2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CCR LANDFILL
IATAN GENERATING STATION
PLATTE COUNTY, MISSOURI

Presented To:
Evergy Metro, Inc.

SCS ENGINEERS

27213167.21 | January 2022, Revised 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 Registered Geologist in the State of Missouri, do hereby certify that the 2021 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Iatan Generating Station was prepared by me or under my direct supervision and fulfills the requirements of 40 CFR 257.90(e).

John R. Rockhold, R.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Missouri, do hereby certify that the 2021 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Iatan 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 Section	Summary of Revisions
0	January 2022	NA	Original Report.
1	December 16, 2022	Addendum 1	Added Addendum 1

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Section **Page**

Appendices

1 INTRODUCTION

This 2021 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 2021 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Iatan 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, 2021), the CCR Landfill 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, 2021), the CCR Landfill 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 2020	MW-10	Calcium	Successful
Fall 2020	MW-10	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 CCR Landfill and all background (or upgradient) and downgradient monitoring wells with identification numbers for the CCR Landfill groundwater monitoring program is provided as **Figure 1** in **Appendix A**.

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

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

No new monitoring wells were installed and no wells were decommissioned as part of the CCR groundwater monitoring program for the CCR Landfill in 2021.

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 (2021). Samples collected in 2021 were collected and analyzed for Appendix III detection monitoring constituents. Results of the sampling events are provided in **Appendix B**, **Table 1** (Appendix III Detection Monitoring Results), and **Table 2** (Detection Monitoring Field Measurements). These tables include Fall 2020 semiannual detection monitoring event verification sample data collected and analyzed in 2021; Spring 2021 semiannual detection monitoring data, verification sample data; and, the initial Fall 2021 semiannual detection monitoring data. The dates of sample collection 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 2021. Only detection monitoring was conducted in 2021.

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 2020 verification sampling and analyses per the certified statistical method,

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

c. completion of the 2020 Annual Groundwater Monitoring and Corrective Action Report,

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

e. completion of the Spring 2021 semiannual detection monitoring sampling and analysis event with subsequent verification sampling per the certified statistical method,

f. completion of the statistical evaluation of the Spring 2021 semiannual detection monitoring sampling and analysis event per the certified statistical method, and

g. initiation of the Fall 2021 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 (2022).

Completion of verification sampling and data analysis, and the statistical evaluation of Fall 2021 detection monitoring sampling and analysis event. Semiannual Spring and Fall 2022 groundwater sampling and analysis. Completion of the statistical evaluation of the Spring 2022 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**:

CCR Groundwater Monitoring Alternative Source Demonstration Report November 2020 Groundwater Monitoring Event, CCR Landfill, Iatan Generating Station (May 2021).

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 Iatan 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 Iatan Generating Station CCR Landfill. No warranties, express or implied, are intended or made.

APPENDIX A

FIGURES

Figure 1: Site Map

Figure 2: Potentiometric Surface Map (May 2021)

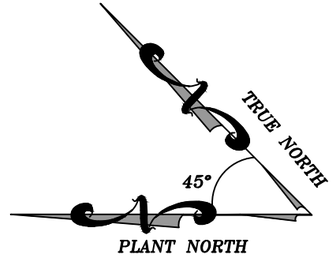
Figure 3: Potentiometric Surface Map (November 2021)

LEGEND:

- MW–1 — CCR GROUNDWATER MONITORING WELL SYSTEM
- UTILITY WASTE LANDFILL UNIT BOUNDARY

NOTES:

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED FEBRUARY 2020. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE
4. BOUNDARY AND MONITOR WELL LOCATIONS PROVIDED BY BURNS & MCDONNELL
5. CCR LANDFILL UNIT BOUNDARY SHOWN IS APPROXIMATE.



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SHEET TITLE: SITE MAP
CCR LANDFILL
CCR GROUNDWATER MONITORING SYSTEM

PROJECT TITLE: 2021 GROUNDWATER MONITORING AND CORRECTION ACTION REPORT

CLIENT: KANSAS CITY POWER & LIGHT COMPANY
IATAN GENERATING STATION
IATAN, MISSOURI

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PROJ. NO. 27213167.20 | DSN. BY: ALR | CHK. BY: JRR | Q/A RVW BY: JRR | PROJ. MGR JRR

