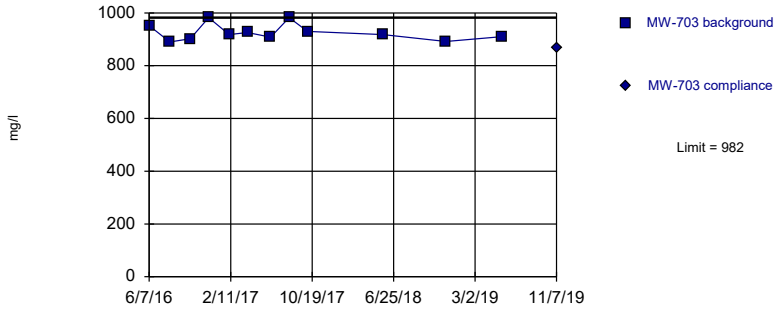
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=925.8, Std. Dev.=31.19, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8793, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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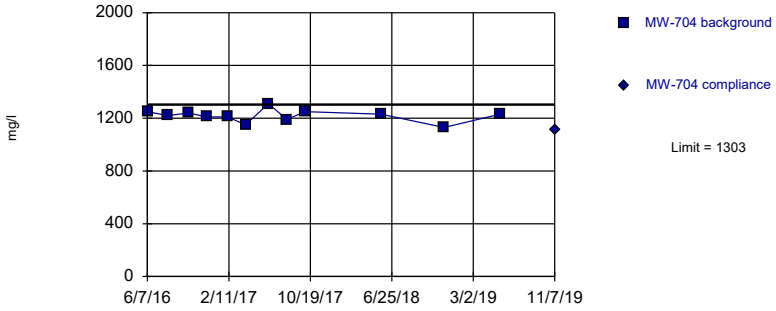
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1218, Std. Dev.=47.26, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9502, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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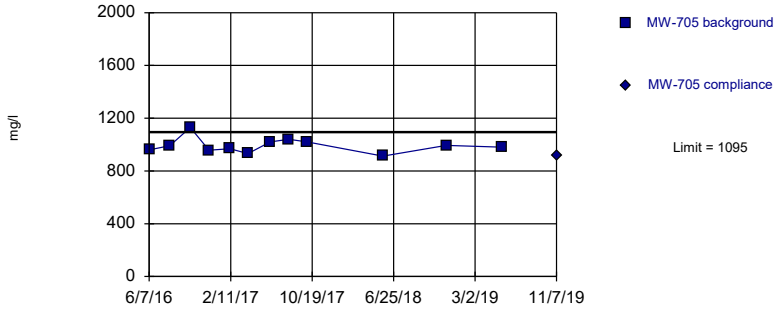
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=992.2, Std. Dev.=57.06, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9257, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

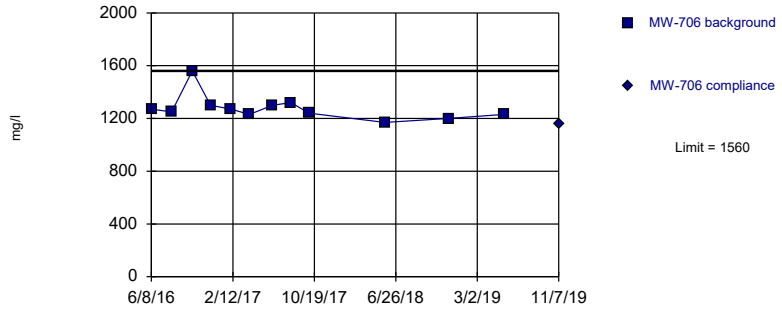
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-702	MW-702	MW-703	MW-703	MW-704	MW-704	MW-705	MW-705
6/7/2016			952		1250		960	
6/8/2016	629							
8/9/2016	619		890		1220		992	
10/11/2016	747		902		1240		1130	
12/6/2016			982		1210			
12/7/2016							958	
12/8/2016	783							
2/7/2017			918		1210			
2/8/2017	657							
2/9/2017							968	
4/4/2017			926		1150			
4/5/2017	680							
4/6/2017							932	
6/13/2017					1310		1020	
6/14/2017			908					
6/15/2017	648							
8/8/2017					1190			
8/9/2017	692						1040	
8/10/2017			982					
10/3/2017	680				1250		1020	
10/5/2017			930					
5/24/2018	590		918		1230		912	
12/3/2018	423		892		1130			
12/4/2018							994	
5/23/2019	530		910		1230		980	
11/7/2019		193		866		1110		914

Within Limit

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. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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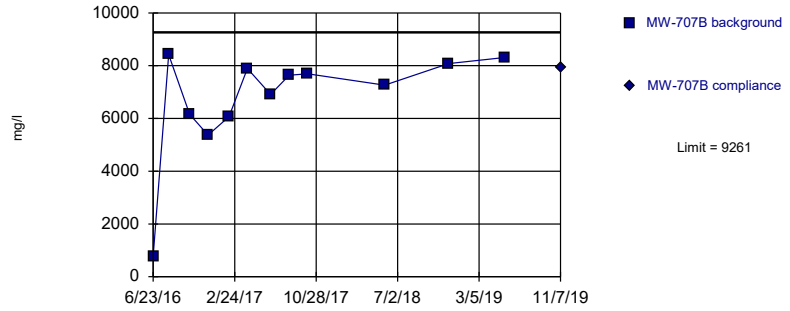
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square transformation): Mean=4.9e7, Std. Dev.=2.0e7, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8899, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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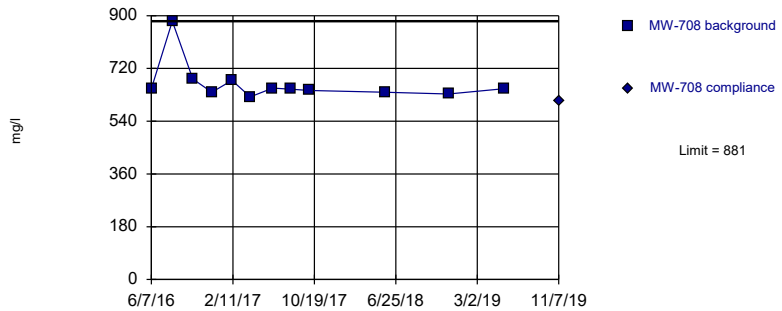
Within Limit

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. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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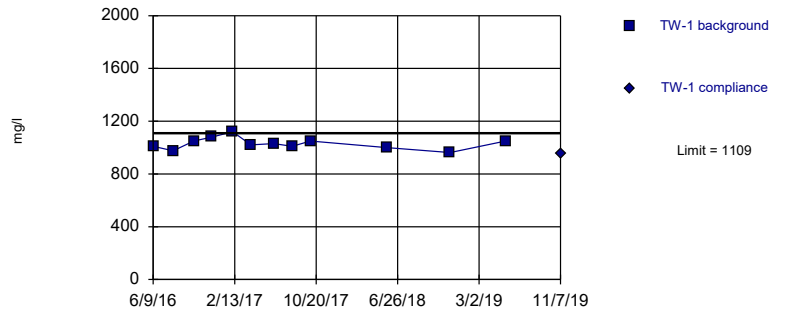
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1030, Std. Dev.=43.84, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9694, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: DISSOLVED SOLIDS Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

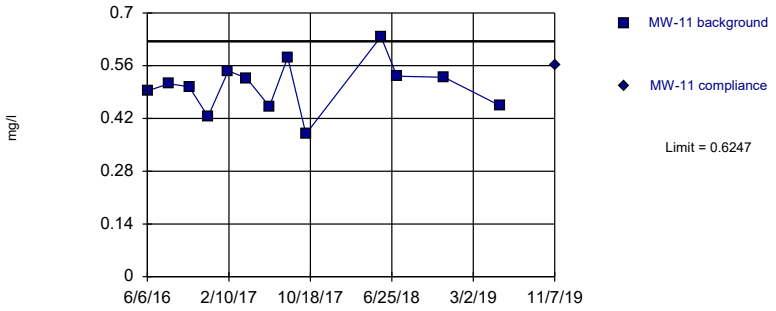
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-706	MW-706	MW-707B	MW-707B	MW-708	MW-708	TW-1	TW-1
6/7/2016					651			
6/8/2016	1270							
6/9/2016							1010	
6/23/2016			770					
8/9/2016	1250		8420				976	
8/10/2016					881			
10/11/2016	1560		6160				1050	
10/12/2016					684			
12/6/2016	1300		5370				1080	
12/9/2016					639			
2/7/2017	1270		6070				1120	
2/9/2017					679			
4/4/2017	1230		7890				1020	
4/6/2017					623			
6/13/2017	1300		6910				1030	
6/14/2017					653			
8/8/2017			7640		649		1010	
8/9/2017	1320							
10/3/2017			7690				1050	
10/4/2017	1240				645			
5/23/2018					639			
5/24/2018	1170		7260				1000	
12/4/2018	1200		8080		633		962	
5/23/2019	1230		8310		651		1050	
11/7/2019		1160		7920		607		956

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.5055, Std. Dev.=0.06751, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.981, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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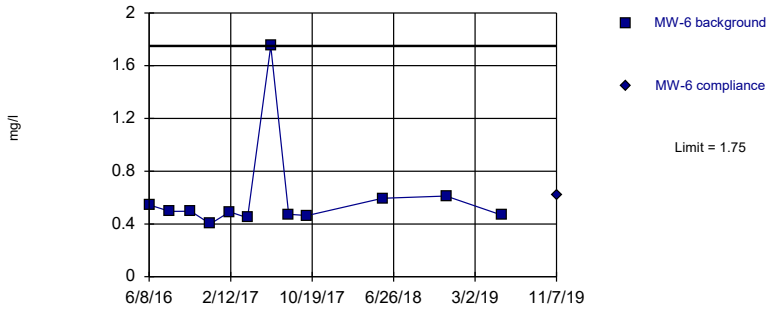
Within Limit

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. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

Constituent: FLUORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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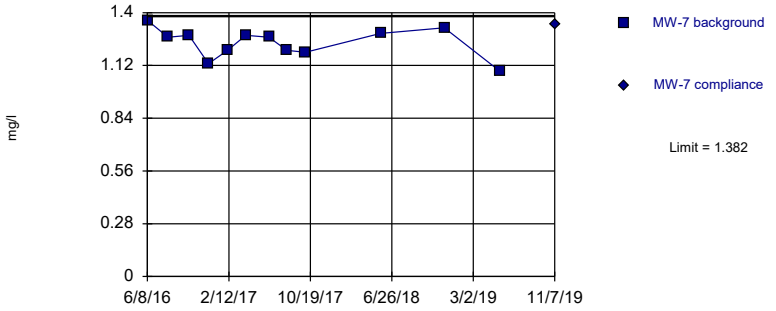
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.24, Std. Dev.=0.07897, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9444, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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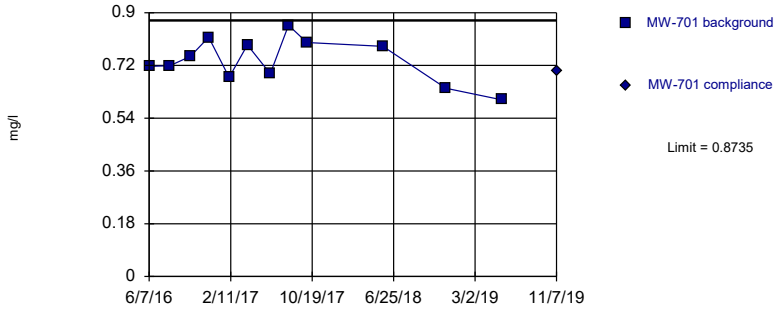
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.7374, Std. Dev.=0.07554, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.977, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: FLUORIDE Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

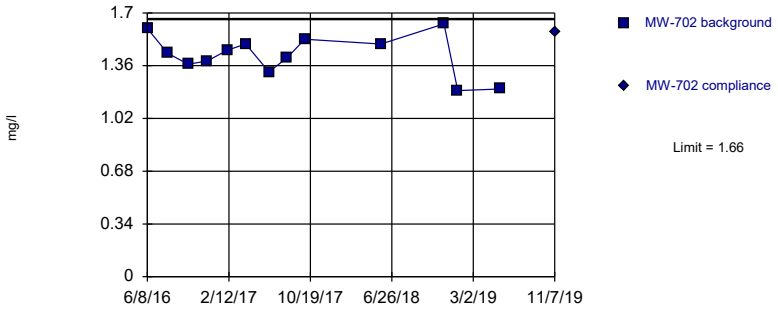
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-11	MW-11	MW-6	MW-6	MW-7	MW-7	MW-701	MW-701
6/6/2016	0.493							
6/7/2016							0.717	
6/8/2016			0.545		1.36			
8/9/2016							0.719	
8/10/2016			0.495		1.27			
8/11/2016	0.512							
10/11/2016							0.751	
10/12/2016	0.504							
10/13/2016			0.497		1.28			
12/6/2016							0.816	
12/9/2016	0.425							
12/12/2016			0.401		1.13			
2/7/2017							0.679	
2/8/2017					1.2			
2/9/2017	0.546		0.492					
4/4/2017							0.79	
4/5/2017			0.447		1.28			
4/6/2017	0.527							
6/13/2017							0.692	
6/15/2017	0.452		1.75		1.27			
8/8/2017							0.857	
8/9/2017			0.473		1.2			
8/10/2017	0.582							
10/3/2017							0.798	
10/5/2017	0.379		0.464		1.19			
5/23/2018	0.637		0.595		1.29			
5/24/2018							0.785	
7/11/2018	0.532							
12/3/2018	0.529						0.642	
12/4/2018			0.612		1.32			
5/23/2019	0.454		0.467		1.09		0.603	
11/7/2019		0.561		0.615		1.34		0.703

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.428, Std. Dev.=0.1319, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9609, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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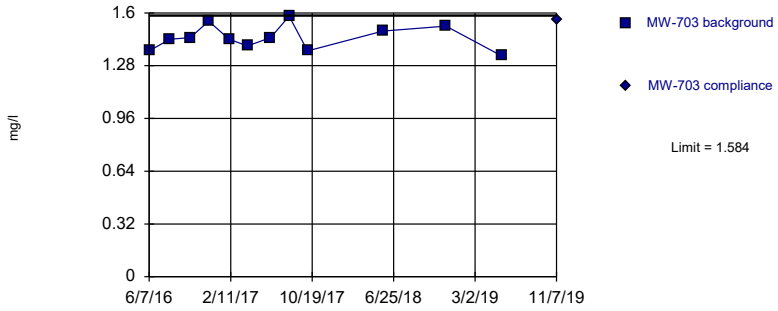
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.45, Std. Dev.=0.07447, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9597, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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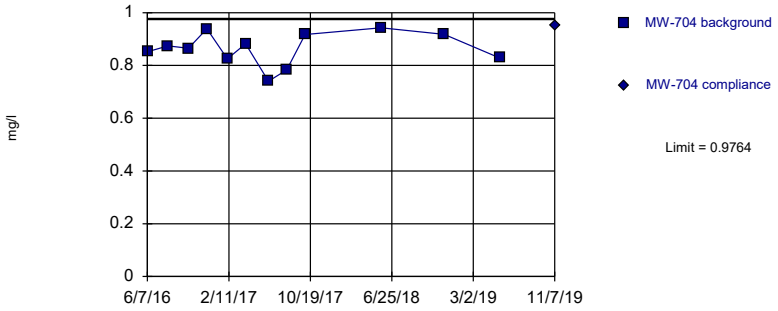
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.8638, Std. Dev.=0.06246, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9508, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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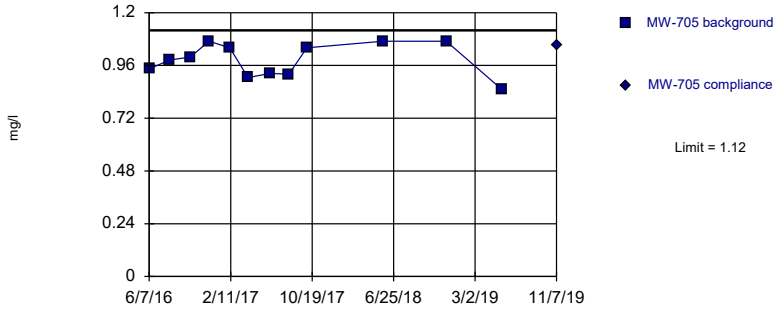
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.9848, Std. Dev.=0.07484, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9122, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: FLUORIDE Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

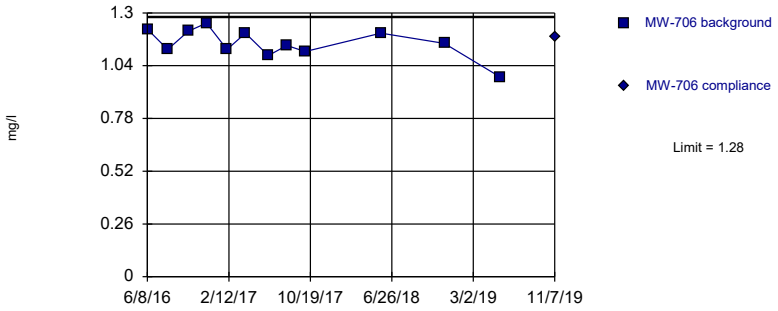
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-702	MW-702	MW-703	MW-703	MW-704	MW-704	MW-705	MW-705
6/7/2016			1.37		0.852		0.944	
6/8/2016	1.6							
8/9/2016	1.44		1.44		0.874		0.985	
10/11/2016	1.37		1.45		0.865		0.998	
12/6/2016			1.55		0.939			
12/7/2016							1.07	
12/8/2016	1.39							
2/7/2017			1.44		0.825			
2/8/2017	1.46							
2/9/2017							1.04	
4/4/2017			1.4		0.882			
4/5/2017	1.5							
4/6/2017							0.905	
6/13/2017					0.74		0.924	
6/14/2017			1.45					
6/15/2017	1.32							
8/8/2017					0.783			
8/9/2017	1.41						0.92	
8/10/2017			1.58					
10/3/2017	1.53				0.917		1.04	
10/5/2017			1.37					
5/24/2018	1.5		1.49		0.943		1.07	
12/3/2018	1.63		1.52		0.918			
12/4/2018							1.07	
1/14/2019	1.2							
5/23/2019	1.21		1.34		0.828		0.852	
11/7/2019		1.58		1.56		0.953		1.05

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.15, Std. Dev.=0.0725, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.932, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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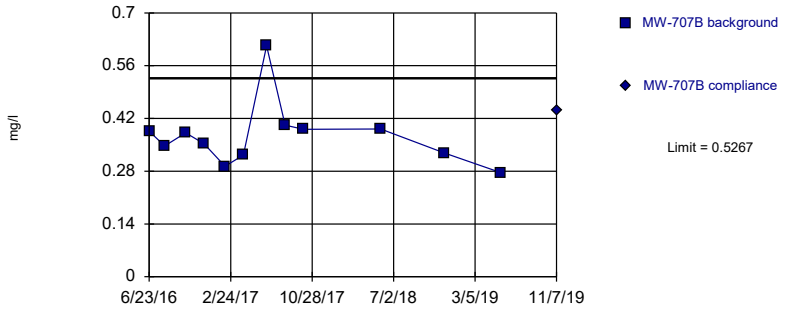
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=0.6082, Std. Dev.=0.06525, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8325, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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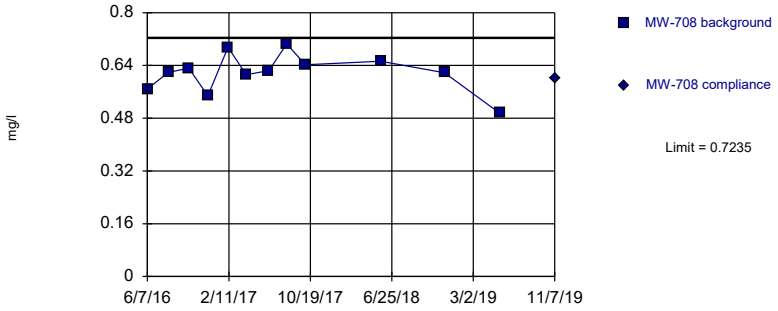
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.6177, Std. Dev.=0.05877, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9478, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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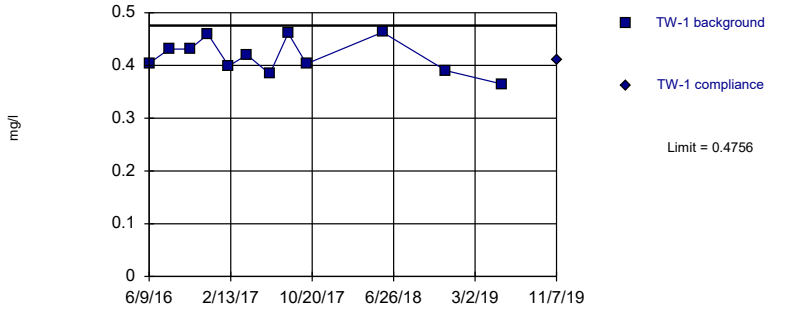
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.4175, Std. Dev.=0.03223, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9393, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: FLUORIDE Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

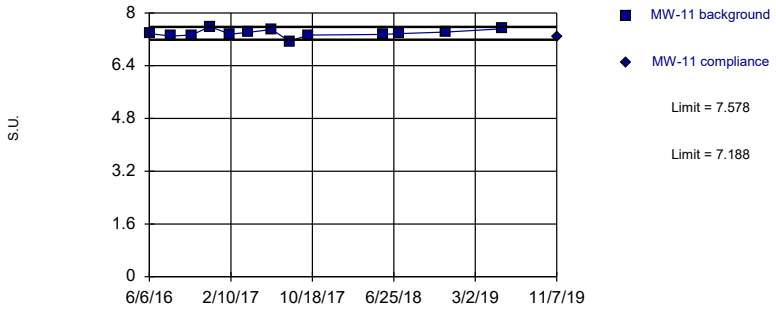
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-706	MW-706	MW-707B	MW-707B	MW-708	MW-708	TW-1	TW-1
6/7/2016					0.569			
6/8/2016	1.22							
6/9/2016							0.404	
6/23/2016			0.386					
8/9/2016	1.12		0.347				0.431	
8/10/2016					0.619			
10/11/2016	1.21		0.382				0.431	
10/12/2016					0.632			
12/6/2016	1.25		0.353				0.459	
12/9/2016					0.548			
2/7/2017	1.12		0.293				0.399	
2/9/2017					0.695			
4/4/2017	1.2		0.323				0.42	
4/6/2017					0.612			
6/13/2017	1.09		0.613				0.384	
6/14/2017					0.624			
8/8/2017			0.402		0.705		0.461	
8/9/2017	1.14							
10/3/2017			0.391				0.403	
10/4/2017	1.11				0.642			
5/23/2018					0.653			
5/24/2018	1.2		0.392				0.463	
12/4/2018	1.15		0.328		0.618		0.39	
5/23/2019	0.985		0.276		0.495		0.365	
11/7/2019		1.18		0.442		0.601		0.411

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.383, Std. Dev.=0.1106, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9444, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

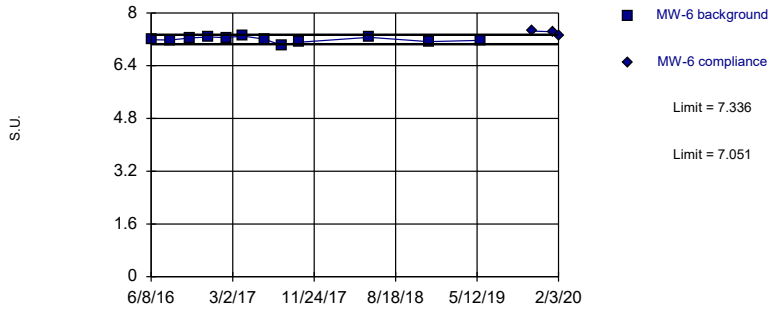
Constituent: pH Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.193, Std. Dev.=0.07912, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9482, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