CADD FILE: IATAN LF CCR BASE 2021.DWG

DATE: 1/11/22

FIGURE NO. 1

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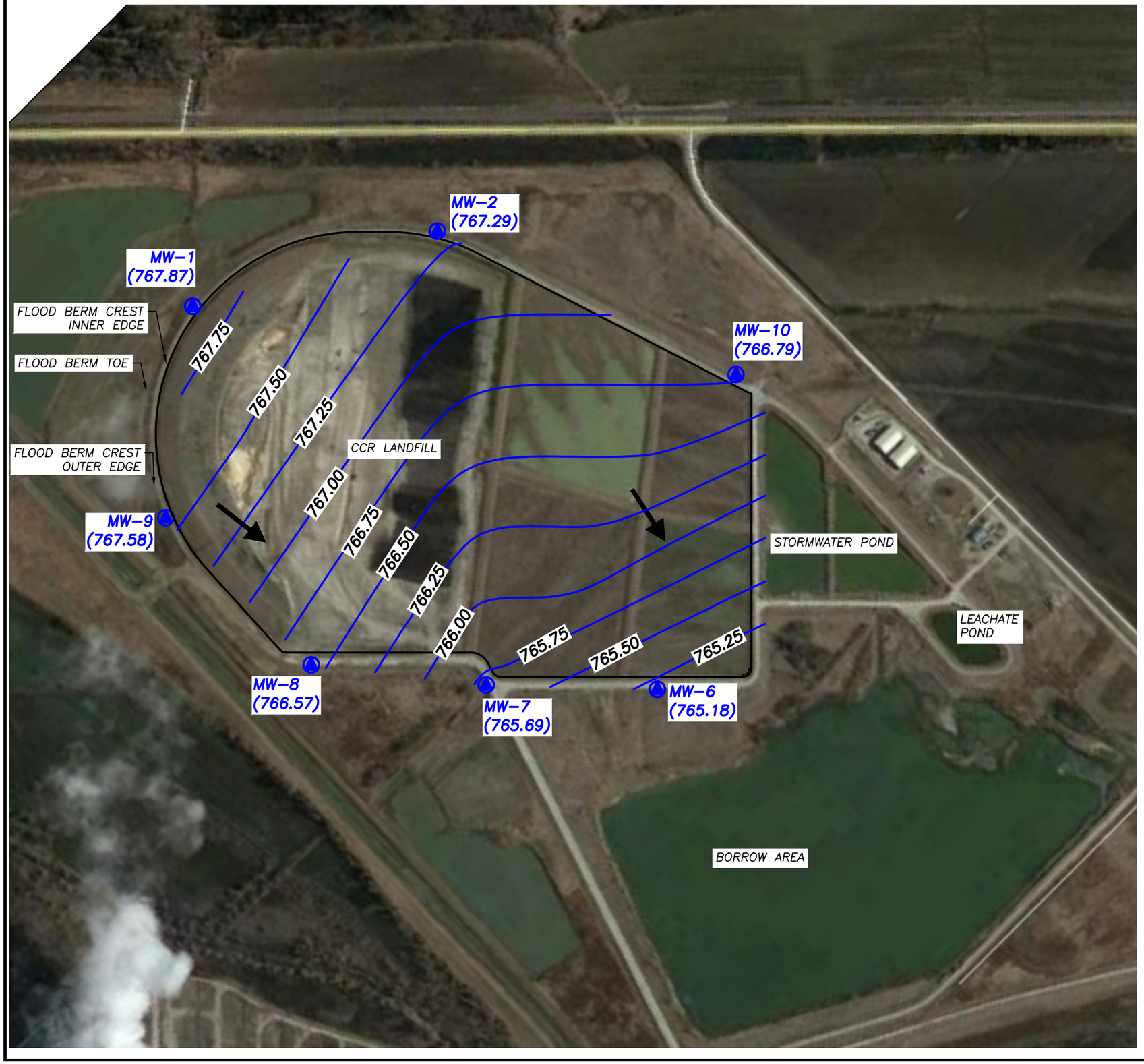


LEGEND:

—767.0— GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS

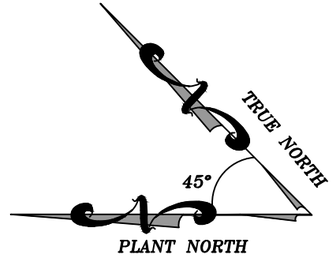
MW–1 773.09 CCR GROUNDWATER MONITORING WELL SYSTEM

CCR LANDFILL UNIT BOUNDARY

GROUNDWATER FLOW DIRECTION

NOTES:

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED FEBRUARY 20, 2020. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE
4. BOUNDARY AND MONITOR WELL LOCATIONS PROVIDED BY BURNS & MCDONNELL
5. MONITOR WELL LOCATIONS AND CCR LANDFILL UNIT BOUNDARY SHOWN ARE APPROXIMATE.