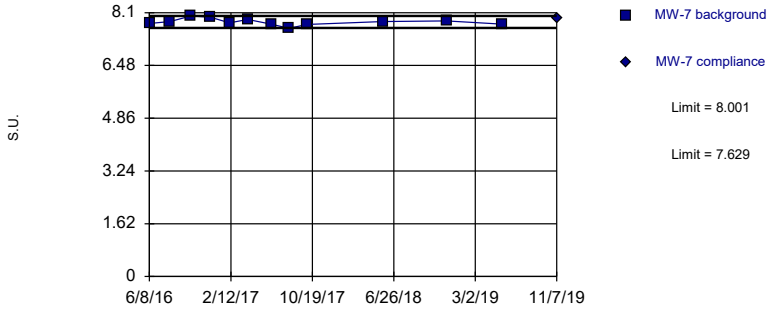
Constituent: pH Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.815, Std. Dev.=0.1033, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9663, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

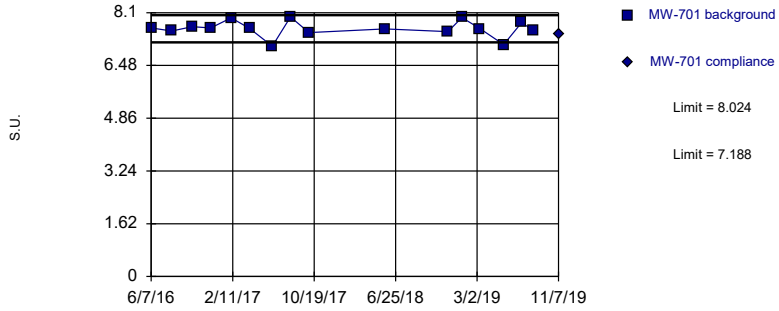
Constituent: pH Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.606, Std. Dev.=0.2528, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8939, critical = 0.844. Kappa = 1.654 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 2/21/2020 4:15 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: pH Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

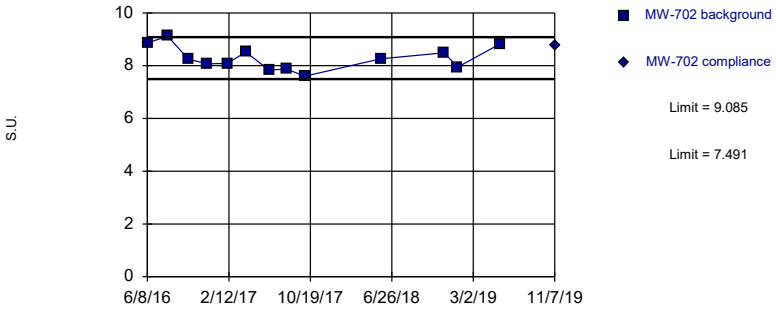
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-11	MW-11	MW-6	MW-6	MW-7	MW-7	MW-701	MW-701
6/6/2016	7.37							
6/7/2016							7.63	
6/8/2016			7.19		7.77			
8/9/2016							7.54	
8/10/2016			7.18		7.83			
8/11/2016	7.3							
10/11/2016							7.67	
10/12/2016	7.33							
10/13/2016			7.24		8			
12/6/2016							7.63	
12/9/2016	7.58							
12/12/2016			7.27		7.96			
2/7/2017							7.94	
2/8/2017					7.79			
2/9/2017	7.36		7.25					
4/4/2017							7.62	
4/5/2017			7.3		7.89			
4/6/2017	7.41							
6/13/2017							7.07	
6/15/2017	7.5		7.2		7.75			
8/8/2017							7.97	
8/9/2017			7.02		7.62			
8/10/2017	7.14							
10/3/2017							7.49	
10/5/2017	7.33		7.11		7.74			
5/23/2018	7.35		7.26		7.83			
5/24/2018							7.6	
7/11/2018	7.37							
12/3/2018	7.42						7.52	
12/4/2018			7.13		7.85			
1/15/2019							7.95	
3/11/2019							7.61	
5/23/2019	7.52		7.17		7.75		7.12	
7/17/2019							7.8	
8/23/2019							7.54	
11/7/2019		7.26		7.45		7.92		7.45
1/14/2020				7.43	1st Verification			
2/3/2020				7.3	2nd Verification			

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=8.288, Std. Dev.=0.4518, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9627, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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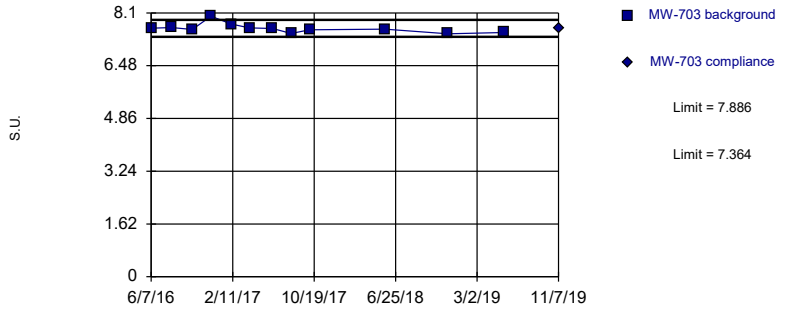
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.625, Std. Dev.=0.1448, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8441, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

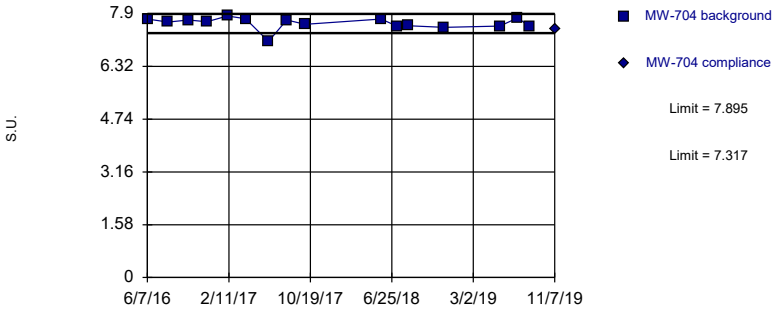
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube transformation): Mean=441.9, Std. Dev.=30.33, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8534, critical = 0.844. Kappa = 1.654 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

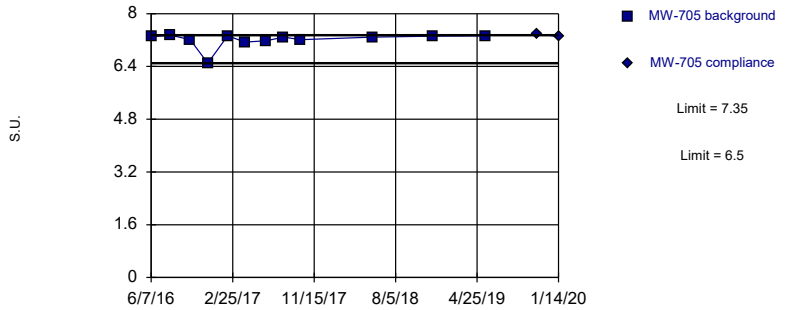
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

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 12 background values. Well-constituent pair annual alpha = 0.008684. Individual comparison alpha = 0.004347 (1 of 3).

Constituent: pH Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: pH Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

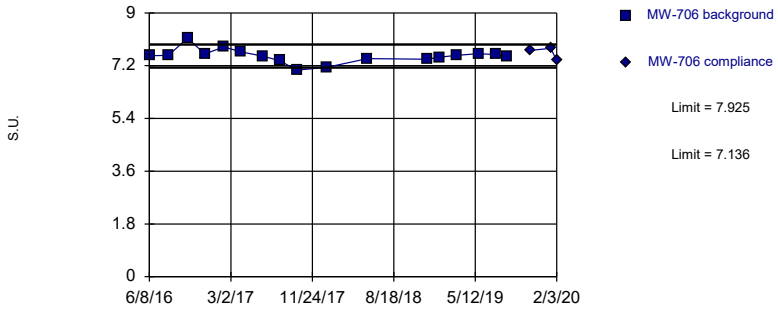
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-702	MW-702	MW-703	MW-703	MW-704	MW-704	MW-705	MW-705	
6/7/2016			7.63		7.74		7.3		
6/8/2016	8.86								
8/9/2016	9.12		7.65		7.65		7.35		
10/11/2016	8.25		7.59		7.71		7.21		
12/6/2016					7.66				
12/7/2016			8				6.5		
12/8/2016	8.07								
2/7/2017			7.76		7.83				
2/8/2017	8.09								
2/9/2017							7.33		
4/4/2017			7.64		7.75				
4/5/2017	8.52								
4/6/2017							7.14		
6/13/2017					7.07		7.18		
6/14/2017			7.62						
6/15/2017	7.84								
8/8/2017					7.71				
8/9/2017	7.87						7.29		
8/10/2017			7.47						
10/3/2017	7.6				7.58		7.21		
10/5/2017			7.58						
5/24/2018	8.26		7.6		7.74		7.29		
7/11/2018					7.53				
8/16/2018					7.54				
12/3/2018	8.49		7.46		7.49				
12/4/2018							7.32		
1/14/2019	7.95								
5/23/2019	8.82		7.5		7.53		7.33		
7/17/2019					7.78				
8/23/2019					7.5				
11/7/2019		8.75		7.63		7.45		7.38	
1/14/2020								7.31	1st Verification

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.531, Std. Dev.=0.2415, n=17. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9134, critical = 0.851. Kappa = 1.633 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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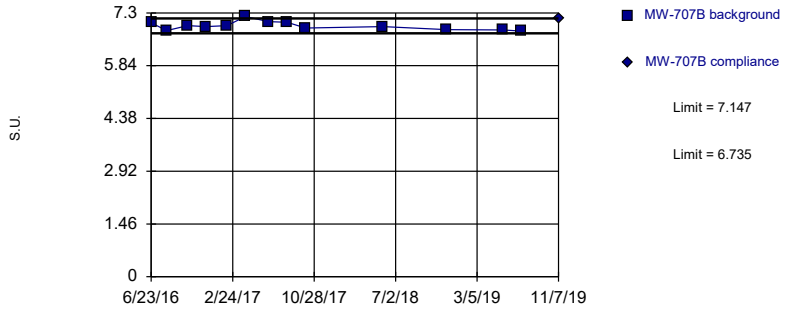
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.941, Std. Dev.=0.1167, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9309, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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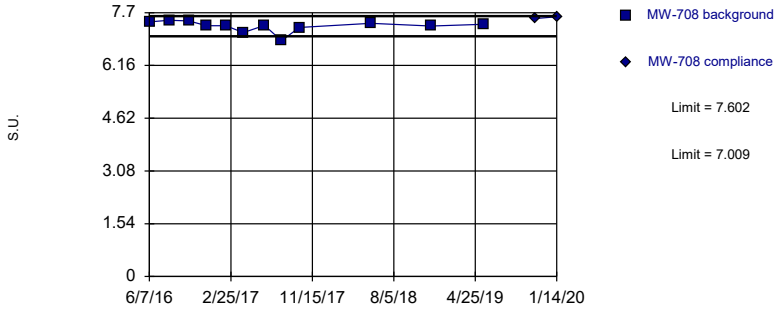
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.306, Std. Dev.=0.1645, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8257, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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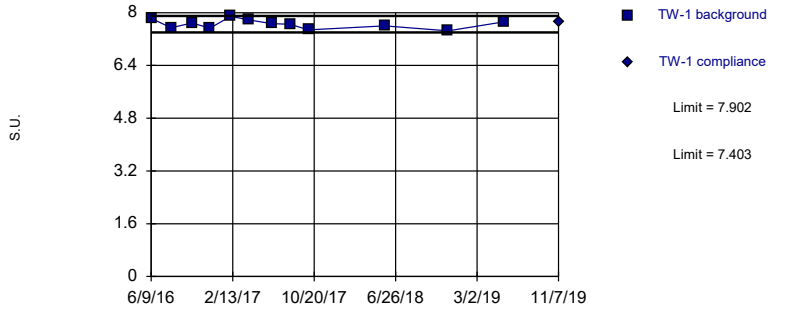
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.653, Std. Dev.=0.1387, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9714, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: pH Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

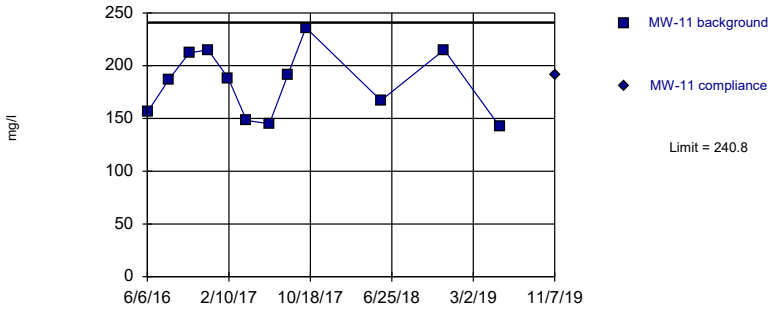
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-706	MW-706	MW-707B	MW-707B	MW-708	MW-708	TW-1	TW-1
6/7/2016					7.43			
6/8/2016	7.54							
6/9/2016							7.83	
6/23/2016			7.03					
8/9/2016	7.55		6.81				7.54	
8/10/2016					7.48			
10/11/2016	8.14		6.95				7.69	
10/12/2016					7.46			
12/6/2016	7.6		6.92				7.53	
12/9/2016					7.32			
2/7/2017	7.84		6.95				7.89	
2/9/2017					7.32			
4/4/2017	7.67		7.2				7.78	
4/6/2017					7.12			
6/13/2017	7.53		7.06				7.67	
6/14/2017					7.33			
8/8/2017			7.04		6.88		7.65	
8/9/2017	7.37							
10/3/2017			6.88				7.48	
10/4/2017	7.05				7.27			
1/9/2018	7.14							
5/23/2018					7.39			
5/24/2018	7.44		6.92				7.6	
12/4/2018	7.42		6.84		7.31		7.45	
1/15/2019	7.49							
3/11/2019	7.55							
5/23/2019	7.61		6.83		7.36		7.72	
7/17/2019	7.58		6.8					
8/23/2019	7.5							
11/7/2019		7.72		7.14		7.53		7.71
1/14/2020		7.79 Extra Sample				7.58 Extra Sample		
2/3/2020		7.38 Extra Sample						

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=183.5, Std. Dev.=31.82, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9268, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: SULFATE Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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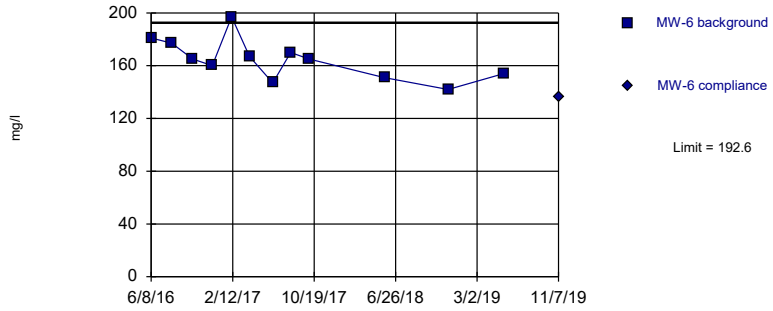
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=164.7, Std. Dev.=15.51, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9713, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: SULFATE Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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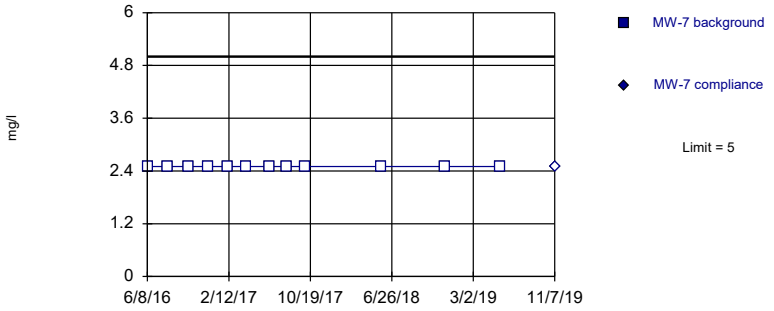
Hollow symbols indicate censored values.

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 = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

Constituent: SULFATE Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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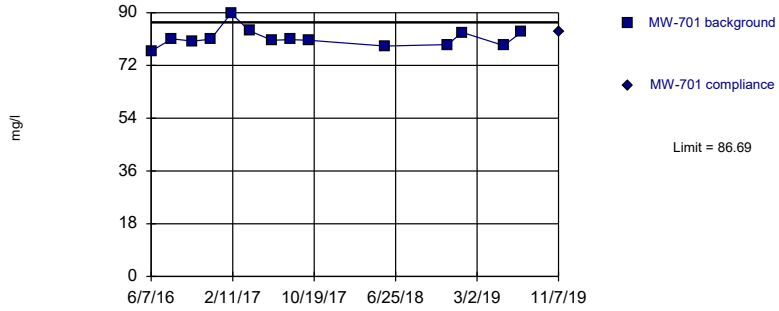
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=81.29, Std. Dev.=3.127, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8698, critical = 0.825. Kappa = 1.728 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: SULFATE Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: SULFATE Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

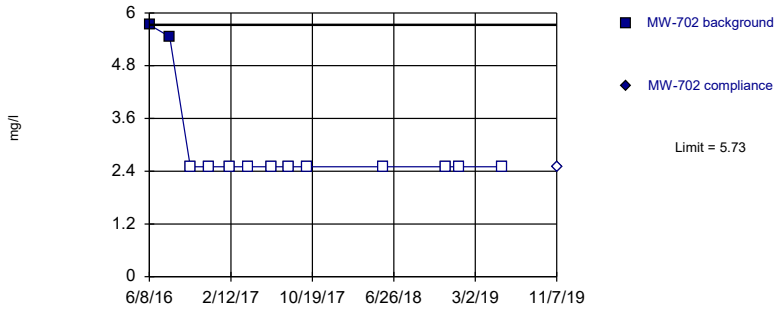
	MW-11	MW-11	MW-6	MW-6	MW-7	MW-7	MW-701	MW-701
6/6/2016	156							
6/7/2016							76.9	
6/8/2016			181		<5			
8/9/2016							81.1	
8/10/2016			177		<5			
8/11/2016	187							
10/11/2016							80.3	
10/12/2016	212							
10/13/2016			165		<5			
12/6/2016							80.9	
12/9/2016	215							
12/12/2016			160		<5			
2/7/2017							89.8	
2/8/2017					<5			
2/9/2017	188		197					
4/4/2017							83.8	
4/5/2017			167		<5			
4/6/2017	148							
6/13/2017							80.6	
6/15/2017	145		147		<5			
8/8/2017							80.8	
8/9/2017			170		<5			
8/10/2017	191							
10/3/2017							80.6	
10/5/2017	236		165		<5			
5/23/2018	167		151		<5			
5/24/2018							78.6	
12/3/2018	215						79.1	
12/4/2018			142		<5			
1/15/2019							83.3	
5/23/2019	142		154		<5		78.8	
7/17/2019							83.4	
11/7/2019		191		136		<5		83.7

Hollow symbols indicate censored values.

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 13 background values. 84.62% NDs. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3).

Constituent: SULFATE Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

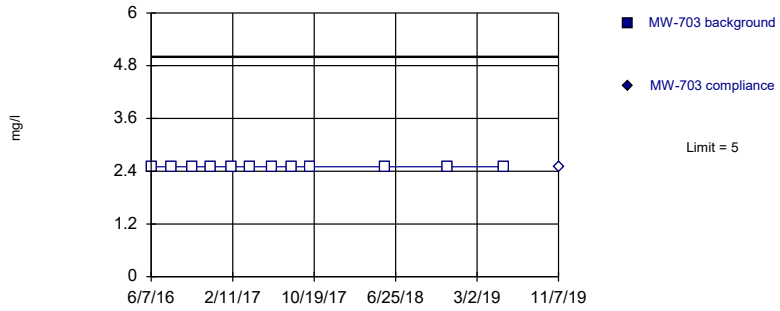
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

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 = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

Constituent: SULFATE Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

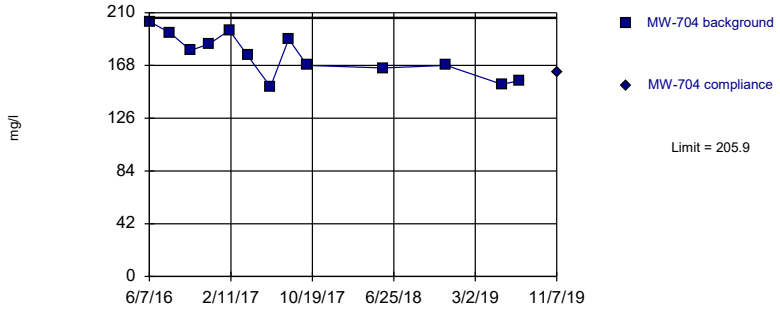
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=175.8, Std. Dev.=17.08, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9535, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: SULFATE Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

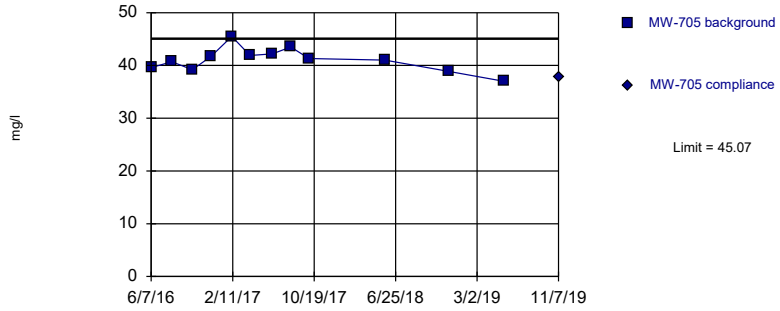
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=41.04, Std. Dev.=2.236, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.983, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: SULFATE Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: SULFATE Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

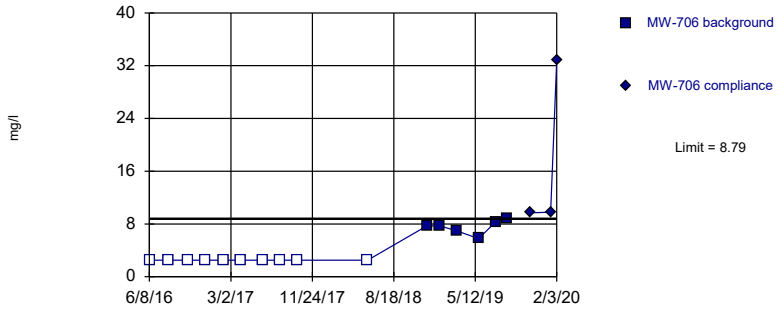
	MW-702	MW-702	MW-703	MW-703	MW-704	MW-704	MW-705	MW-705
6/7/2016			<5		203		39.6	
6/8/2016	5.73							
8/9/2016	5.46		<5		194		40.7	
10/11/2016	<5		<5		180		39.2	
12/6/2016			<5		185			
12/7/2016							41.7	
12/8/2016	<5							
2/7/2017			<5		196			
2/8/2017	<5							
2/9/2017							45.5	
4/4/2017			<5		176			
4/5/2017	<5							
4/6/2017							41.9	
6/13/2017					151		42.2	
6/14/2017			<5					
6/15/2017	<5							
8/8/2017					189			
8/9/2017	<5						43.5	
8/10/2017			<5					
10/3/2017	<5				168		41.3	
10/5/2017			<5					
5/24/2018	<5		<5		166		41	
12/3/2018	<5		<5		168			
12/4/2018							38.9	
1/14/2019	<5							
5/23/2019	<5		<5		153		37	
7/17/2019					156			
11/7/2019		<5		<5		163		37.9

Hollow symbols indicate censored values.