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SHEET TITLE: POTENTIOMETRIC SURFACE MAP (MAY 2021)

PROJECT TITLE: IATAN GROUNDWATER 2021

CLIENT: EVERGY METRO, INC.
IATAN GENERATING STATION
IATAN, MISSOURI

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8575 W. 110th St. Ste. 100
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PROJ. NO. 27213167.21 | DSN. BY: TGW | DWN. BY: ALR | CHK. BY: JRR | Q/A RVW BY: JRR | PROJ. MGR: JRR

CADD FILE: IATAN LF FIG 2 MAY 2021 V.3.DWG

DATE: 1/26/22

FIGURE NO. 2

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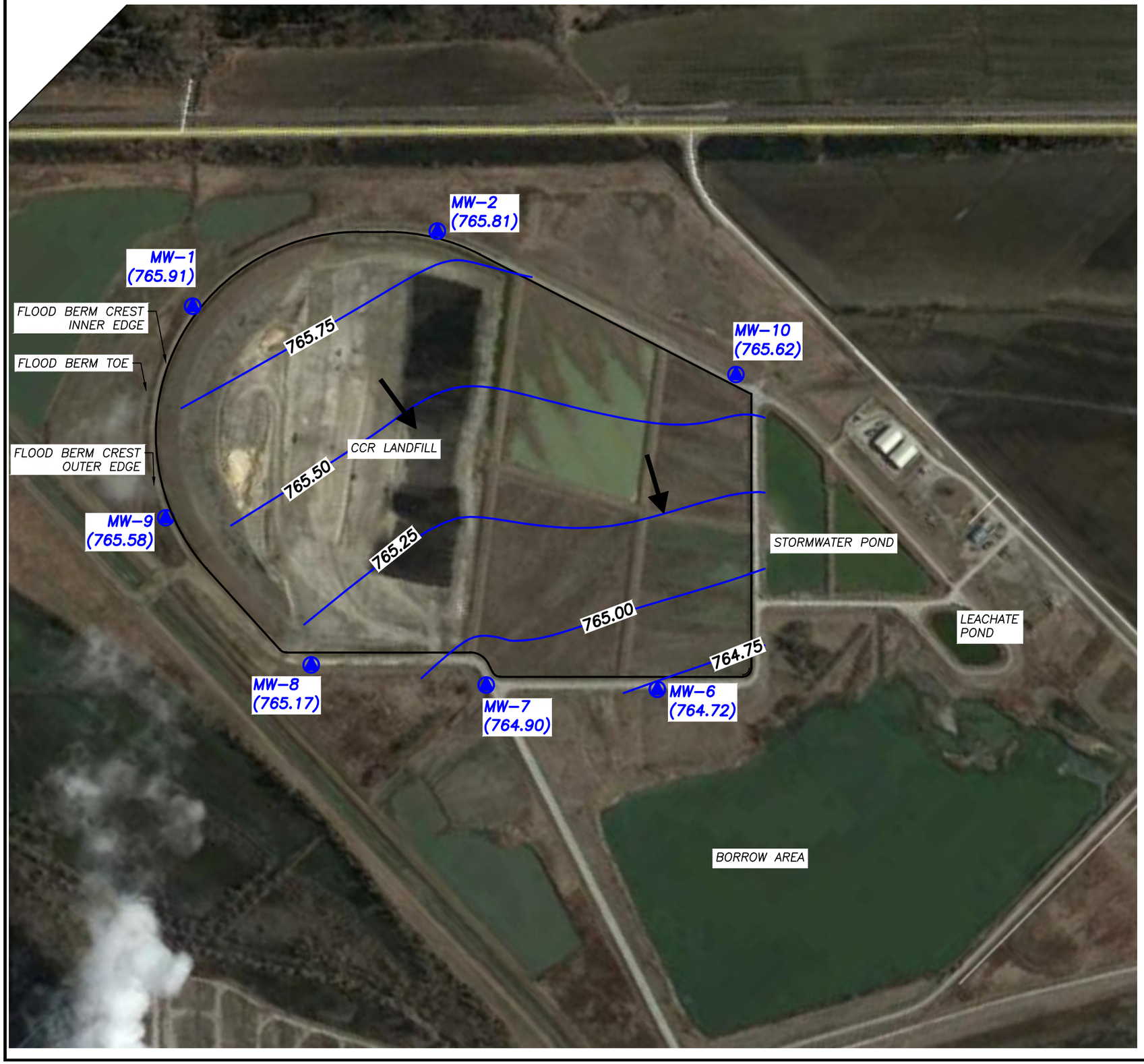
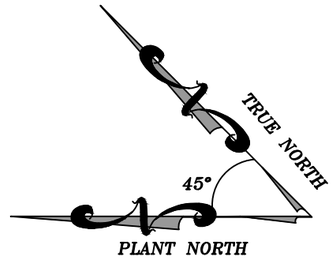