Exceeds 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 16 background values. 62.5% NDs. Well-constituent pair annual alpha = 0.002051. Individual comparison alpha = 0.001026 (1 of 3).

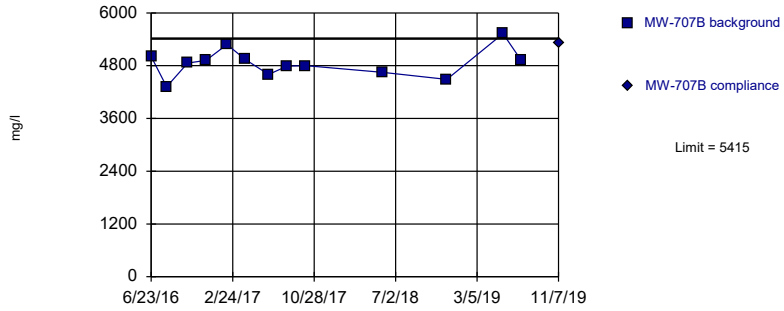
Constituent: SULFATE Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=4855, Std. Dev.=317.5, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9647, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

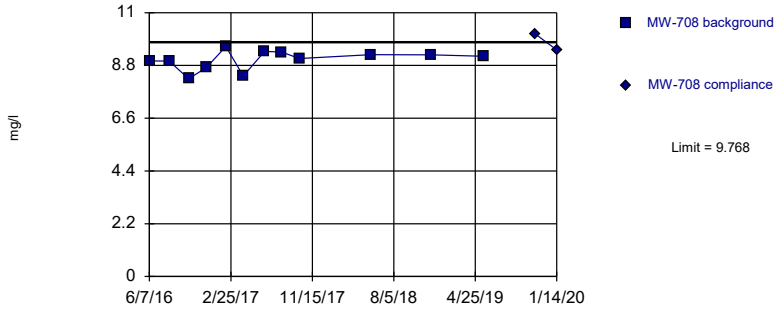
Constituent: SULFATE Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=9.032, Std. Dev.=0.4086, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.916, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

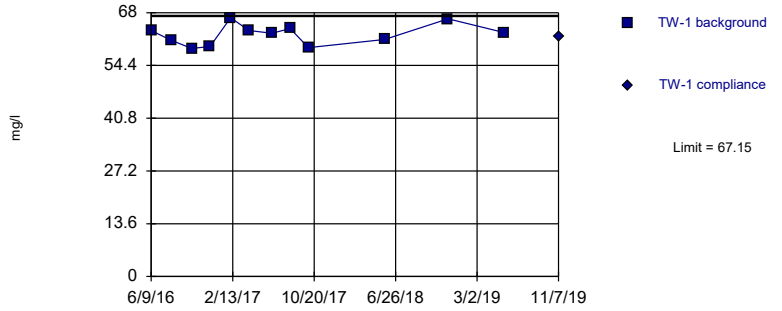
Constituent: SULFATE Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=62.38, Std. Dev.=2.648, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9322, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: SULFATE Analysis Run 2/21/2020 4:16 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: SULFATE Analysis Run 2/21/2020 4:19 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-706	MW-706	MW-707B	MW-707B	MW-708	MW-708	TW-1	TW-1
6/7/2016					8.99			
6/8/2016	<5							
6/9/2016							63.4	
6/23/2016			5010					
8/9/2016	<5		4320				60.9	
8/10/2016					8.98			
10/11/2016	<5		4860				58.8	
10/12/2016					8.24			
12/6/2016	<5		4920				59.3	
12/9/2016					8.72			
2/7/2017	<5		5280				66.7	
2/9/2017					9.59			
4/4/2017	<5		4940				63.4	
4/6/2017					8.36			
6/13/2017	<5		4600				62.7	
6/14/2017					9.38			
8/8/2017			4790		9.36		63.9	
8/9/2017	<5							
10/3/2017			4800				59	
10/4/2017	<5				9.09			
5/23/2018					9.25			
5/24/2018	<5		4650				61.1	
12/4/2018	7.69		4490		9.24		66.4	
1/15/2019	7.73							
3/11/2019	6.96							
5/23/2019	5.78		5530		9.18		62.9	
7/17/2019	8.27		4920					
8/23/2019	8.79							
11/7/2019		9.68		5330		10.1		61.9
1/14/2020		9.78 1st Verification				9.45 1st Verification		
2/3/2020		32.8 2nd Verification						

Prediction Limit

LaCygne Client: SCS Engineers Data: LaC GW Data Printed 2/21/2020, 4:19 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
BORON (mg/l)	MW-11	1.263	n/a	11/7/2019	0.846	No	13	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-6	1.249	n/a	11/7/2019	1.15	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-7	1.691	n/a	11/7/2019	1.59	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-701	1.108	n/a	11/7/2019	0.952	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-702	2.024	n/a	11/7/2019	1.41	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-703	1.944	n/a	11/7/2019	1.82	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-704	2.153	n/a	11/7/2019	1.97	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-705	2.318	n/a	11/7/2019	2.11	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-706	2.263	n/a	11/7/2019	2.09	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-707B	2.04	n/a	11/7/2019	1.86	No	12	0	n/a	0.002173	NP Intra (normality) ...
BORON (mg/l)	MW-708	1.537	n/a	11/7/2019	1.34	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	TW-1	1.731	n/a	11/7/2019	1.42	No	12	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-11	72.5	n/a	11/7/2019	58.2	No	12	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-6	116.3	n/a	11/7/2019	79.7	No	12	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-7	27.59	n/a	11/7/2019	20	No	12	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-701	44.57	n/a	11/7/2019	40.4	No	16	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-702	24.13	n/a	11/7/2019	2.73	No	13	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-703	23.18	n/a	11/7/2019	17.6	No	12	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-704	35.87	n/a	11/7/2019	21	No	13	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-705	43.56	n/a	11/7/2019	26.7	No	12	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-706	35.66	n/a	11/7/2019	22.5	No	14	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-707B	422.2	n/a	11/7/2019	386	No	13	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-708	34.37	n/a	11/7/2019	27.7	No	12	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	TW-1	37.96	n/a	11/7/2019	23.3	No	12	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-11	135.8	n/a	11/7/2019	122	No	12	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-6	227.2	n/a	11/7/2019	197	No	12	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-7	112.8	n/a	11/7/2019	96.2	No	12	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-701	56.12	n/a	11/7/2019	46.2	No	14	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-702	50.24	n/a	11/7/2019	40.7	No	13	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-703	117	n/a	11/7/2019	111	No	12	0	x^5	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-704	88.89	n/a	11/7/2019	84.5	No	16	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-705	141.4	n/a	11/7/2019	134	No	12	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-706	302.2	n/a	11/7/2019	240	No	13	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-707B	237.8	n/a	11/7/2019	169	No	13	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-708	48.87	n/a	11/7/2019	45	No	12	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	TW-1	46.26	n/a	11/7/2019	40.1	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-11	1144	n/a	11/7/2019	908	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-6	1287	n/a	11/7/2019	1090	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-7	970.4	n/a	11/7/2019	848	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-701	648.3	n/a	11/7/2019	521	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-702	811.9	n/a	11/7/2019	193	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-703	982	n/a	11/7/2019	866	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-704	1303	n/a	11/7/2019	1110	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-705	1095	n/a	11/7/2019	914	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-706	1560	n/a	11/7/2019	1160	No	12	0	n/a	0.002173	NP Intra (normality) ...
DISSOLVED SOLIDS (mg/l)	MW-707B	9261	n/a	11/7/2019	7920	No	12	0	x^2	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-708	881	n/a	11/7/2019	607	No	12	0	n/a	0.002173	NP Intra (normality) ...
DISSOLVED SOLIDS (mg/l)	TW-1	1109	n/a	11/7/2019	956	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-11	0.6247	n/a	11/7/2019	0.561	No	13	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-6	1.75	n/a	11/7/2019	0.615	No	12	0	n/a	0.002173	NP Intra (normality) ...

Prediction Limit

LaCygne Client: SCS Engineers Data: LaC GW Data Printed 2/21/2020, 4:20 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
FLUORIDE (mg/l)	MW-7	1.382	n/a	11/7/2019	1.34	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-701	0.8735	n/a	11/7/2019	0.703	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-702	1.66	n/a	11/7/2019	1.58	No	13	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-703	1.584	n/a	11/7/2019	1.56	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-704	0.9764	n/a	11/7/2019	0.953	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-705	1.12	n/a	11/7/2019	1.05	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-706	1.28	n/a	11/7/2019	1.18	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-707B	0.5267	n/a	11/7/2019	0.442	No	12	0	sqrt(x)	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-708	0.7235	n/a	11/7/2019	0.601	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	TW-1	0.4756	n/a	11/7/2019	0.411	No	12	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-11	7.578	7.188	11/7/2019	7.26	No	13	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-6	7.336	7.051	2/3/2020	7.3	No	12	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-7	8.001	7.629	11/7/2019	7.92	No	12	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-701	8.024	7.188	11/7/2019	7.45	No	16	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-702	9.085	7.491	11/7/2019	8.75	No	13	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-703	7.886	7.364	11/7/2019	7.63	No	12	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-704	7.895	7.317	11/7/2019	7.45	No	16	0	x^3	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-705	7.35	6.5	1/14/2020	7.31	No	12	0	n/a	0.004347	NP Intra (normality) ...
pH (S.U.)	MW-706	7.925	7.136	2/3/2020	7.38	No	17	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-707B	7.147	6.735	11/7/2019	7.14	No	13	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-708	7.602	7.009	1/14/2020	7.58	No	12	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	TW-1	7.902	7.403	11/7/2019	7.71	No	12	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	MW-11	240.8	n/a	11/7/2019	191	No	12	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	MW-6	192.6	n/a	11/7/2019	136	No	12	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	MW-7	5	n/a	11/7/2019	2.5ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
SULFATE (mg/l)	MW-701	86.69	n/a	11/7/2019	83.7	No	14	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	MW-702	5.73	n/a	11/7/2019	2.5ND	No	13	84.62	n/a	0.001886	NP Intra (NDs) 1 of 3
SULFATE (mg/l)	MW-703	5	n/a	11/7/2019	2.5ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
SULFATE (mg/l)	MW-704	205.9	n/a	11/7/2019	163	No	13	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	MW-705	45.07	n/a	11/7/2019	37.9	No	12	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	**MW-706**	**8.79**	**n/a**	**2/3/2020**	**32.8**	**Yes**	**16**	**62.5**	**n/a**	**0.001026**	**NP Intra (NDs) 1 of 3**
SULFATE (mg/l)	MW-707B	5415	n/a	11/7/2019	5330	No	13	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	MW-708	9.768	n/a	1/14/2020	9.45	No	12	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	TW-1	67.15	n/a	11/7/2019	61.9	No	12	0	No	0.000...	Param Intra 1 of 3

ATTACHMENT 2

Sanitas™ Configuration Settings

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

Exclude data flags: i

Observations with flags containing the following characters will be deselected: 'i', 'l',

Data Reading Options

- (•) Individual Observations
- ( ) Mean of Each: ( ) Month
- ( ) Median of Each: ( ) Season

Non-Detect / Trace Handling...

Setup Seasons...

[ ] Automatically Process Resamples...

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

- [ ] Black and White Output
- [x] Four Plots Per Page
  - [x] Always Combine Data Pages...
  - [x] Include Tick Marks on Data Page
  - [ ] Use Constituent Name for Graph Title
- [ ] Draw Border Around Text Reports and Data Pages
- [x] Enlarge/Reduce Fonts (Graphs): 100%
- [x] Enlarge/Reduce Fonts (Data/Text Reports): 100%
- [x] Wide Margins (on reports without explicit setting)
- [ ] Use CAS# (Not Const. Name)
- [ ] Truncate File Names to 20 Characters
- [ ] Include Limit Lines when found in Database...
- [x] Show Deselected Data on Time Series Lighter
- [ ] Show Deselected Data on all Data Pages Lighter

Setup Symbols and Colors...

- [x] Prompt to Overwrite/Append Summary Tables
- [ ] Round Limits to 2 Sig. Digits (when not set in data file)
- [ ] User-Set Scale
- [x] Indicate Background Data
- [ ] Show Exact Dates
- [ ] Thick Plot Lines

Zoom Factor: 200%

Output Decimal Precision

- ( ) Less Precision
- (•) Normal Precision
- ( ) More Precision

- [x] Store Print Jobs in Multiple Constituent Mode

Store All Print Jobs...

Printer: Adobe PDF

Printers...

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

☐ Use Modified Alpha...

☑ Test Residuals For Normality (Parametric test only) using Shapiro-Wilk/Francia at Alpha = 0.01

☐ Continue Parametric if Unable to Normalize

Transformation (Parametric test only)

- ◉ Use Ladder of Powers
- ○ Natural Log or No Transformation
- ○ Never Transform
- ○ Use Specific Transformation:

☐ Use Best W Statistic

☐ Plot Transformed Values

Use Non-Parametric Test (Sen's Slope/Mann-Kendall) when Non-Detects Percent > 75

☐ Include 95. % Confidence Interval around Trend Line

☐ Automatically Remove Outliers (Parametric test only)

Note: there is no "Always Use Non-Parametric" checkbox on this tab because, for consistency with prior versions, Sen's Slope / Mann-Kendall (the non-parametric alternative) is available as a report in its own right, under Analysis->Intrawell->Trend.

Data | Output | Trend Test | Control Cht | **Prediction Lim** | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

☑ 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 _____ when NDs % > 50

☐ Use Poisson Prediction Limit when Non-Detects Percent > 0

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 α

Statistical Evaluations per Year: 2

Constituents Analyzed: 7

Downgradient (Compliance) Wells: 9

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)

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

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 α= 0.05 or if n > 22 Rosner's at α= 0.01 [x] Use EPA Screening to establish Suspected Outliers
- ( ) Tukey's Outlier Screening, with IQR Multiplier = 3.0 [ ] Use Ladder of Powers to achieve Best W Stat
- [x] Test For Normality using Shapiro-Wilk/Francia at Alpha = 0.1
  - (•) Stop if Non-Normal
  - ( ) Continue with Parametric Test if Non-Normal
  - ( ) Tukey's if Non-Normal, with IQR Multiplier = 3.0 [x] Use Ladder of Powers to achieve Best W Stat
- [x] No Outlier If Less Than 3.0 Times Median
- [ ] Apply Rules found in Ohio Guidance Document 0715
- [ ] Combine Background Wells on the Outlier Report...

Piper, Stiff Diagram

- [ ] Combine Wells
- [ ] Combine Dates
- (•) Use Default Constituent Names
- ( ) Use Constituent Definition File Edit
- [x] Label Constituents
- [x] Label Axes
- [x] Note Cation-Anion Balance (Piper only)

ATTACHMENT 2-2

Spring 2020 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

September 28, 2020
Revised October 12, 2020

To: La Cygne Generating Station
25166 East 2200 Road
La Cygne, Kansas 66040
Evergy Metro, Inc.

From: SCS Engineers

RE: Revision 1
Determination of Statistically Significant Increases –
Upper AQC Impoundment
Spring 2020 Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the Upper AQC Impoundment at the La Cygne 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 19, 2020. Review and validation of the results from the May 2020 Detection Monitoring Event was completed on June 29, 2020, 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 13, 2020 and August 27, 2020.

The completed statistical evaluation identified two Appendix III constituents above their respective prediction limits established for monitoring wells MW-704, MW-706 and TW-1.

Constituent/Monitoring Well	*UPL	Observation May 19, 2020	1st Verification July 13, 2020	2nd Verification August 27, 2020
Chloride				
MW-704	88.89	93	90.1	92.2
Sulfate				
MW-706	8.79	24.6	21.3	20.7
TW-1	67.15	69.1	69.4	72.4

*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 three SSIs above the background prediction limit for chloride for MW-704, and sulfate for monitoring wells MW-706 and TW-1.

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 results, 1st verification re-sample results (when applicable), 2nd verification re-sample results (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	10-12-2020	No	Revised text to indicate two Appendix III constituents were identified above their respective prediction limits instead of one. Table below text was correct.

La Cygne Generating Station
Determination of Statistically Significant Increases
Upper AQC Impoundment
September 28, 2020
Revised October 12, 2020

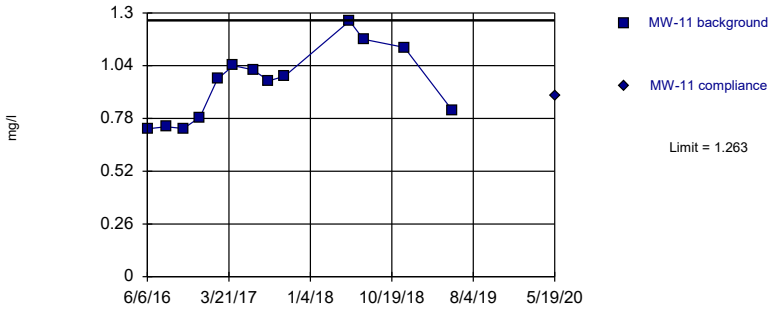
ATTACHMENT 1

Sanitas™ Output

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.95, Std. Dev.=0.1775, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9268, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 9/9/2020 10:52 PM View: Upper AQC III

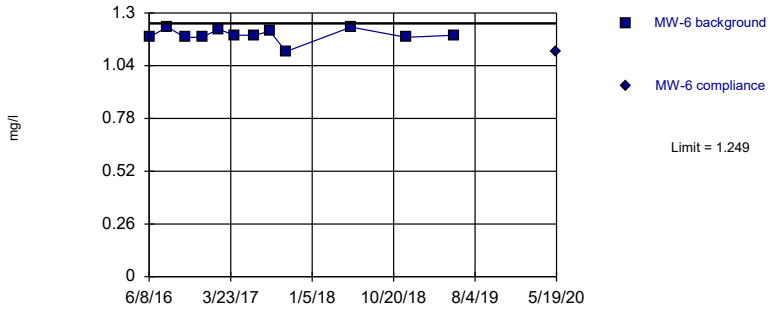
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.191, Std. Dev.=0.03204, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.84, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 9/9/2020 10:52 PM View: Upper AQC III

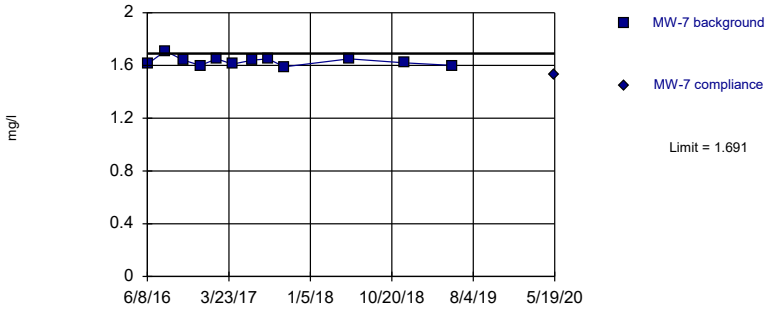
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.631, Std. Dev.=0.03315, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8907, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 9/9/2020 10:52 PM View: Upper AQC III

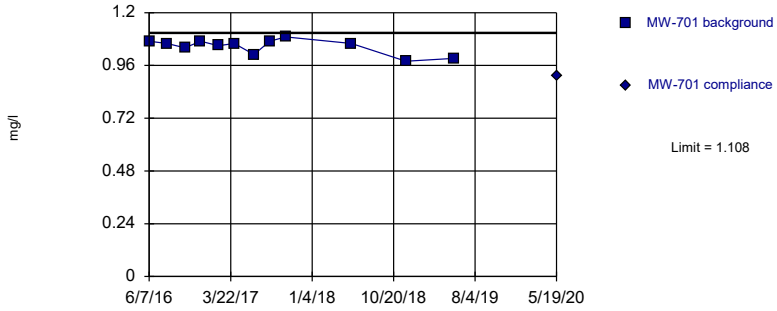
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.046, Std. Dev.=0.03438, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8717, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 9/9/2020 10:52 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: BORON Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

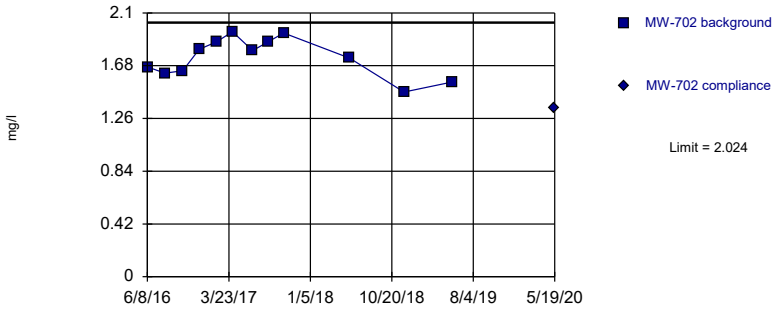
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-11	MW-11	MW-6	MW-6	MW-7	MW-7	MW-701	MW-701
6/6/2016	0.729							
6/7/2016							1.07	
6/8/2016			1.18		1.61			
8/9/2016							1.06	
8/10/2016			1.23		1.71			
8/11/2016	0.739							
10/11/2016							1.04	
10/12/2016	0.73							
10/13/2016			1.18		1.64			
12/6/2016							1.07	
12/9/2016	0.786							
12/12/2016			1.18		1.6			
2/7/2017							1.05	
2/8/2017					1.65			
2/9/2017	0.974		1.22					
4/4/2017							1.06	
4/5/2017			1.19		1.61			
4/6/2017	1.04							
6/13/2017							1.01	
6/15/2017	1.02		1.19		1.64			
8/8/2017							1.07	
8/9/2017			1.21		1.65			
8/10/2017	0.965							
10/3/2017							1.09	
10/5/2017	0.988		1.11		1.59			
5/23/2018	1.26		1.23		1.65			
5/24/2018							1.06	
7/11/2018	1.17							
12/3/2018	1.13						0.979	
12/4/2018			1.18		1.62			
5/23/2019	0.819		1.19		1.6		0.992	
5/19/2020		0.891		1.11		1.53		0.913

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.744, Std. Dev.=0.1551, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9541, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 9/9/2020 10:52 PM View: Upper AQC III

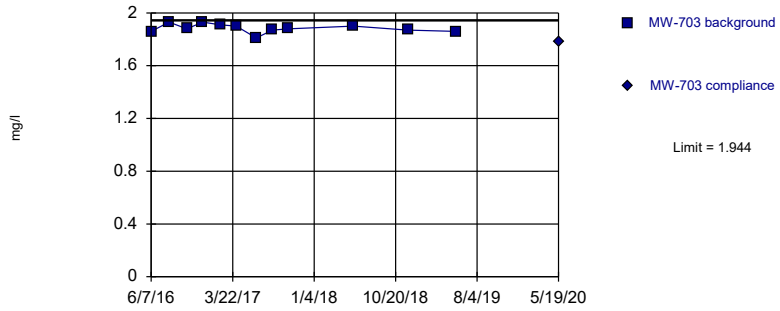
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.883, Std. Dev.=0.03367, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9397, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 9/9/2020 10:52 PM View: Upper AQC III

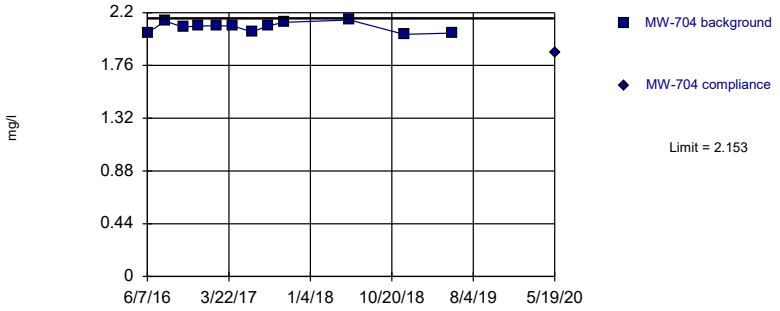
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.079, Std. Dev.=0.04078, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9087, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 9/9/2020 10:52 PM View: Upper AQC III

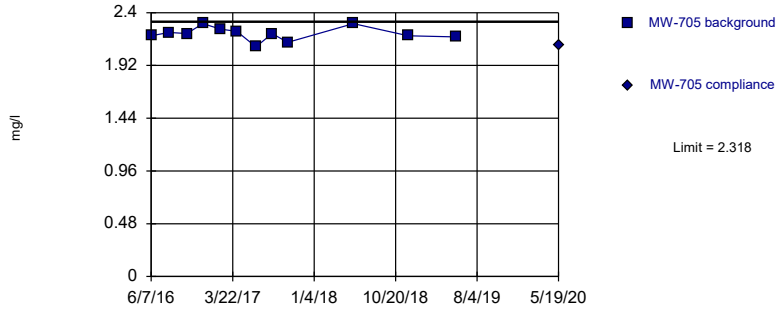
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.208, Std. Dev.=0.06088, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9524, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 9/9/2020 10:52 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: BORON Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

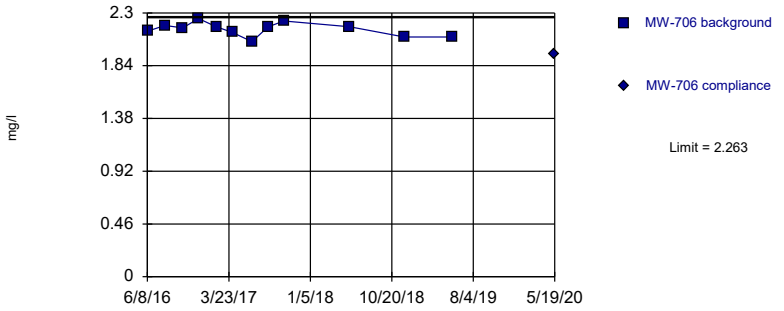
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-702	MW-702	MW-703	MW-703	MW-704	MW-704	MW-705	MW-705
6/7/2016			1.86		2.03		2.19	
6/8/2016	1.67							
8/9/2016	1.62		1.93		2.13		2.22	
10/11/2016	1.64		1.88		2.08		2.21	
12/6/2016			1.93		2.09			
12/7/2016							2.3	
12/8/2016	1.81							
2/7/2017			1.91		2.09			
2/8/2017	1.87							
2/9/2017							2.25	
4/4/2017			1.9		2.09			
4/5/2017	1.95							
4/6/2017							2.23	
6/13/2017					2.04		2.09	
6/14/2017			1.81					
6/15/2017	1.8							
8/8/2017					2.09			
8/9/2017	1.87						2.21	
8/10/2017			1.87					
10/3/2017	1.94				2.12		2.13	
10/5/2017			1.88					
5/24/2018	1.74		1.9		2.14		2.3	
12/3/2018	1.47		1.87		2.02			
12/4/2018							2.19	
5/23/2019	1.55		1.86		2.03		2.18	
5/19/2020		1.34		1.78		1.87		2.1

Within Limit

Prediction Limit

Intrawell Parametric



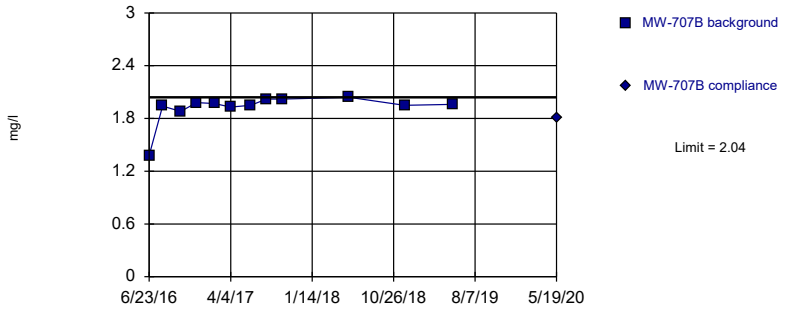
Background Data Summary: Mean=2.157, Std. Dev.=0.05898, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9577, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 9/9/2020 10:52 PM View: Upper AQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Non-parametric



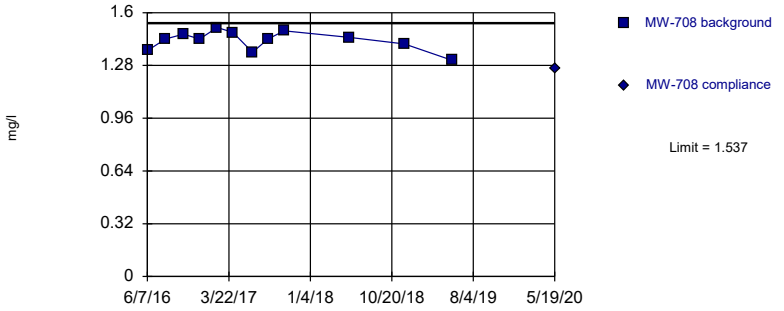
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

Constituent: BORON Analysis Run 9/9/2020 10:52 PM View: Upper AQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



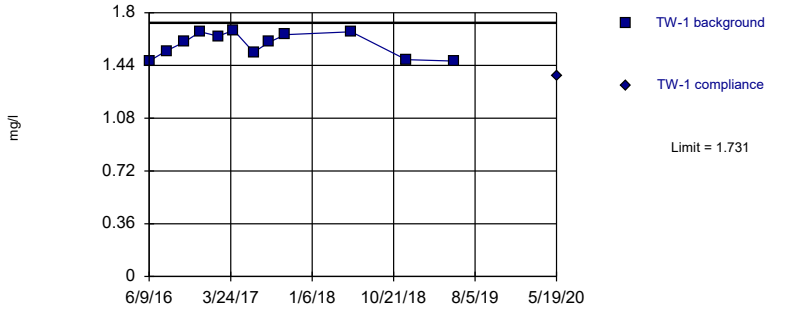
Background Data Summary: Mean=1.431, Std. Dev.=0.05885, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9376, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 9/9/2020 10:52 PM View: Upper AQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.583, Std. Dev.=0.08184, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.878, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: BORON Analysis Run 9/9/2020 10:52 PM View: Upper AQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: BORON Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

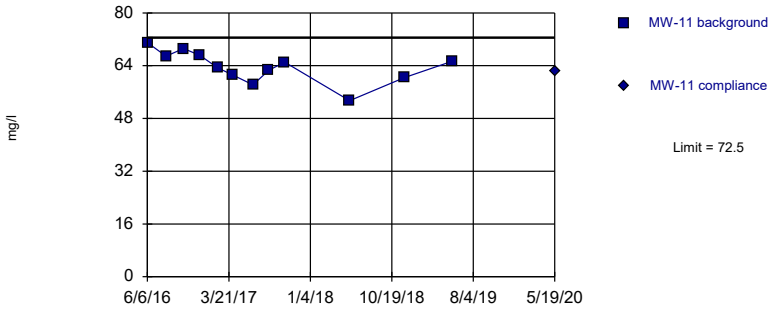
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-706	MW-706	MW-707B	MW-707B	MW-708	MW-708	TW-1	TW-1
6/7/2016					1.37			
6/8/2016	2.14							
6/9/2016							1.47	
6/23/2016			1.38					
8/9/2016	2.19		1.94				1.54	
8/10/2016					1.44			
10/11/2016	2.17		1.88				1.6	
10/12/2016					1.47			
12/6/2016	2.25		1.98				1.67	
12/9/2016					1.44			
2/7/2017	2.18		1.97				1.64	
2/9/2017					1.51			
4/4/2017	2.13		1.93				1.68	
4/6/2017					1.48			
6/13/2017	2.05		1.95				1.53	
6/14/2017					1.36			
8/8/2017			2.02		1.44		1.6	
8/9/2017	2.18							
10/3/2017			2.02				1.65	
10/4/2017	2.23				1.49			
5/23/2018					1.45			
5/24/2018	2.18		2.04				1.67	
12/4/2018	2.09		1.95		1.41		1.48	
5/23/2019	2.09		1.96		1.31		1.47	
5/19/2020		1.94		1.81		1.26		1.37

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=63.65, Std. Dev.=4.912, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.976, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

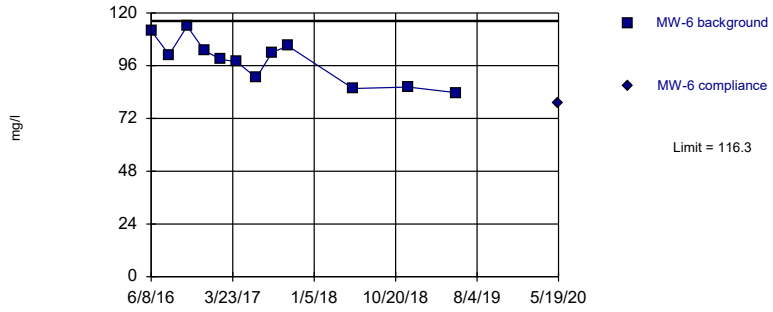
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=98.32, Std. Dev.=10.01, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.94, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

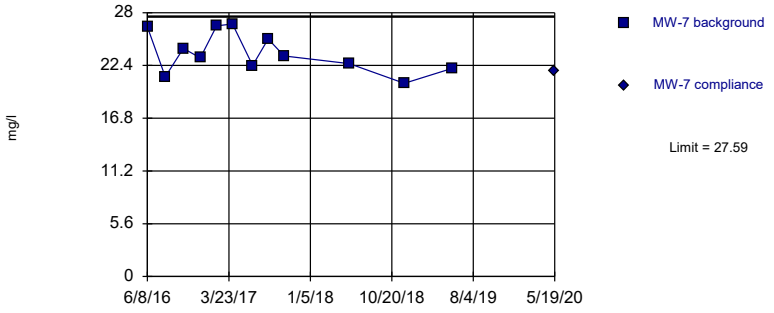
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=23.73, Std. Dev.=2.146, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9333, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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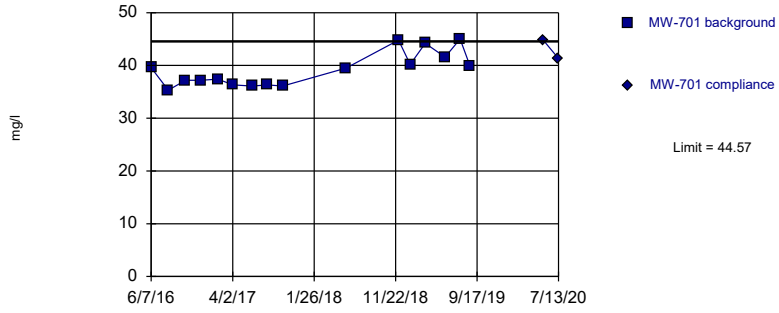
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=39.17, Std. Dev.=3.266, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8786, critical = 0.844. Kappa = 1.654 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CALCIUM Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

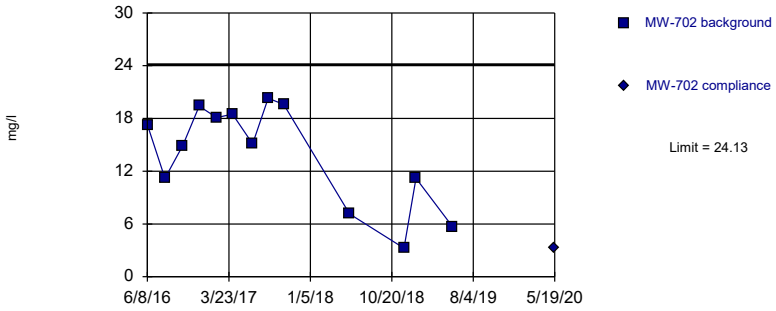
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-11	MW-11	MW-6	MW-6	MW-7	MW-7	MW-701	MW-701	
6/6/2016	71								
6/7/2016							39.6		
6/8/2016			112		26.5				
8/9/2016							35.3		
8/10/2016			101		21.2				
8/11/2016	66.9								
10/11/2016							37.2		
10/12/2016	69.2								
10/13/2016			114		24.2				
12/6/2016							37.2		
12/9/2016	67.1								
12/12/2016			103		23.2				
2/7/2017							37.4		
2/8/2017					26.6				
2/9/2017	63.4		98.8						
4/4/2017							36.3		
4/5/2017			97.9		26.8				
4/6/2017	61.1								
6/13/2017							36.1		
6/15/2017	58.2		90.5		22.4				
8/8/2017							36.3		
8/9/2017			102		25.2				
8/10/2017	62.6								
10/3/2017							36.1		
10/5/2017	65.1		105		23.4				
5/23/2018	53.4		85.6		22.6				
5/24/2018							39.5		
12/3/2018	60.4						44.8		
12/4/2018			86.3		20.5				
1/15/2019							40.2		
3/11/2019							44.2		
5/23/2019	65.4		83.7		22.1		41.6		
7/17/2019							45		
8/23/2019							39.9		
5/19/2020		62.2		78.8		21.8		44.7	
7/13/2020								41.3	1st Verification Sample

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=13.97, Std. Dev.=5.757, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8941, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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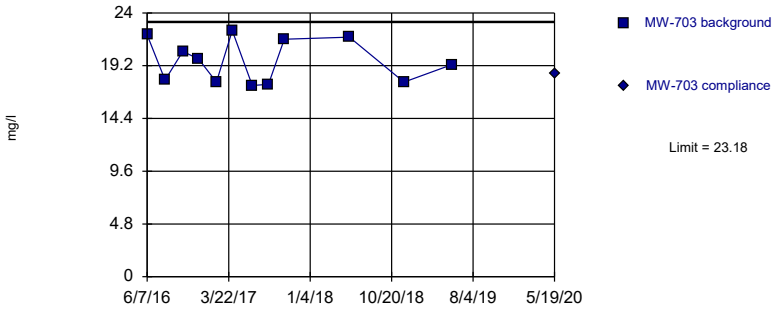
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=19.63, Std. Dev.=1.971, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8622, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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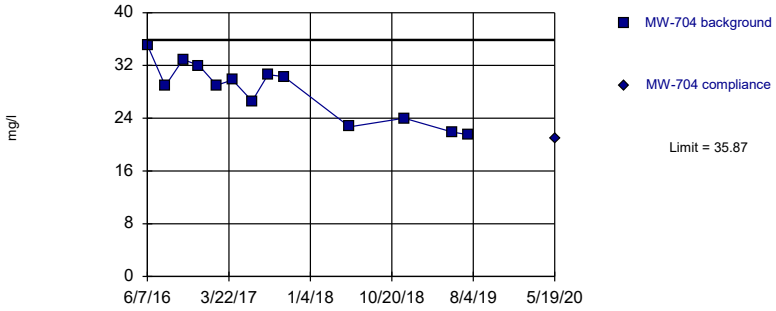
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=28.1, Std. Dev.=4.405, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9368, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

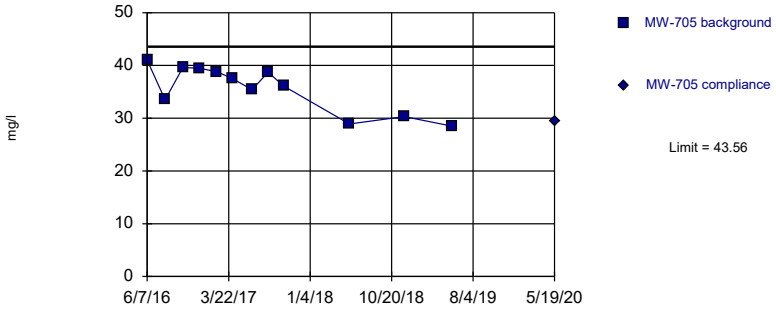
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=35.65, Std. Dev.=4.389, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.892, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CALCIUM Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

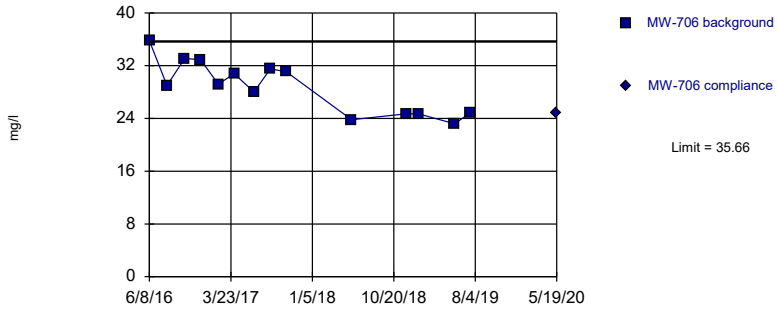
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-702	MW-702	MW-703	MW-703	MW-704	MW-704	MW-705	MW-705
6/7/2016			22		35.1		41	
6/8/2016	17.3							
8/9/2016	11.2		17.9		28.9		33.5	
10/11/2016	14.9		20.5		32.9		39.6	
12/6/2016			19.8		32			
12/7/2016							39.5	
12/8/2016	19.4							
2/7/2017			17.7		29			
2/8/2017	18.1							
2/9/2017							38.8	
4/4/2017			22.4		29.8			
4/5/2017	18.5							
4/6/2017							37.5	
6/13/2017					26.6		35.4	
6/14/2017			17.4					
6/15/2017	15.1							
8/8/2017					30.6			
8/9/2017	20.3						38.7	
8/10/2017			17.5					
10/3/2017	19.6				30.3		36.1	
10/5/2017			21.6					
5/24/2018	7.13		21.8		22.7		28.9	
12/3/2018	3.24		17.7		24			
12/4/2018							30.3	
1/14/2019	11.2							
5/23/2019	5.7		19.3		21.9		28.5	
7/17/2019					21.5			
5/19/2020		3.33		18.5		20.9		29.4

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=28.76, Std. Dev.=3.997, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9349, critical = 0.825. Kappa = 1.728 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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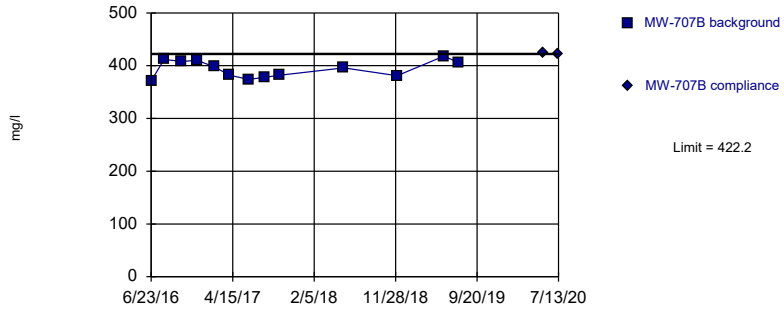
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=393.5, Std. Dev.=16.22, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9122, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

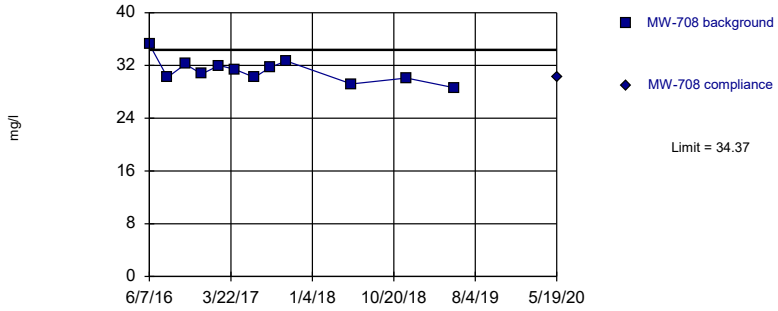
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=31.18, Std. Dev.=1.768, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9496, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

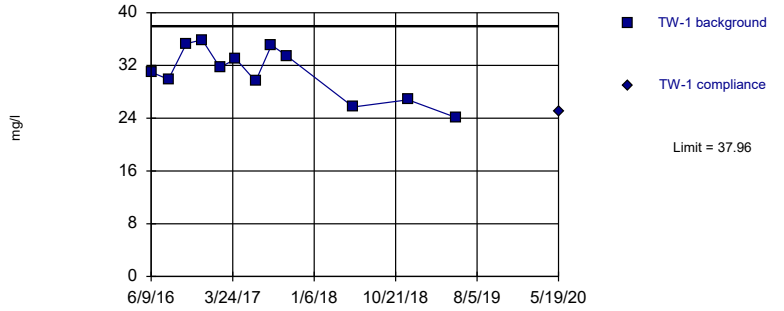
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=30.96, Std. Dev.=3.885, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9425, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CALCIUM Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CALCIUM Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

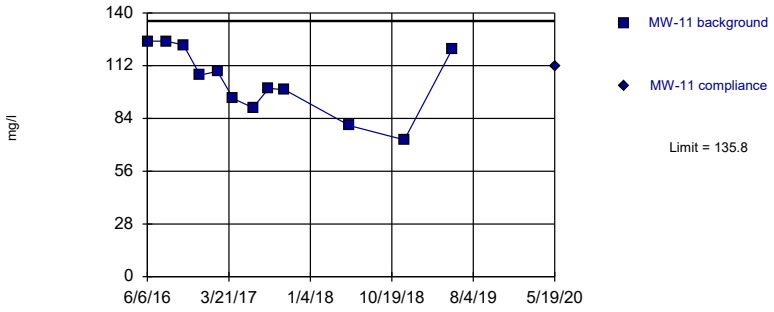
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-706	MW-706	MW-707B	MW-707B	MW-708	MW-708	TW-1	TW-1
6/7/2016					35.2			
6/8/2016	35.8							
6/9/2016							31	
6/23/2016			371					
8/9/2016	29		412				29.9	
8/10/2016					30.2			
10/11/2016	33.1		408				35.3	
10/12/2016					32.2			
12/6/2016	32.9		410				35.9	
12/9/2016					30.7			
2/7/2017	29.2		398				31.7	
2/9/2017					32			
4/4/2017	30.8		382				33	
4/6/2017					31.4			
6/13/2017	28		374				29.6	
6/14/2017					30.2			
8/8/2017			378		31.7		35.1	
8/9/2017	31.5							
10/3/2017			382				33.4	
10/4/2017	31.1				32.7			
5/23/2018					29.2			
5/24/2018	23.8		396				25.7	
12/4/2018	24.7		381		30.1		26.8	
1/15/2019	24.7							
5/23/2019	23.2		418		28.6		24.1	
7/17/2019	24.8		406					
5/19/2020		24.8		424		30.2		25
7/13/2020				421	1st Verification Sample			

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=103.9, Std. Dev.=17.71, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.932, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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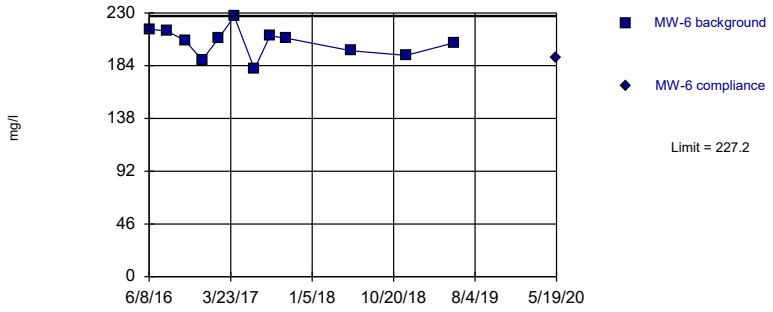
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=204.4, Std. Dev.=12.67, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9786, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

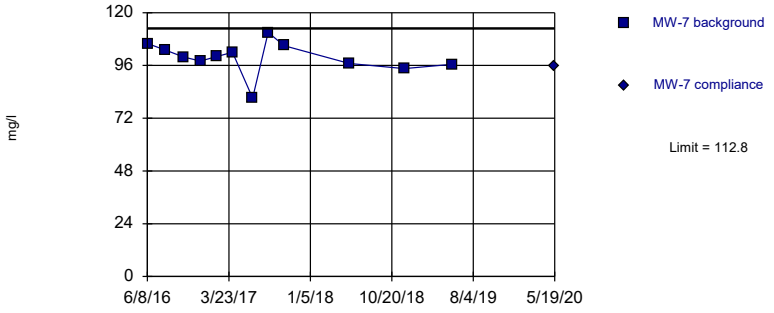
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=99.51, Std. Dev.=7.389, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9149, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

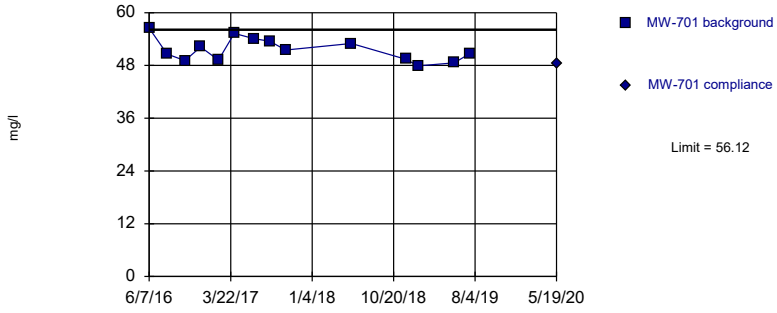
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=51.54, Std. Dev.=2.649, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9537, critical = 0.825. Kappa = 1.728 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CHLORIDE Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

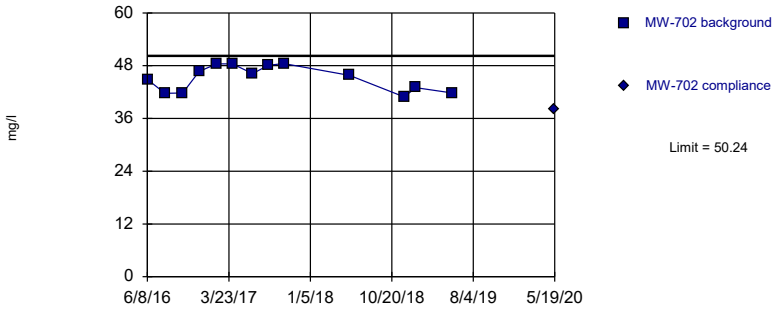
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-11	MW-11	MW-6	MW-6	MW-7	MW-7	MW-701	MW-701
6/6/2016	125							
6/7/2016							56.5	
6/8/2016			216		106			
8/9/2016							50.6	
8/10/2016			214		103			
8/11/2016	125							
10/11/2016							49.1	
10/12/2016	123							
10/13/2016			206		99.9			
12/6/2016							52.2	
12/9/2016	107							
12/12/2016			189		98			
2/7/2017							49.2	
2/8/2017					100			
2/9/2017	109		208					
4/4/2017							55.3	
4/5/2017			227		102			
4/6/2017	94.5							
6/13/2017							54.1	
6/15/2017	89.7		181		81.2			
8/8/2017							53.5	
8/9/2017			210		111			
8/10/2017	100							
10/3/2017							51.5	
10/5/2017	99.2		208		105			
5/23/2018	80.2		197		96.9			
5/24/2018							53	
12/3/2018	72.6						49.4	
12/4/2018			193		94.6			
1/15/2019							47.9	
5/23/2019	121		204		96.5		48.6	
7/17/2019							50.7	
5/19/2020		112		191		95.9		48.3

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=45.09, Std. Dev.=2.916, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8743, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

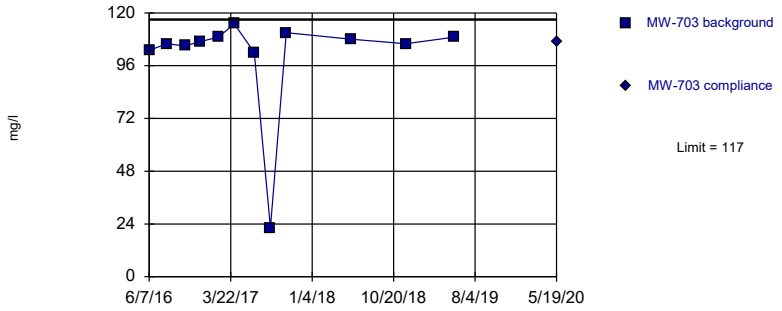
Constituent: CHLORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on x^5 transformation): Mean=1.3e10, Std. Dev.=4.8e9, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8112, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

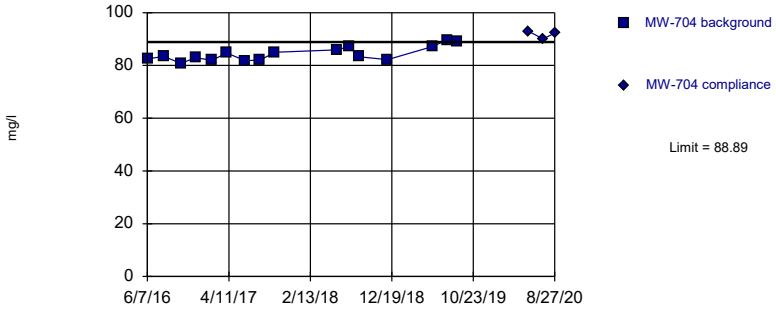
Constituent: CHLORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=84.36, Std. Dev.=2.74, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9076, critical = 0.844. Kappa = 1.654 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

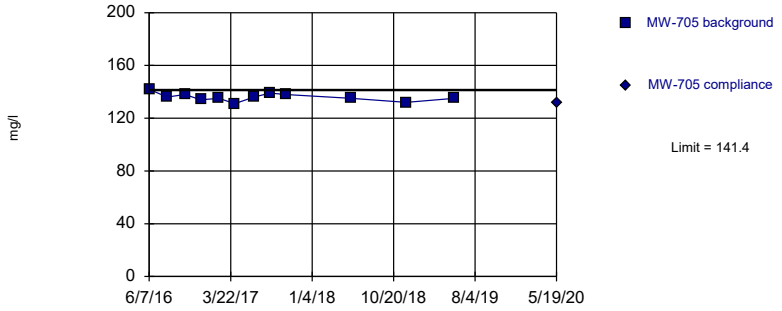
Constituent: CHLORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=135.9, Std. Dev.=3.029, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9687, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CHLORIDE Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

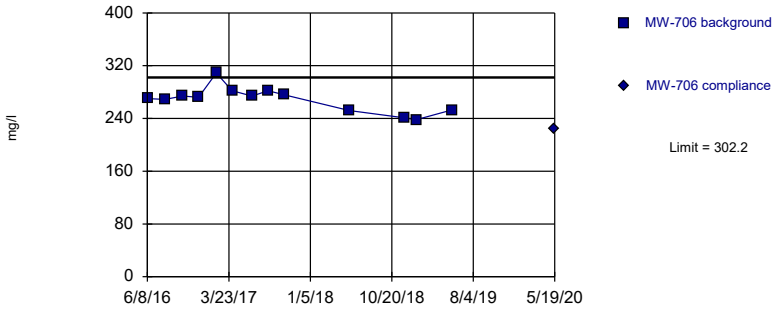
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-702	MW-702	MW-703	MW-703	MW-704	MW-704	MW-705	MW-705
6/7/2016			103		82.5		142	
6/8/2016	44.9							
8/9/2016	41.7		106		83.4		136	
10/11/2016	41.8		105		80.8		138	
12/6/2016			107		82.9			
12/7/2016							134	
12/8/2016	46.7							
2/7/2017			109		82			
2/8/2017	48.4							
2/9/2017							135	
4/4/2017			115		84.7			
4/5/2017	48.4							
4/6/2017							131	
6/13/2017					81.8		136	
6/14/2017			102					
6/15/2017	46.2							
8/8/2017					82.1			
8/9/2017	48.1						139	
8/10/2017			22.3					
10/3/2017	48.5				85		138	
10/5/2017			111					
5/24/2018	45.8		108		85.9		135	
7/11/2018					87.1			
8/16/2018					83.3			
12/3/2018	40.9		106		82.2			
12/4/2018							132	
1/14/2019	43							
5/23/2019	41.8		109		87.2		135	
7/17/2019					89.7			
8/23/2019					89.2			
5/19/2020		38		107		93		132
7/13/2020						90.1 1st Verification Sample		
8/27/2020						92.2 2nd Verification Sample		

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=268.6, Std. Dev.=19.01, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9333, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

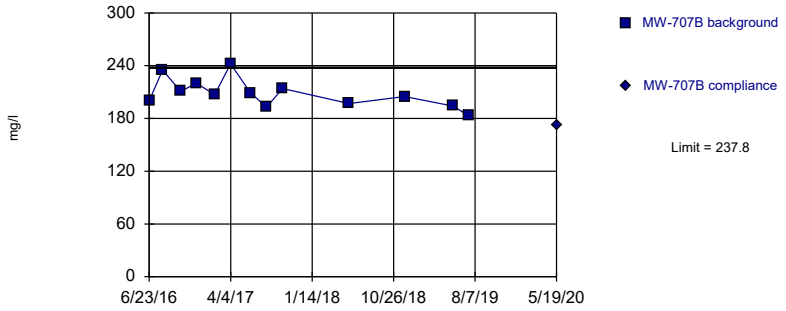
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=208.5, Std. Dev.=16.62, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9526, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

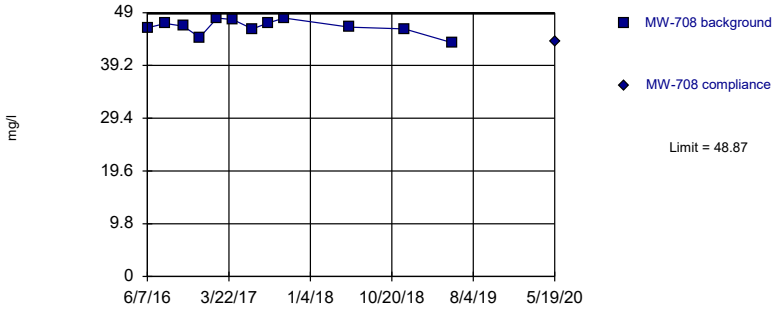
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=46.38, Std. Dev.=1.383, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9073, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

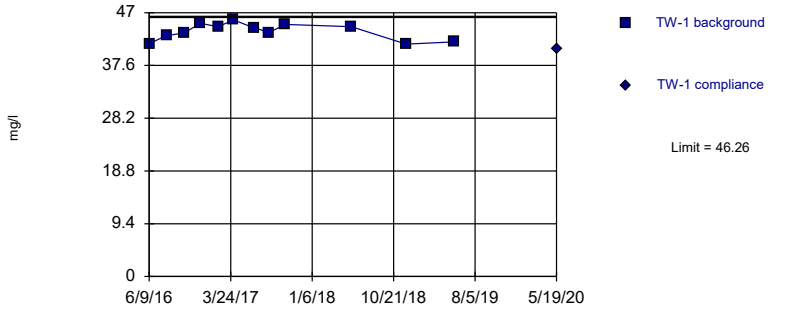
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=43.63, Std. Dev.=1.461, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9241, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: CHLORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CHLORIDE Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

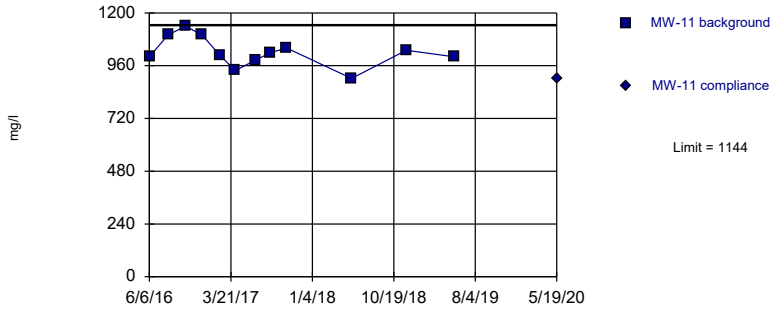
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-706	MW-706	MW-707B	MW-707B	MW-708	MW-708	TW-1	TW-1
6/7/2016					46.2			
6/8/2016	270							
6/9/2016							41.5	
6/23/2016			200					
8/9/2016	269		235				42.9	
8/10/2016					47			
10/11/2016	274		211				43.4	
10/12/2016					46.5			
12/6/2016	272		220				45.1	
12/9/2016					44.4			
2/7/2017	309		207				44.5	
2/9/2017					48			
4/4/2017	282		242				45.7	
4/6/2017					47.7			
6/13/2017	274		209				44.3	
6/14/2017					46			
8/8/2017			193		47.1		43.5	
8/9/2017	282							
10/3/2017			214				44.9	
10/4/2017	276				48			
5/23/2018					46.3			
5/24/2018	252		197				44.5	
12/4/2018	241		205		46		41.4	
1/15/2019	238							
5/23/2019	253		194		43.4		41.8	
7/17/2019			183					
5/19/2020		225		172		43.6		40.5

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1022, Std. Dev.=67.75, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9655, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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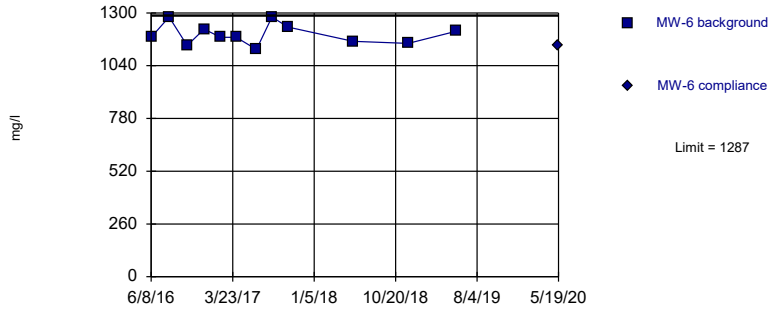
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1194, Std. Dev.=51.43, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9382, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

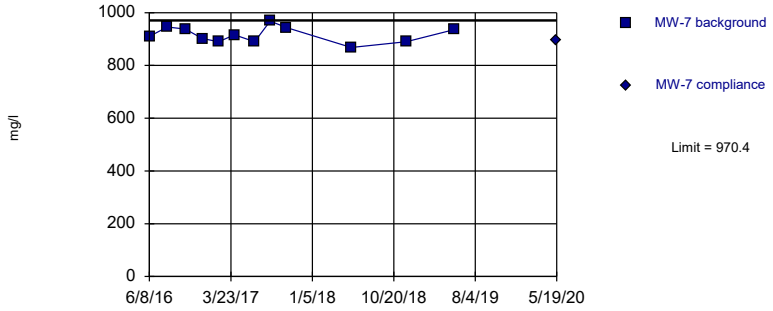
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=916.5, Std. Dev.=29.9, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9564, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

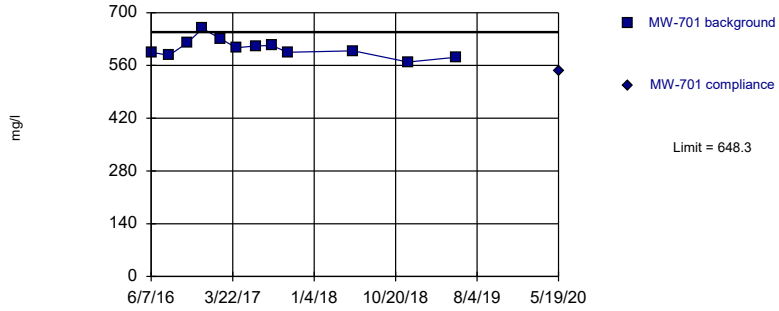
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=605.6, Std. Dev.=23.7, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9644, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

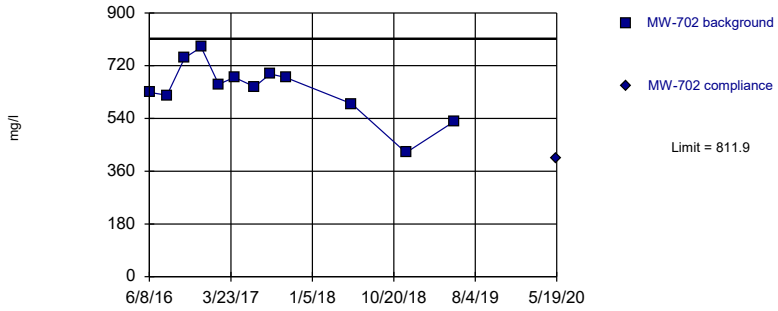
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-11	MW-11	MW-6	MW-6	MW-7	MW-7	MW-701	MW-701
6/6/2016	1000							
6/7/2016							595	
6/8/2016			1180		910			
8/9/2016							587	
8/10/2016			1280		946			
8/11/2016	1100							
10/11/2016							619	
10/12/2016	1140							
10/13/2016			1140		938			
12/6/2016							658	
12/9/2016	1100							
12/12/2016			1220		902			
2/7/2017							631	
2/8/2017					890			
2/9/2017	1010		1180					
4/4/2017							607	
4/5/2017			1180		916			
4/6/2017	938							
6/13/2017							612	
6/15/2017	984		1120		890			
8/8/2017							613	
8/9/2017			1280		968			
8/10/2017	1020							
10/3/2017							595	
10/5/2017	1040		1230		944			
5/23/2018	902		1160		868			
5/24/2018							599	
12/3/2018	1030						569	
12/4/2018			1150		890			
5/23/2019	1000		1210		936		582	
5/19/2020		904		1140		896		545

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=639.8, Std. Dev.=95.54, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9438, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

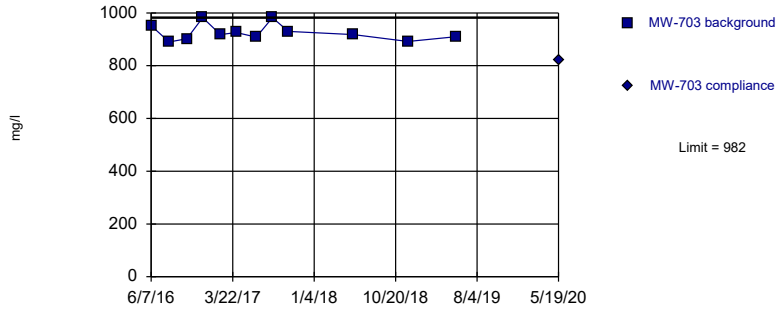
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=925.8, Std. Dev.=31.19, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8793, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

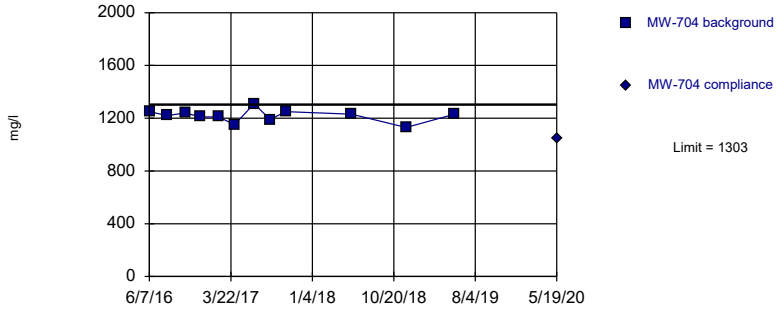
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1218, Std. Dev.=47.26, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9502, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

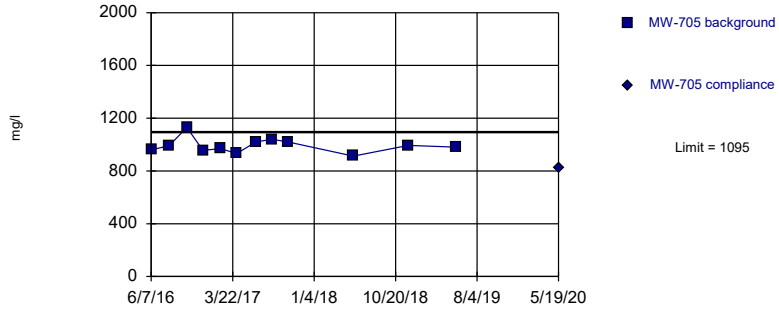
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=992.2, Std. Dev.=57.06, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9257, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

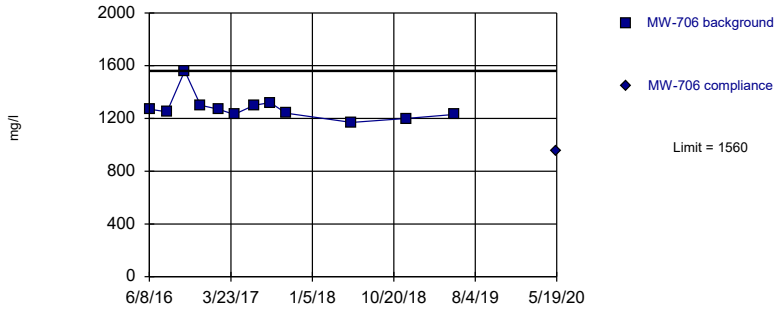
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-702	MW-702	MW-703	MW-703	MW-704	MW-704	MW-705	MW-705
6/7/2016			952		1250		960	
6/8/2016	629							
8/9/2016	619		890		1220		992	
10/11/2016	747		902		1240		1130	
12/6/2016			982		1210			
12/7/2016							958	
12/8/2016	783							
2/7/2017			918		1210			
2/8/2017	657							
2/9/2017							968	
4/4/2017			926		1150			
4/5/2017	680							
4/6/2017							932	
6/13/2017					1310		1020	
6/14/2017			908					
6/15/2017	648							
8/8/2017					1190			
8/9/2017	692						1040	
8/10/2017			982					
10/3/2017	680				1250		1020	
10/5/2017			930					
5/24/2018	590		918		1230		912	
12/3/2018	423		892		1130			
12/4/2018							994	
5/23/2019	530		910		1230		980	
5/19/2020		406		823		1050		822

Within Limit

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. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

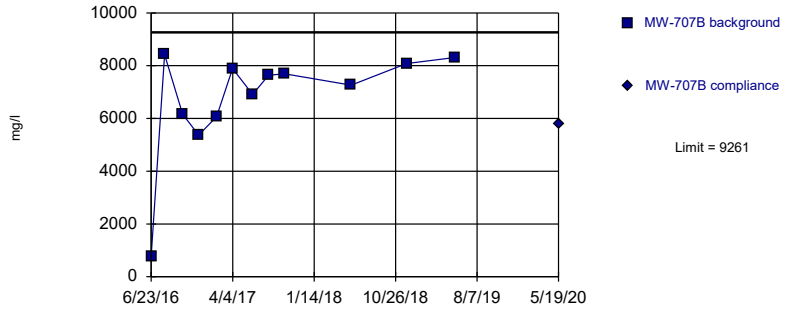
Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square transformation): Mean=4.9e7, Std. Dev.=2.0e7, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8899, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

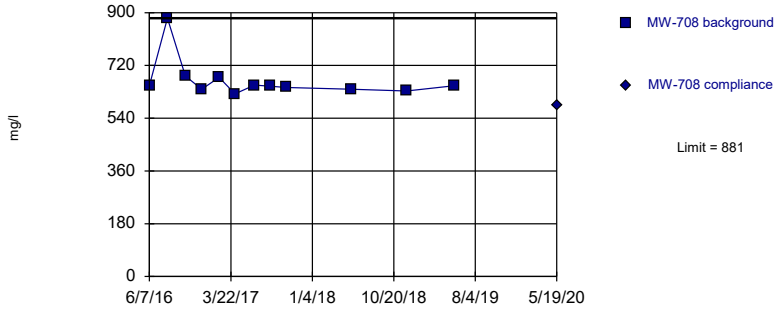
Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

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. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

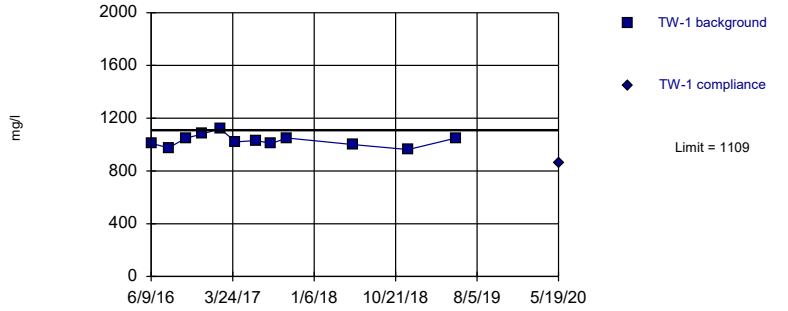
Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1030, Std. Dev.=43.84, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9694, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: DISSOLVED SOLIDS Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

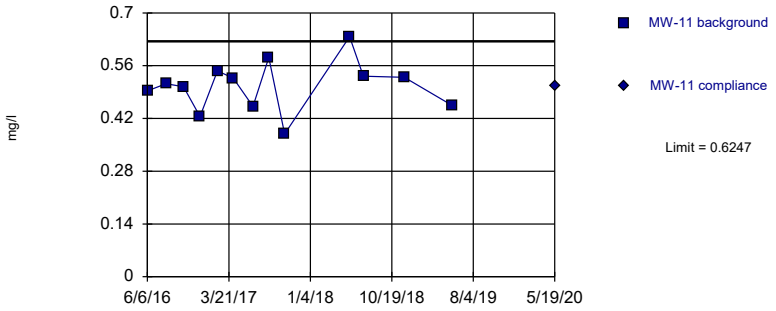
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-706	MW-706	MW-707B	MW-707B	MW-708	MW-708	TW-1	TW-1
6/7/2016					651			
6/8/2016	1270							
6/9/2016							1010	
6/23/2016			770					
8/9/2016	1250		8420				976	
8/10/2016					881			
10/11/2016	1560		6160				1050	
10/12/2016					684			
12/6/2016	1300		5370				1080	
12/9/2016					639			
2/7/2017	1270		6070				1120	
2/9/2017					679			
4/4/2017	1230		7890				1020	
4/6/2017					623			
6/13/2017	1300		6910				1030	
6/14/2017					653			
8/8/2017			7640		649		1010	
8/9/2017	1320							
10/3/2017			7690				1050	
10/4/2017	1240				645			
5/23/2018					639			
5/24/2018	1170		7260				1000	
12/4/2018	1200		8080		633		962	
5/23/2019	1230		8310		651		1050	
5/19/2020		952		5810		586		864

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.5055, Std. Dev.=0.06751, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.981, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

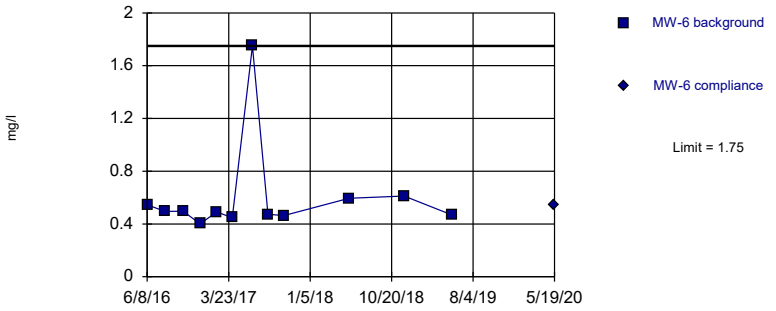
Constituent: FLUORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

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. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

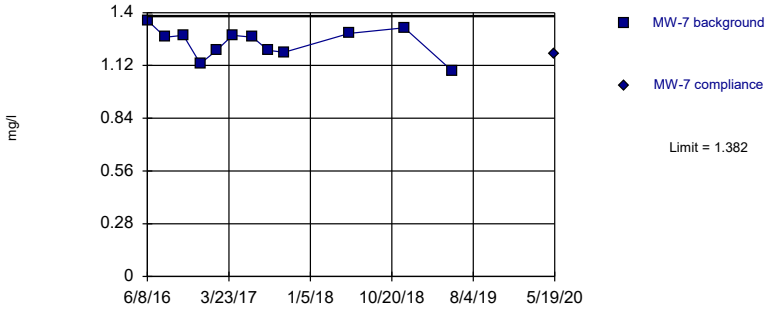
Constituent: FLUORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.24, Std. Dev.=0.07897, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9444, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

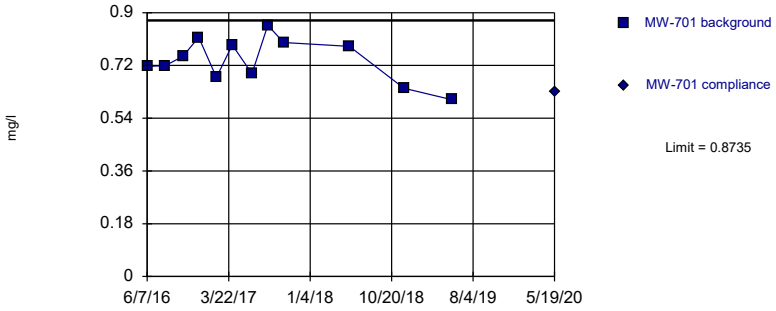
Constituent: FLUORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.7374, Std. Dev.=0.07554, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.977, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: FLUORIDE Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

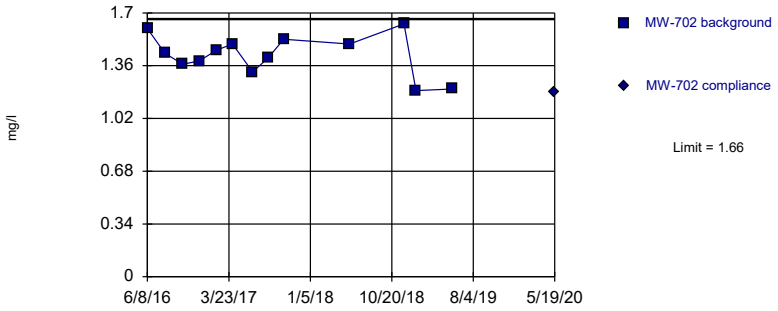
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-11	MW-11	MW-6	MW-6	MW-7	MW-7	MW-701	MW-701
6/6/2016	0.493							
6/7/2016							0.717	
6/8/2016			0.545		1.36			
8/9/2016							0.719	
8/10/2016			0.495		1.27			
8/11/2016	0.512							
10/11/2016							0.751	
10/12/2016	0.504							
10/13/2016			0.497		1.28			
12/6/2016							0.816	
12/9/2016	0.425							
12/12/2016			0.401		1.13			
2/7/2017							0.679	
2/8/2017					1.2			
2/9/2017	0.546		0.492					
4/4/2017							0.79	
4/5/2017			0.447		1.28			
4/6/2017	0.527							
6/13/2017							0.692	
6/15/2017	0.452		1.75		1.27			
8/8/2017							0.857	
8/9/2017			0.473		1.2			
8/10/2017	0.582							
10/3/2017							0.798	
10/5/2017	0.379		0.464		1.19			
5/23/2018	0.637		0.595		1.29			
5/24/2018							0.785	
7/11/2018	0.532							
12/3/2018	0.529						0.642	
12/4/2018			0.612		1.32			
5/23/2019	0.454		0.467		1.09		0.603	
5/19/2020		0.507		0.541		1.18		0.63

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.428, Std. Dev.=0.1319, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9609, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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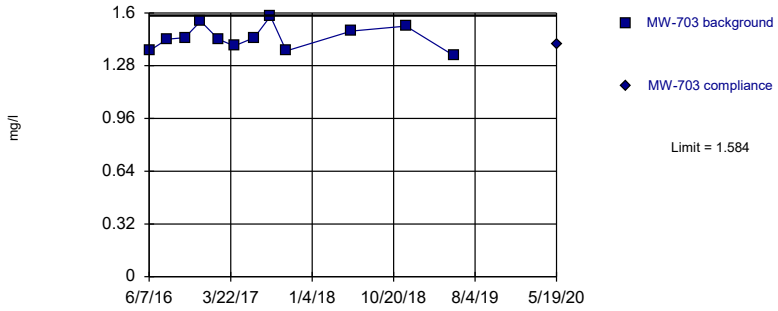
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.45, Std. Dev.=0.07447, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9597, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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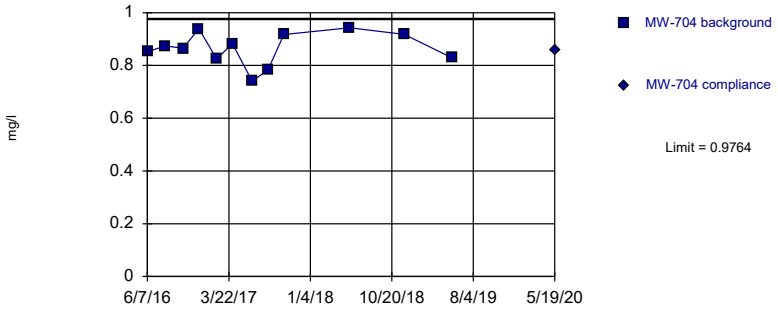
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.8638, Std. Dev.=0.06246, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9508, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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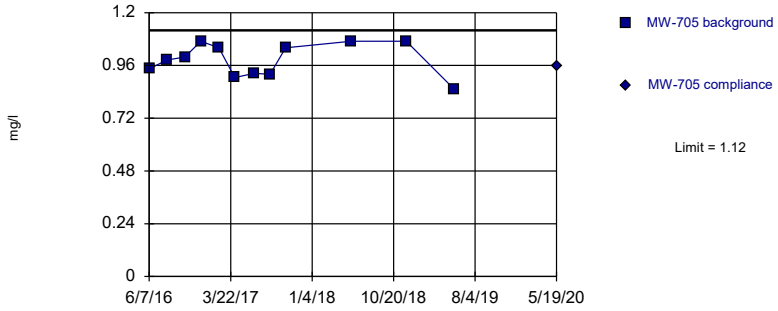
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.9848, Std. Dev.=0.07484, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9122, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: FLUORIDE Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

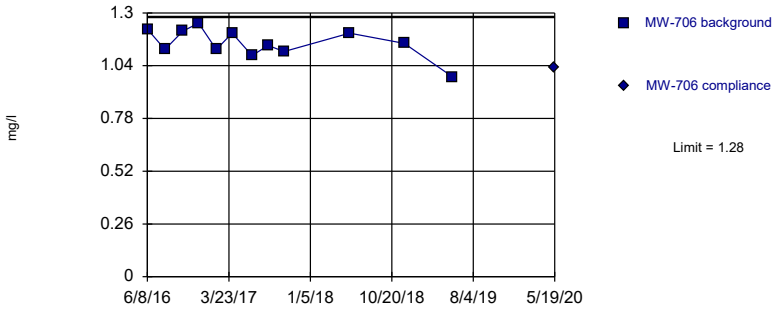
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-702	MW-702	MW-703	MW-703	MW-704	MW-704	MW-705	MW-705
6/7/2016			1.37		0.852		0.944	
6/8/2016	1.6							
8/9/2016	1.44		1.44		0.874		0.985	
10/11/2016	1.37		1.45		0.865		0.998	
12/6/2016			1.55		0.939			
12/7/2016							1.07	
12/8/2016	1.39							
2/7/2017			1.44		0.825			
2/8/2017	1.46							
2/9/2017							1.04	
4/4/2017			1.4		0.882			
4/5/2017	1.5							
4/6/2017							0.905	
6/13/2017					0.74		0.924	
6/14/2017			1.45					
6/15/2017	1.32							
8/8/2017					0.783			
8/9/2017	1.41						0.92	
8/10/2017			1.58					
10/3/2017	1.53				0.917		1.04	
10/5/2017			1.37					
5/24/2018	1.5		1.49		0.943		1.07	
12/3/2018	1.63		1.52		0.918			
12/4/2018							1.07	
1/14/2019	1.2							
5/23/2019	1.21		1.34		0.828		0.852	
5/19/2020		1.19		1.41		0.857		0.955

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.15, Std. Dev.=0.0725, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.932, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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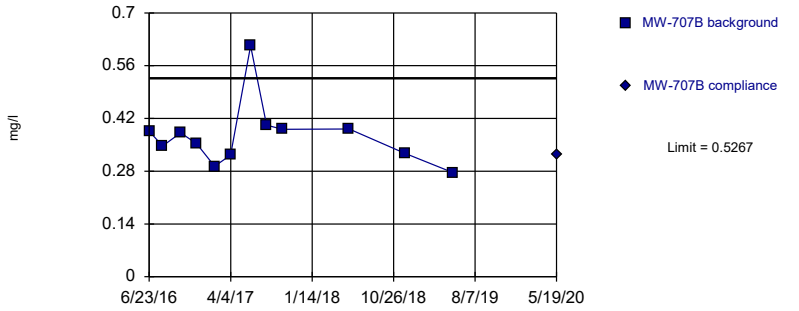
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=0.6082, Std. Dev.=0.06525, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8325, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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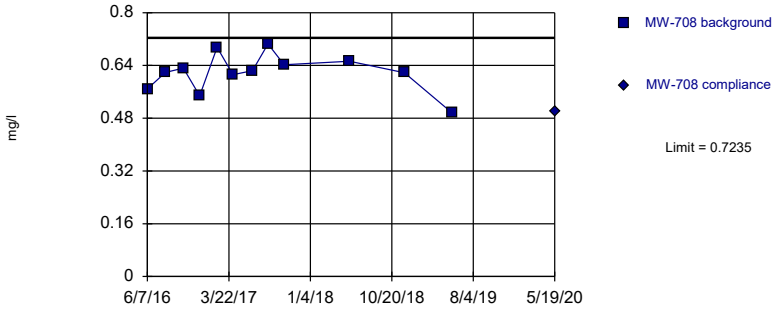
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.6177, Std. Dev.=0.05877, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9478, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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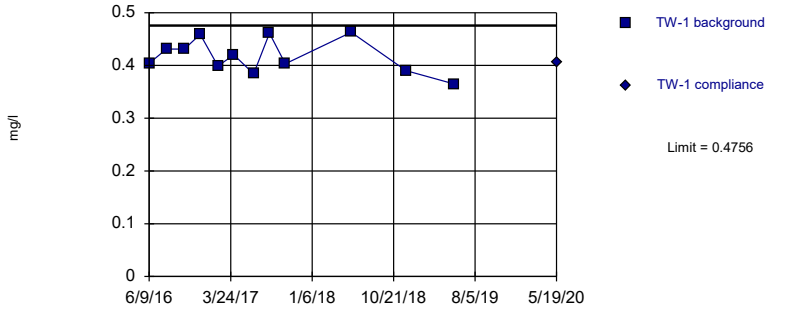
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.4175, Std. Dev.=0.03223, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9393, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: FLUORIDE Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: FLUORIDE Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

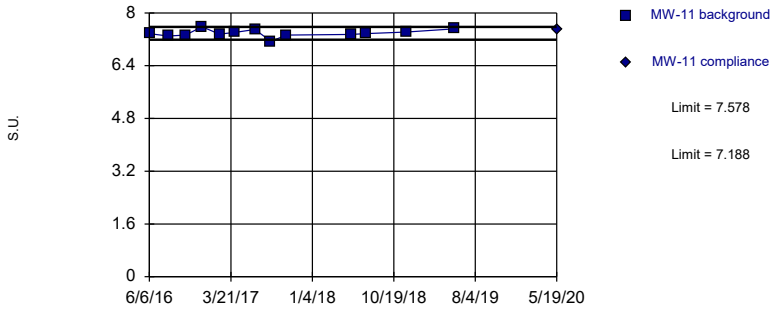
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-706	MW-706	MW-707B	MW-707B	MW-708	MW-708	TW-1	TW-1
6/7/2016					0.569			
6/8/2016	1.22							
6/9/2016							0.404	
6/23/2016			0.386					
8/9/2016	1.12		0.347				0.431	
8/10/2016					0.619			
10/11/2016	1.21		0.382				0.431	
10/12/2016					0.632			
12/6/2016	1.25		0.353				0.459	
12/9/2016					0.548			
2/7/2017	1.12		0.293				0.399	
2/9/2017					0.695			
4/4/2017	1.2		0.323				0.42	
4/6/2017					0.612			
6/13/2017	1.09		0.613				0.384	
6/14/2017					0.624			
8/8/2017			0.402		0.705		0.461	
8/9/2017	1.14							
10/3/2017			0.391				0.403	
10/4/2017	1.11				0.642			
5/23/2018					0.653			
5/24/2018	1.2		0.392				0.463	
12/4/2018	1.15		0.328		0.618		0.39	
5/23/2019	0.985		0.276		0.495		0.365	
5/19/2020		1.03		0.325		0.502		0.405

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.383, Std. Dev.=0.1106, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9444, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

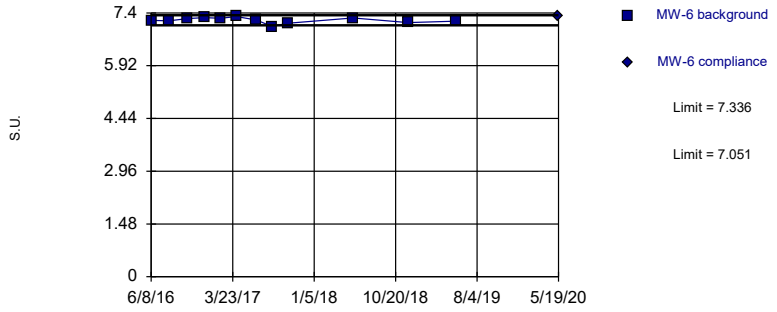
Constituent: pH Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.193, Std. Dev.=0.07912, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9482, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

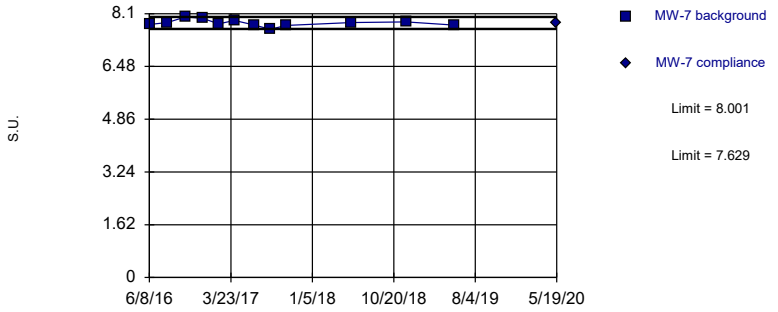
Constituent: pH Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.815, Std. Dev.=0.1033, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9663, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

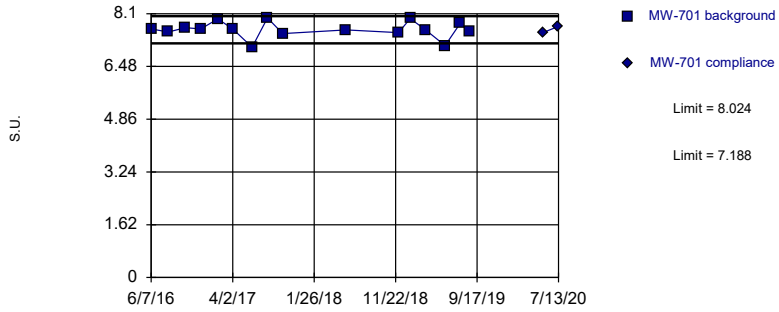
Constituent: pH Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.606, Std. Dev.=0.2528, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8939, critical = 0.844. Kappa = 1.654 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: pH Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

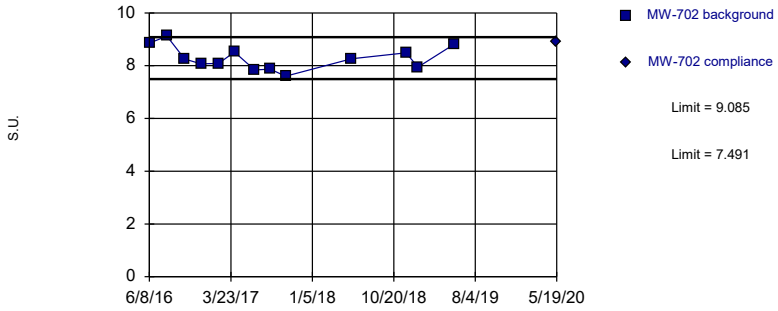
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-11	MW-11	MW-6	MW-6	MW-7	MW-7	MW-701	MW-701	
6/6/2016	7.37								
6/7/2016							7.63		
6/8/2016			7.19		7.77				
8/9/2016							7.54		
8/10/2016			7.18		7.83				
8/11/2016	7.3								
10/11/2016							7.67		
10/12/2016	7.33								
10/13/2016			7.24		8				
12/6/2016							7.63		
12/9/2016	7.58								
12/12/2016			7.27		7.96				
2/7/2017							7.94		
2/8/2017					7.79				
2/9/2017	7.36		7.25						
4/4/2017							7.62		
4/5/2017			7.3		7.89				
4/6/2017	7.41								
6/13/2017							7.07		
6/15/2017	7.5		7.2		7.75				
8/8/2017							7.97		
8/9/2017			7.02		7.62				
8/10/2017	7.14								
10/3/2017							7.49		
10/5/2017	7.33		7.11		7.74				
5/23/2018	7.35		7.26		7.83				
5/24/2018							7.6		
7/11/2018	7.37								
12/3/2018	7.42						7.52		
12/4/2018			7.13		7.85				
1/15/2019							7.95		
3/11/2019							7.61		
5/23/2019	7.52		7.17		7.75		7.12		
7/17/2019							7.8		
8/23/2019							7.54		
5/19/2020		7.48		7.31		7.81		7.53	
7/13/2020								7.71	Extra Sample

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=8.288, Std. Dev.=0.4518, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9627, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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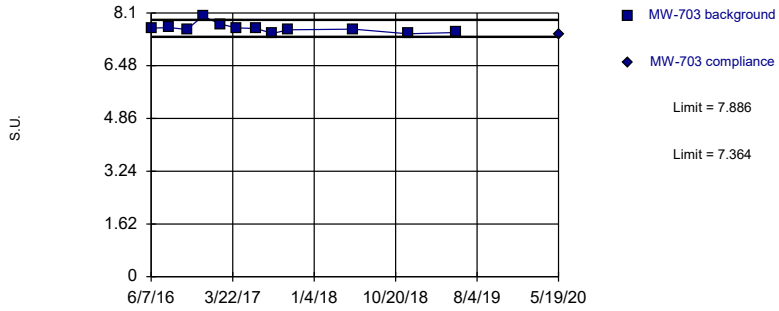
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.625, Std. Dev.=0.1448, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8441, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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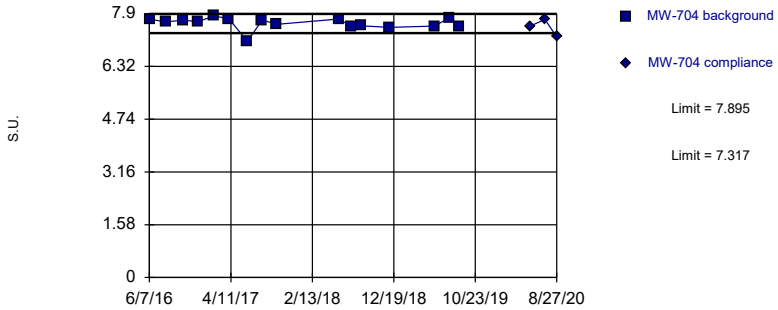
Exceeds Limits

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube transformation): Mean=441.9, Std. Dev.=30.33, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8534, critical = 0.844. Kappa = 1.654 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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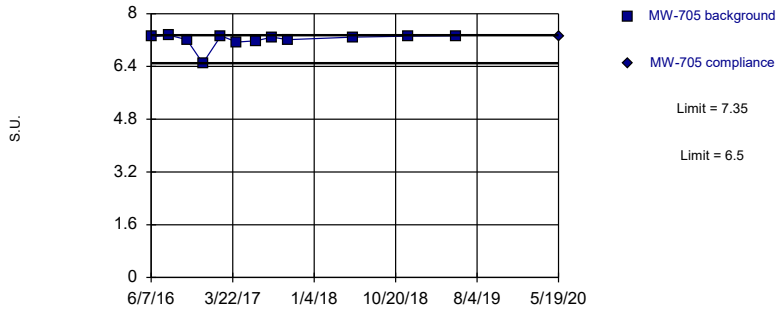
Within Limits

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 12 background values. Well-constituent pair annual alpha = 0.008684. Individual comparison alpha = 0.004347 (1 of 3).

Constituent: pH Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: pH Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

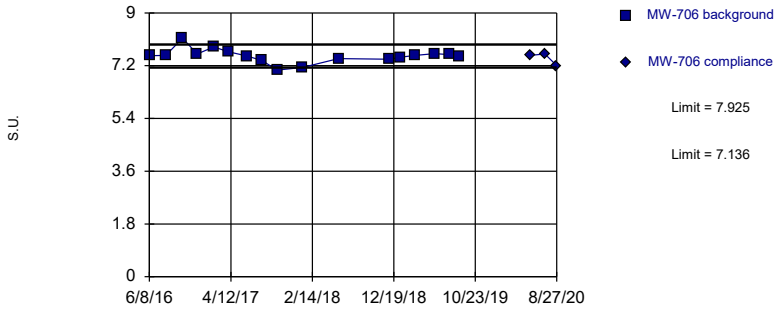
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-702	MW-702	MW-703	MW-703	MW-704	MW-704	MW-705	MW-705
6/7/2016			7.63		7.74		7.3	
6/8/2016	8.86							
8/9/2016	9.12		7.65		7.65		7.35	
10/11/2016	8.25		7.59		7.71		7.21	
12/6/2016					7.66			
12/7/2016			8				6.5	
12/8/2016	8.07							
2/7/2017			7.76		7.83			
2/8/2017	8.09							
2/9/2017							7.33	
4/4/2017			7.64		7.75			
4/5/2017	8.52							
4/6/2017							7.14	
6/13/2017					7.07		7.18	
6/14/2017			7.62					
6/15/2017	7.84							
8/8/2017					7.71			
8/9/2017	7.87						7.29	
8/10/2017			7.47					
10/3/2017	7.6				7.58		7.21	
10/5/2017			7.58					
5/24/2018	8.26		7.6		7.74		7.29	
7/11/2018					7.53			
8/16/2018					7.54			
12/3/2018	8.49		7.46		7.49			
12/4/2018							7.32	
1/14/2019	7.95							
5/23/2019	8.82		7.5		7.53		7.33	
7/17/2019					7.78			
8/23/2019					7.5			
5/19/2020		8.92		7.44		7.53		7.3
7/13/2020						7.73 Extra Sample		
8/27/2020						7.21 Extra Sample		

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.531, Std. Dev.=0.2415, n=17. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9134, critical = 0.851. Kappa = 1.633 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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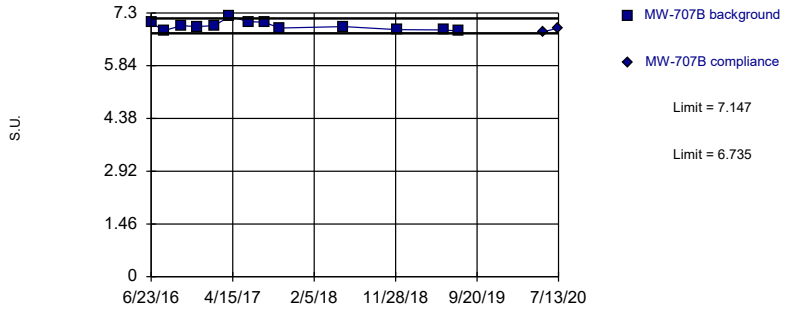
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.941, Std. Dev.=0.1167, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9309, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 9/9/2020 10:53 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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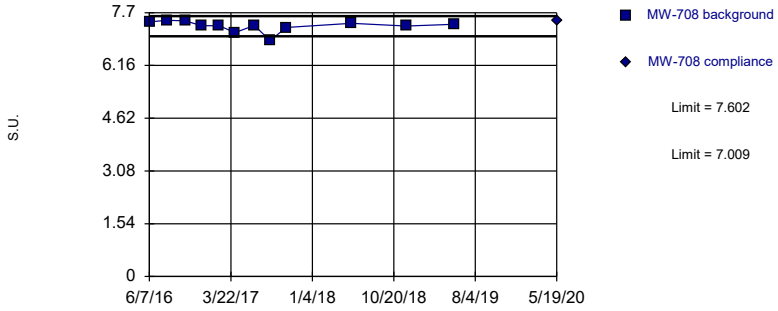
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.306, Std. Dev.=0.1645, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8257, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 9/9/2020 10:54 PM View: Upper AQC III

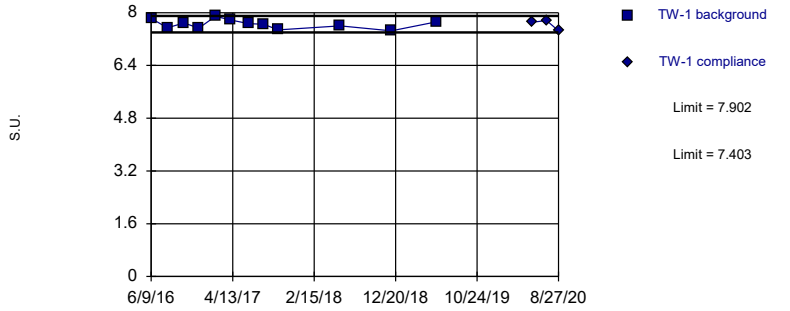
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.653, Std. Dev.=0.1387, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9714, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: pH Analysis Run 9/9/2020 10:54 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: pH Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

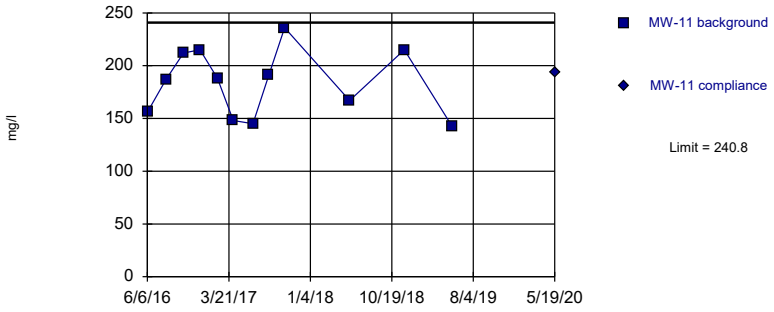
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-706	MW-706	MW-707B	MW-707B	MW-708	MW-708	TW-1	TW-1
6/7/2016					7.43			
6/8/2016	7.54							
6/9/2016							7.83	
6/23/2016			7.03					
8/9/2016	7.55		6.81				7.54	
8/10/2016					7.48			
10/11/2016	8.14		6.95				7.69	
10/12/2016					7.46			
12/6/2016	7.6		6.92				7.53	
12/9/2016					7.32			
2/7/2017	7.84		6.95				7.89	
2/9/2017					7.32			
4/4/2017	7.67		7.2				7.78	
4/6/2017					7.12			
6/13/2017	7.53		7.06				7.67	
6/14/2017					7.33			
8/8/2017			7.04		6.88		7.65	
8/9/2017	7.37							
10/3/2017			6.88				7.48	
10/4/2017	7.05				7.27			
1/9/2018	7.14							
5/23/2018					7.39			
5/24/2018	7.44		6.92				7.6	
12/4/2018	7.42		6.84		7.31		7.45	
1/15/2019	7.49							
3/11/2019	7.55							
5/23/2019	7.61		6.83		7.36		7.72	
7/17/2019	7.58		6.8					
8/23/2019	7.5							
5/19/2020		7.55		6.78		7.48		7.71
7/13/2020		7.6 Extra Sample		6.88 Extra Sample				7.76 Extra Sample
8/27/2020		7.2 Extra Sample						7.45 Extra Sample

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=183.5, Std. Dev.=31.82, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9268, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

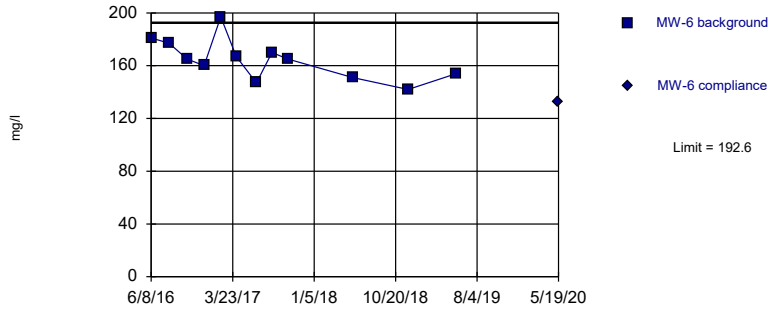
Constituent: SULFATE Analysis Run 9/9/2020 10:54 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=164.7, Std. Dev.=15.51, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9713, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: SULFATE Analysis Run 9/9/2020 10:54 PM View: Upper AQC III

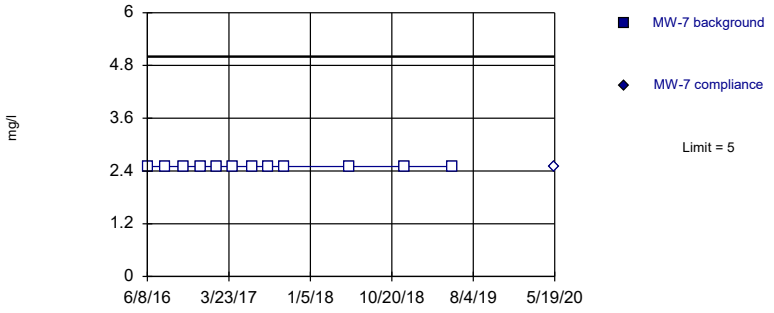
LaCygne Client: SCS Engineers Data: LaC GW Data

Hollow symbols indicate censored values.

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 = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

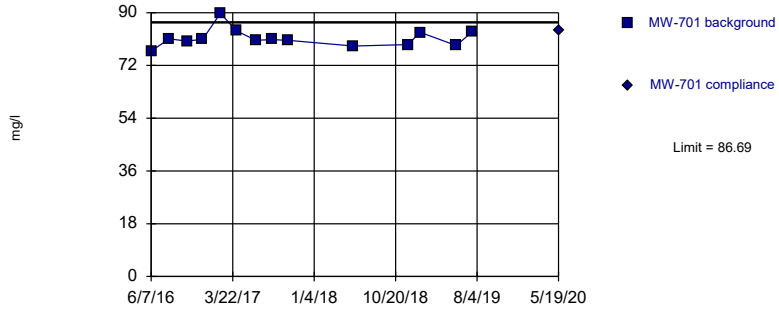
Constituent: SULFATE Analysis Run 9/9/2020 10:54 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=81.29, Std. Dev.=3.127, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8698, critical = 0.825. Kappa = 1.728 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: SULFATE Analysis Run 9/9/2020 10:54 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: SULFATE Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

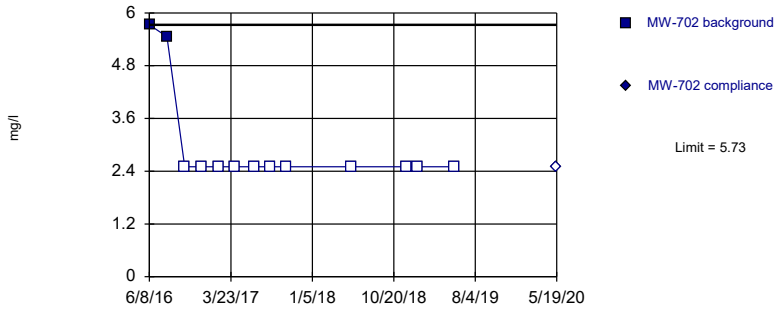
	MW-11	MW-11	MW-6	MW-6	MW-7	MW-7	MW-701	MW-701
6/6/2016	156							
6/7/2016							76.9	
6/8/2016			181		<5			
8/9/2016							81.1	
8/10/2016			177		<5			
8/11/2016	187							
10/11/2016							80.3	
10/12/2016	212							
10/13/2016			165		<5			
12/6/2016							80.9	
12/9/2016	215							
12/12/2016			160		<5			
2/7/2017							89.8	
2/8/2017					<5			
2/9/2017	188		197					
4/4/2017							83.8	
4/5/2017			167		<5			
4/6/2017	148							
6/13/2017							80.6	
6/15/2017	145		147		<5			
8/8/2017							80.8	
8/9/2017			170		<5			
8/10/2017	191							
10/3/2017							80.6	
10/5/2017	236		165		<5			
5/23/2018	167		151		<5			
5/24/2018							78.6	
12/3/2018	215						79.1	
12/4/2018			142		<5			
1/15/2019							83.3	
5/23/2019	142		154		<5		78.8	
7/17/2019							83.4	
5/19/2020		194		133		<5		84

Hollow symbols indicate censored values.

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 13 background values. 84.62% NDs. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3).

Constituent: SULFATE Analysis Run 9/9/2020 10:54 PM View: Upper AQC III

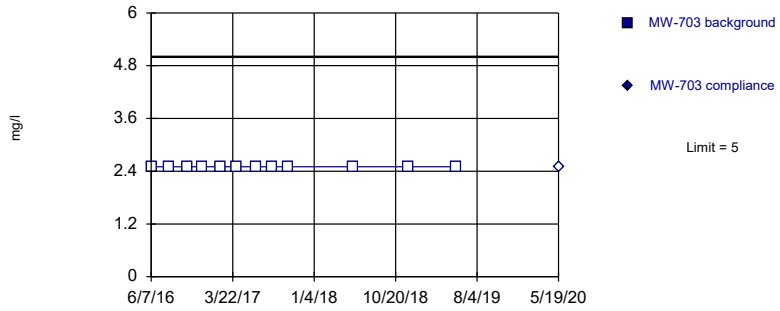
LaCygne Client: SCS Engineers Data: LaC GW Data

Hollow symbols indicate censored values.

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 = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

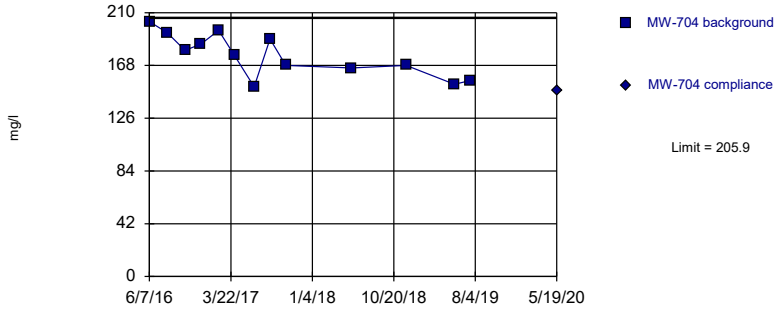
Constituent: SULFATE Analysis Run 9/9/2020 10:54 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=175.8, Std. Dev.=17.08, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9535, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

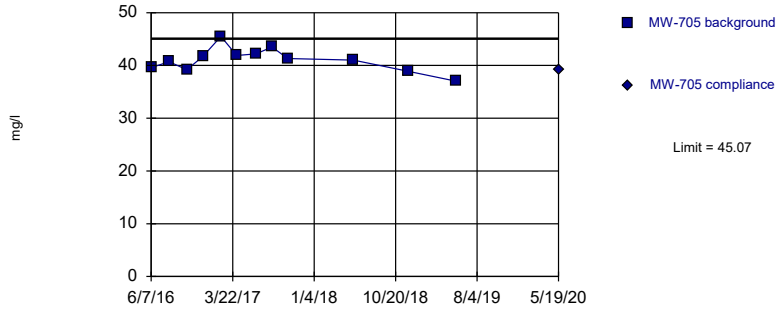
Constituent: SULFATE Analysis Run 9/9/2020 10:54 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=41.04, Std. Dev.=2.236, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.983, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: SULFATE Analysis Run 9/9/2020 10:54 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: SULFATE Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

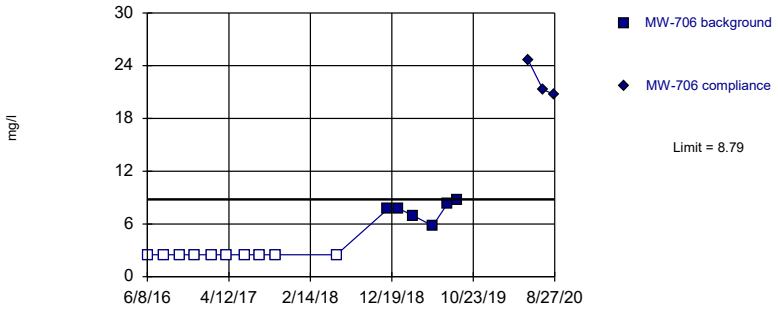
	MW-702	MW-702	MW-703	MW-703	MW-704	MW-704	MW-705	MW-705
6/7/2016			<5		203		39.6	
6/8/2016	5.73							
8/9/2016	5.46		<5		194		40.7	
10/11/2016	<5		<5		180		39.2	
12/6/2016			<5		185			
12/7/2016							41.7	
12/8/2016	<5							
2/7/2017			<5		196			
2/8/2017	<5							
2/9/2017							45.5	
4/4/2017			<5		176			
4/5/2017	<5							
4/6/2017							41.9	
6/13/2017					151		42.2	
6/14/2017			<5					
6/15/2017	<5							
8/8/2017					189			
8/9/2017	<5						43.5	
8/10/2017			<5					
10/3/2017	<5				168		41.3	
10/5/2017			<5					
5/24/2018	<5		<5		166		41	
12/3/2018	<5		<5		168			
12/4/2018							38.9	
1/14/2019	<5							
5/23/2019	<5		<5		153		37	
7/17/2019					156			
5/19/2020		<5		<5		148		39.3

Hollow symbols indicate censored values.

Exceeds 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 16 background values. 62.5% NDs. Well-constituent pair annual alpha = 0.002051. Individual comparison alpha = 0.001026 (1 of 3).

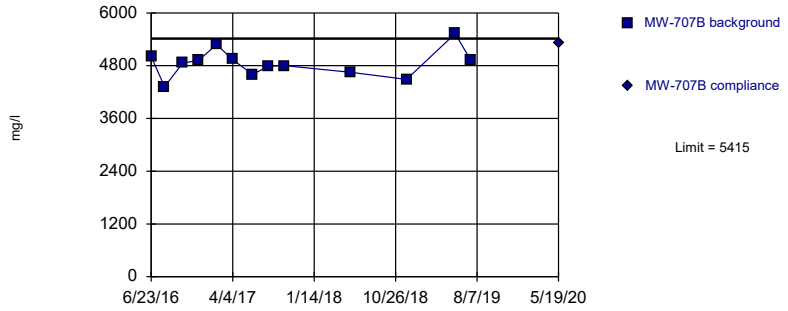
Constituent: SULFATE Analysis Run 9/9/2020 10:54 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=4855, Std. Dev.=317.5, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9647, critical = 0.814. Kappa = 1.765 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

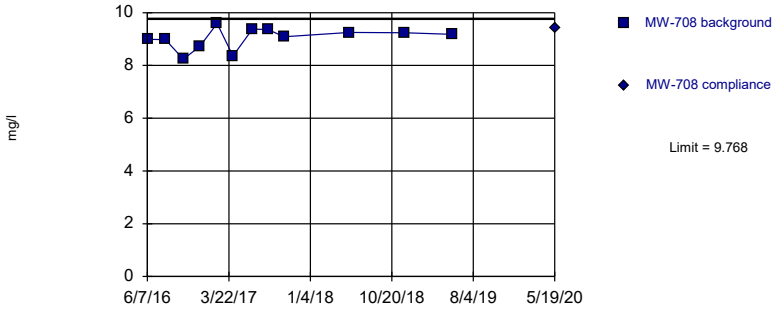
Constituent: SULFATE Analysis Run 9/9/2020 10:54 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=9.032, Std. Dev.=0.4086, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.916, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

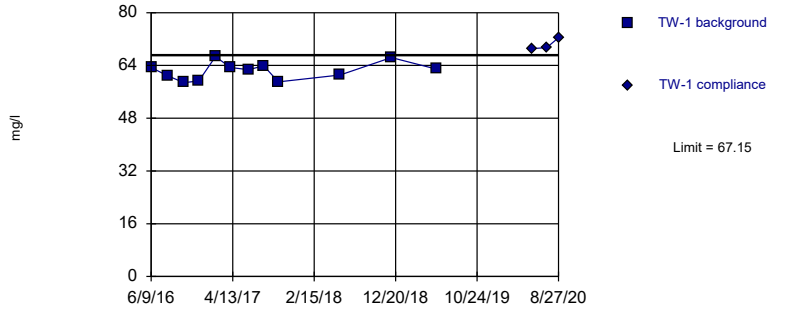
Constituent: SULFATE Analysis Run 9/9/2020 10:54 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=62.38, Std. Dev.=2.648, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9322, critical = 0.805. Kappa = 1.802 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: SULFATE Analysis Run 9/9/2020 10:54 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: SULFATE Analysis Run 9/9/2020 10:55 PM View: Upper AQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-706	MW-706		MW-707B	MW-707B	MW-708	MW-708	TW-1	TW-1	
6/7/2016						8.99				
6/8/2016	<5									
6/9/2016								63.4		
6/23/2016				5010						
8/9/2016	<5			4320				60.9		
8/10/2016						8.98				
10/11/2016	<5			4860				58.8		
10/12/2016						8.24				
12/6/2016	<5			4920				59.3		
12/9/2016						8.72				
2/7/2017	<5			5280				66.7		
2/9/2017						9.59				
4/4/2017	<5			4940				63.4		
4/6/2017						8.36				
6/13/2017	<5			4600				62.7		
6/14/2017						9.38				
8/8/2017				4790		9.36		63.9		
8/9/2017	<5									
10/3/2017				4800				59		
10/4/2017	<5					9.09				
5/23/2018						9.25				
5/24/2018	<5			4650				61.1		
12/4/2018	7.69			4490		9.24		66.4		
1/15/2019	7.73									
3/11/2019	6.96									
5/23/2019	5.78			5530		9.18		62.9		
7/17/2019	8.27			4920						
8/23/2019	8.79									
5/19/2020		24.6			5310		9.42		69.1	
7/13/2020		21.3	1st Verification Sample						69.4	1st Verification Sample
8/27/2020		20.7	2nd Verification Sample						72.4	2nd Verification Sample

Prediction Limit

LaCygne Client: SCS Engineers Data: LaC GW Data Printed 9/9/2020, 10:55 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
BORON (mg/l)	MW-11	1.263	n/a	5/19/2020	0.891	No	13	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-6	1.249	n/a	5/19/2020	1.11	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-7	1.691	n/a	5/19/2020	1.53	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-701	1.108	n/a	5/19/2020	0.913	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-702	2.024	n/a	5/19/2020	1.34	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-703	1.944	n/a	5/19/2020	1.78	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-704	2.153	n/a	5/19/2020	1.87	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-705	2.318	n/a	5/19/2020	2.1	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-706	2.263	n/a	5/19/2020	1.94	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	MW-707B	2.04	n/a	5/19/2020	1.81	No	12	0	n/a	0.002173	NP Intra (normality) ...
BORON (mg/l)	MW-708	1.537	n/a	5/19/2020	1.26	No	12	0	No	0.000...	Param Intra 1 of 3
BORON (mg/l)	TW-1	1.731	n/a	5/19/2020	1.37	No	12	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-11	72.5	n/a	5/19/2020	62.2	No	12	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-6	116.3	n/a	5/19/2020	78.8	No	12	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-7	27.59	n/a	5/19/2020	21.8	No	12	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-701	44.57	n/a	7/13/2020	41.3	No	16	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-702	24.13	n/a	5/19/2020	3.33	No	13	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-703	23.18	n/a	5/19/2020	18.5	No	12	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-704	35.87	n/a	5/19/2020	20.9	No	13	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-705	43.56	n/a	5/19/2020	29.4	No	12	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-706	35.66	n/a	5/19/2020	24.8	No	14	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-707B	422.2	n/a	7/13/2020	421	No	13	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	MW-708	34.37	n/a	5/19/2020	30.2	No	12	0	No	0.000...	Param Intra 1 of 3
CALCIUM (mg/l)	TW-1	37.96	n/a	5/19/2020	25	No	12	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-11	135.8	n/a	5/19/2020	112	No	12	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-6	227.2	n/a	5/19/2020	191	No	12	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-7	112.8	n/a	5/19/2020	95.9	No	12	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-701	56.12	n/a	5/19/2020	48.3	No	14	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-702	50.24	n/a	5/19/2020	38	No	13	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-703	117	n/a	5/19/2020	107	No	12	0	x^5	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	**MW-704**	**88.89**	**n/a**	**8/27/2020**	**92.2**	**Yes**	**16**	**0**	**No**	**0.000...**	**Param Intra 1 of 3**
CHLORIDE (mg/l)	MW-705	141.4	n/a	5/19/2020	132	No	12	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-706	302.2	n/a	5/19/2020	225	No	13	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-707B	237.8	n/a	5/19/2020	172	No	13	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-708	48.87	n/a	5/19/2020	43.6	No	12	0	No	0.000...	Param Intra 1 of 3
CHLORIDE (mg/l)	TW-1	46.26	n/a	5/19/2020	40.5	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-11	1144	n/a	5/19/2020	904	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-6	1287	n/a	5/19/2020	1140	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-7	970.4	n/a	5/19/2020	896	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-701	648.3	n/a	5/19/2020	545	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-702	811.9	n/a	5/19/2020	406	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-703	982	n/a	5/19/2020	823	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-704	1303	n/a	5/19/2020	1050	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-705	1095	n/a	5/19/2020	822	No	12	0	No	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-706	1560	n/a	5/19/2020	952	No	12	0	n/a	0.002173	NP Intra (normality) ...
DISSOLVED SOLIDS (mg/l)	MW-707B	9261	n/a	5/19/2020	5810	No	12	0	x^2	0.000...	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-708	881	n/a	5/19/2020	586	No	12	0	n/a	0.002173	NP Intra (normality) ...
DISSOLVED SOLIDS (mg/l)	TW-1	1109	n/a	5/19/2020	864	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-11	0.6247	n/a	5/19/2020	0.507	No	13	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-6	1.75	n/a	5/19/2020	0.541	No	12	0	n/a	0.002173	NP Intra (normality) ...

Prediction Limit

LaCygne Client: SCS Engineers Data: LaC GW Data Printed 9/9/2020, 10:55 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
FLUORIDE (mg/l)	MW-7	1.382	n/a	5/19/2020	1.18	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-701	0.8735	n/a	5/19/2020	0.63	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-702	1.66	n/a	5/19/2020	1.19	No	13	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-703	1.584	n/a	5/19/2020	1.41	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-704	0.9764	n/a	5/19/2020	0.857	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-705	1.12	n/a	5/19/2020	0.955	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-706	1.28	n/a	5/19/2020	1.03	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-707B	0.5267	n/a	5/19/2020	0.325	No	12	0	sqrt(x)	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-708	0.7235	n/a	5/19/2020	0.502	No	12	0	No	0.000...	Param Intra 1 of 3
FLUORIDE (mg/l)	TW-1	0.4756	n/a	5/19/2020	0.405	No	12	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-11	7.578	7.188	5/19/2020	7.48	No	13	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-6	7.336	7.051	5/19/2020	7.31	No	12	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-7	8.001	7.629	5/19/2020	7.81	No	12	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-701	8.024	7.188	7/13/2020	7.71	No	16	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-702	9.085	7.491	5/19/2020	8.92	No	13	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-703	7.886	7.364	5/19/2020	7.44	No	12	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-704	7.895	7.317	5/19/2020	7.53	No	16	0	x^3	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-705	7.35	6.5	5/19/2020	7.3	No	12	0	n/a	0.004347	NP Intra (normality) ...
pH (S.U.)	MW-706	7.925	7.136	8/27/2020	7.2	No	17	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-707B	7.147	6.735	7/13/2020	6.88	No	13	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-708	7.602	7.009	5/19/2020	7.48	No	12	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	TW-1	7.902	7.403	8/27/2020	7.45	No	12	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	MW-11	240.8	n/a	5/19/2020	194	No	12	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	MW-6	192.6	n/a	5/19/2020	133	No	12	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	MW-7	5	n/a	5/19/2020	2.5ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
SULFATE (mg/l)	MW-701	86.69	n/a	5/19/2020	84	No	14	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	MW-702	5.73	n/a	5/19/2020	2.5ND	No	13	84.62	n/a	0.001886	NP Intra (NDs) 1 of 3
SULFATE (mg/l)	MW-703	5	n/a	5/19/2020	2.5ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
SULFATE (mg/l)	MW-704	205.9	n/a	5/19/2020	148	No	13	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	MW-705	45.07	n/a	5/19/2020	39.3	No	12	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	**MW-706**	**8.79**	**n/a**	**8/27/2020**	**20.7**	**Yes**	**16**	**62.5**	**n/a**	**0.001026**	**NP Intra (NDs) 1 of 3**
SULFATE (mg/l)	MW-707B	5415	n/a	5/19/2020	5310	No	13	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	MW-708	9.768	n/a	5/19/2020	9.42	No	12	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	**TW-1**	**67.15**	**n/a**	**8/27/2020**	**72.4**	**Yes**	**12**	**0**	**No**	**0.000...**	**Param Intra 1 of 3**

La Cygne Generating Station
Determination of Statistically Significant Increases
Upper AQC Impoundment
September 28, 2020
Revised October 12, 2020

ATTACHMENT 2

Sanitas™ Configuration Settings

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

Exclude data flags: i

Observations with flags containing the following characters will be deselected: 'i', 'l',

Data Reading Options

- (•) Individual Observations
- ( ) Mean of Each: ( ) Month
- ( ) Median of Each: ( ) Season

Non-Detect / Trace Handling...

Setup Seasons...

[ ] Automatically Process Resamples...

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

- [ ] Black and White Output
- [x] Four Plots Per Page
  - [x] Always Combine Data Pages...
  - [x] Include Tick Marks on Data Page
  - [ ] Use Constituent Name for Graph Title
- [ ] Draw Border Around Text Reports and Data Pages
- [x] Enlarge/Reduce Fonts (Graphs): 100%
- [x] Enlarge/Reduce Fonts (Data/Text Reports): 100%
- [x] Wide Margins (on reports without explicit setting)
- [ ] Use CAS# (Not Const. Name)
- [ ] Truncate File Names to 20 Characters
- [ ] Include Limit Lines when found in Database...
- [x] Show Deselected Data on Time Series Lighter
- [ ] Show Deselected Data on all Data Pages Lighter

Setup Symbols and Colors...

- [x] Prompt to Overwrite/Append Summary Tables
- [ ] Round Limits to 2 Sig. Digits (when not set in data file)
- [ ] User-Set Scale
- [x] Indicate Background Data
- [ ] Show Exact Dates
- [ ] Thick Plot Lines

Zoom Factor: 200%

Output Decimal Precision

- ( ) Less Precision
- (•) Normal Precision
- ( ) More Precision

- [x] Store Print Jobs in Multiple Constituent Mode

Store All Print Jobs...

Printer: Adobe PDF

Printers...

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

☐ Use Modified Alpha...

☑ Test Residuals For Normality (Parametric test only) using Shapiro-Wilk/Francia at Alpha = 0.01

☐ Continue Parametric if Unable to Normalize

Transformation (Parametric test only)

- ◉ Use Ladder of Powers
- ○ Natural Log or No Transformation
- ○ Never Transform
- ○ Use Specific Transformation:

☐ Use Best W Statistic

☐ Plot Transformed Values

Use Non-Parametric Test (Sen's Slope/Mann-Kendall) when Non-Detects Percent > 75

☐ Include 95. % Confidence Interval around Trend Line

☐ Automatically Remove Outliers (Parametric test only)

Note: there is no "Always Use Non-Parametric" checkbox on this tab because, for consistency with prior versions, Sen's Slope / Mann-Kendall (the non-parametric alternative) is available as a report in its own right, under Analysis->Intrawell->Trend.

Data | Output | Trend Test | Control Cht | **Prediction Lim** | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

☑ 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 _____ when NDs % > 50

☐ Use Poisson Prediction Limit when Non-Detects Percent > 0

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 α

Statistical Evaluations per Year: 2

Constituents Analyzed: 7

Downgradient (Compliance) Wells: 9

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)

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

Rank Von Neumann, Wilcoxon Rank Sum / Mann-Whitney

- [ ] Use Modified Alpha...
- [ ] 2-Tailed Test Mode...
- [ ] Combine Background Wells on Mann-Whitney...

Outlier Tests

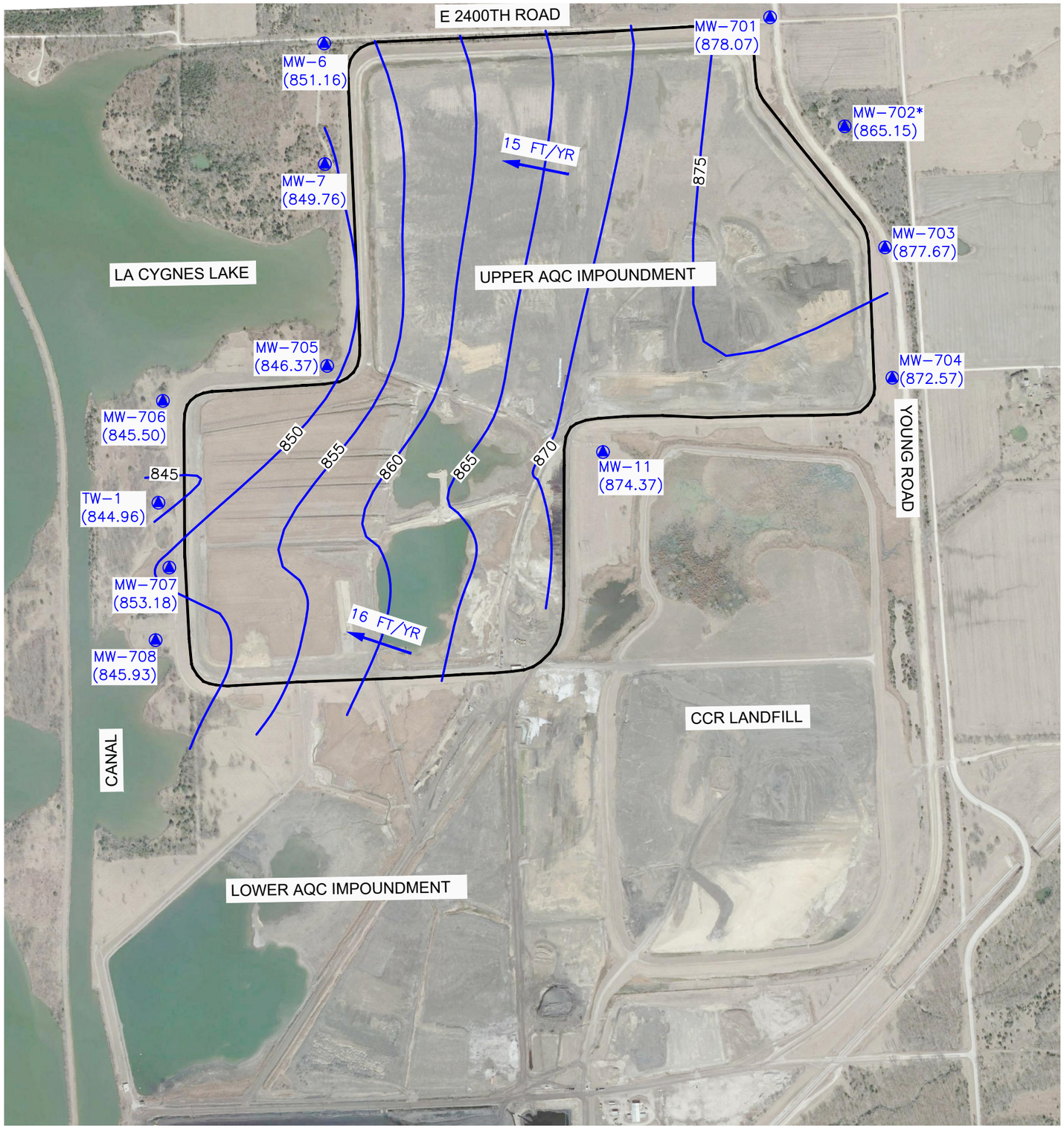
- ( ) EPA 1989 Outlier Screening (fixed alpha of 0.05)
- (•) Dixon's at α= 0.05 or if n > 22 Rosner's at α= 0.01 [x] Use EPA Screening to establish Suspected Outliers
- ( ) Tukey's Outlier Screening, with IQR Multiplier = 3.0 [ ] Use Ladder of Powers to achieve Best W Stat
- [x] Test For Normality using Shapiro-Wilk/Francia at Alpha = 0.1
  - (•) Stop if Non-Normal
  - ( ) Continue with Parametric Test if Non-Normal
  - ( ) Tukey's if Non-Normal, with IQR Multiplier = 3.0 [x] Use Ladder of Powers to achieve Best W Stat
- [x] No Outlier If Less Than 3.0 Times Median
- [ ] Apply Rules found in Ohio Guidance Document 0715
- [ ] Combine Background Wells on the Outlier Report...

Piper, Stiff Diagram

- [ ] Combine Wells
- [ ] Combine Dates
- (•) Use Default Constituent Names
- ( ) Use Constituent Definition File Edit
- [x] Label Constituents
- [x] Label Axes
- [x] Note Cation-Anion Balance (Piper only)

ATTACHMENT 3

Groundwater Potentiometric Surface Maps



LEGEND

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS OF UPPER AQC IMPOUNDMENT)
- MW-703 (877.00) CCR GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
- −875— GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS (REPRESENTATIVE FOR THIS UNIT)
- MW-702* INDICATES WELL NOT USED IN POTENTIOMETRIC SURFACE MAP CREATION
- 15 FT/YR DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

NOTES:

1. KDHE FACILITY PERMIT AND LANDFILL PERMIT BOUNDARIES VARY FROM THAT SHOWN.
2. GOOGLE EARTH IMAGE DATED MARCH 2020. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE.
3. BOUNDARY AND MONITOR WELL LOCATIONS ARE PROVIDED BY AECOM.
4. WATER LEVEL MEASUREMENTS COMPLETED ON MAY 19, 2020.

800 0 800 1600

SCALE FEET

REV.	DATE	CK. BY
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-

SHEET TITLE
POTENTIOMETRIC SURFACE MAP (MAY 2020)
UAQC IMPOUNDMENT

PROJECT TITLE
2020 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM

CLIENT
EVERGY METRO, INC
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

SCS ENGINEERS
8575 W. 110th St, Ste. 100
Overland Park, Kansas 66210
PH. (913) 681-0030 FAX. (913) 681-0012

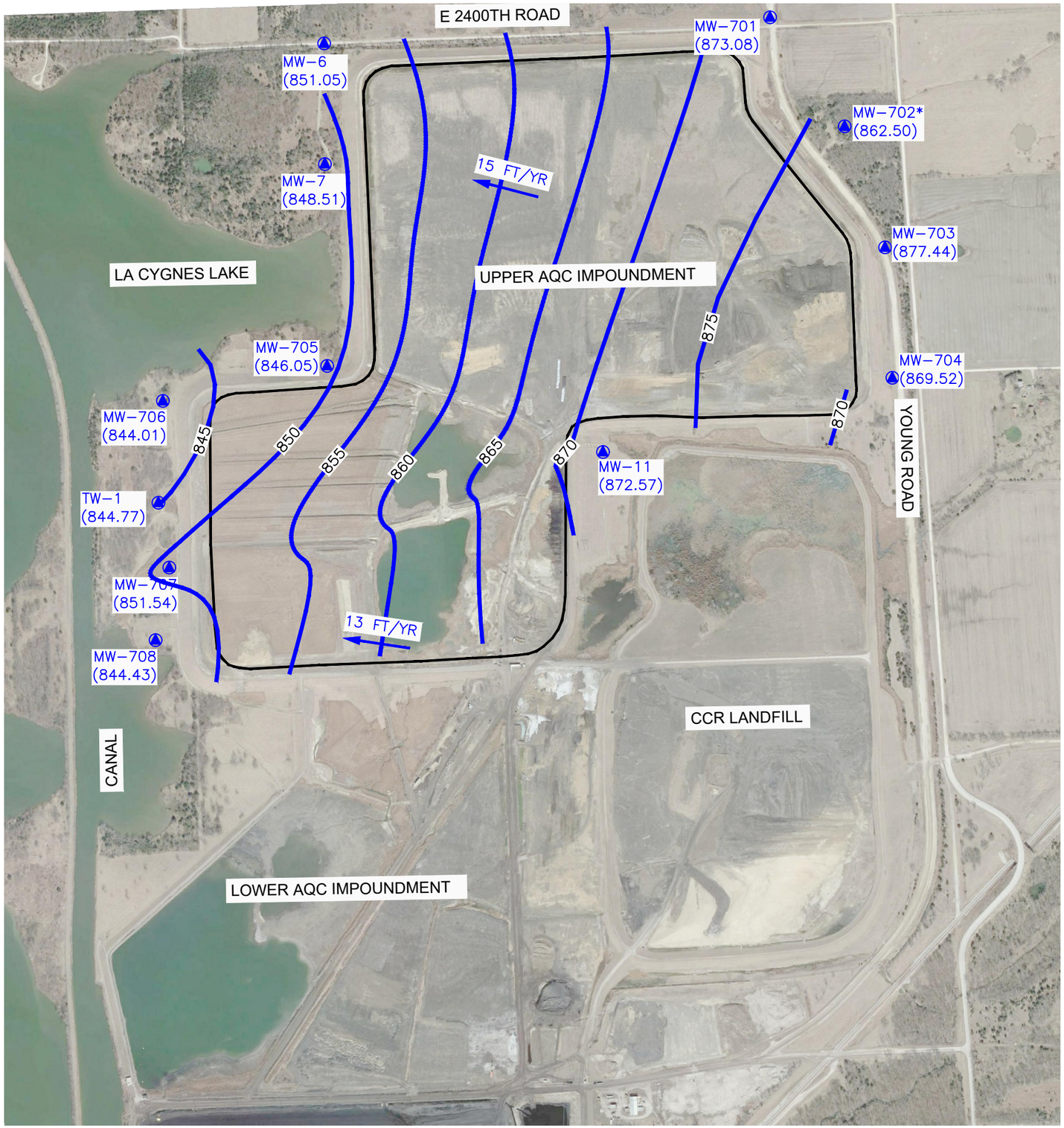
PROJ. NO. 27217233.20
DSN. BY: DAW
DWN. BY: MBJ
CHK. BY: JF
O/A RVW BY: JRR
PROJ. MGR: JRR

CADD FILE:
LA CYGNE LF LAQC IMP & UAQC FIG _MAY 2020 COMBINED V2.DWG

DATE:
11/29/22

FIGURE NO.
2

N:\KCPL\Projects\Groundwater\DWG\La Cygne\2020\La Cygne LF LAQC Imp & UAQC Fig _May 2020 combined V2.dwg Nov 29, 2022 - 4:28pm Layout Name: Fig 2 Upper By: swyly



LEGEND

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS OF UPPER AQC IMPOUNDMENT)
- MW-703 (877.00) — CCR GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
- —875— GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS (REPRESENTATIVE FOR THIS UNIT)
- MW-702* — INDICATES WELL NOT USED IN POTENTIOMETRIC SURFACE MAP CREATION
- 15 FT/YR — DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

NOTES:

1. KDHE FACILITY PERMIT AND LANDFILL PERMIT BOUNDARIES VARY FROM THAT SHOWN.
2. GOOGLE EARTH IMAGE DATED MARCH 2020. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE.
3. BOUNDARY AND MONITOR WELL LOCATIONS ARE PROVIDED BY AECOM.
4. WATER LEVEL MEASUREMENTS COMPLETED ON NOVEMBER 12, 2020.

N

800 0 800 1600

SCALE FEET

REV.	DATE	CK. BY
0	-	-
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-

SHEET TITLE
POTENTIOMETRIC SURFACE MAP (NOVEMBER 2020)
UAQC IMPOUNDMENT

PROJECT TITLE
2020 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM

CLIENT
EVERGY METRO, INC
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

SCS ENGINEERS
8575 W. 110th St, Ste. 100
Overland Park, Kansas 66210
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO.	DWN. BY:	CHK. BY:	QA/QC BY:	PROJ. MGR
27217233.20	MBJ	JF	JRR	JRR
DSN. BY: DAW				

CADD FILE:
LA CYGNE LF LAQC IMP. & UAQC FIG 1_NOVEMBER 2020 - COMBINED V2.DWG

DATE:
11/29/22

FIGURE NO.
3

N:\KCPL\Projects\Groundwater\DWG\La Cygne\2020\La Cygne LF LAQC Imp & UAQC Fig 1_NOVEMBER 2020 - COMBINED V2.dwg Nov 29, 2022 - 7:53pm Layout Name: Fig 1 Upper By: swyly