LEGEND:

- —767.0— GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS
- MW–1 773.09 CCR GROUNDWATER MONITORING WELL SYSTEM
- CCR LANDFILL UNIT BOUNDARY
- GROUNDWATER FLOW DIRECTION

NOTES:

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED FEBRUARY 20, 2020. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE
4. BOUNDARY AND MONITOR WELL LOCATIONS PROVIDED BY BURNS & MCDONNELL
5. MONITOR WELL LOCATIONS AND CCR LANDFILL UNIT BOUNDARY SHOWN ARE APPROXIMATE.



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4	-	-
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SHEET TITLE
POTENTIOMETRIC SURFACE MAP
(NOVEMBER 2021)

PROJECT TITLE
IATAN GROUNDWATER 2021

CLIENT
EVERGY METRO, INC.
IATAN GENERATING STATION
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PROJ. NO. 27213167.21 | DSN. BY: TCW | DWN. BY: ALR | CHK. BY: JRR | Q/A RVW BY: JRR | PROJ. MGR: JRR

CADD FILE:
IATAN LF FIG 2 NOVEMBER 2021 V2.DWG

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1/26/22

FIGURE NO.
3

APPENDIX B

TABLES

Table 1: Appendix III Detection Monitoring Results

Table 2: Detection Monitoring Field Measurements

Table 1
CCR Landfill
Appendix III Detection Monitoring Results
Evergy Iatan Generating Station

Well Number	Sample Date	Appendix III Constituents						
		Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
MW-1	02/02/21	---	---	---	---	**7.36	---	*484
MW-1	05/20/21	<0.200	137	5.59	0.257	7.34	33.3	500
MW-1	11/17/21	<0.200	152	6.48	0.314	6.89	35.4	537
MW-2	05/20/21	<0.200	167	6.45	0.316	7.05	126	611
MW-2	11/17/21	<0.200	165	6.68	0.371	6.80	114	595
MW-6	02/02/21	---	*164	---	---	**6.97	---	---
MW-6	03/01/21	---	*153	---	---	**7.15	---	---
MW-6	05/20/21	<0.200	188	2.75	0.274	6.26	46.9	619
MW-6	07/20/21	---	*147	*1.56	---	*6.93	*31.6	*542(H)
MW-6	08/04/21	---	---	---	---	**6.99	---	*550
MW-6	11/17/21	<0.200	147	2.12	0.344	7.08	32.2	508
MW-7	05/20/21	<0.200	148	6.03	0.342	6.40	57.2	513
MW-7	07/20/21	---	---	---	---	*7.54	---	---
MW-7	11/17/21	<0.200	112	1.72	0.383	7.05	31.0	446
MW-8	02/02/21	---	---	*8.22	---	**7.18	---	*518
MW-8	05/20/21	<0.200	127	1.34	0.364	6.50	17.3	426
MW-8	07/20/21	---	---	---	---	*7.87	---	---
MW-8	11/17/21	<0.200	178	14.4	0.404	7.17	91.0	640
MW-9	02/02/21	---	*106	---	---	**7.00	---	---
MW-9	05/20/21	<0.200	98.4	<1.00	0.367	6.48	19.7	384
MW-9	07/20/21	---	---	---	---	*7.33	---	---
MW-9	11/17/21	<0.200	106	<1.00	0.440	7.04	19.2	394
MW-10	02/02/21	---	*160	---	---	**7.08	*46.7	---
MW-10	03/01/21	---	*160	---	---	**7.08	*48.4	---
MW-10	05/20/21	<0.200	148	16.5	0.457	6.32	46.7	628
MW-10	07/20/21	---	---	---	---	*6.93	*38.6	---
MW-10	11/17/21	<0.200	131	17.6	0.629	7.01	35.7	491

* 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
(H) Out of Hold Analysis

Table 2
CCR Landfill
Detection Monitoring Field Measurements
Evergy Iatan 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-1	02/02/21	**7.36	800	11.6	4.3	-68	0.00	22.28	766.41
MW-1	05/20/21	7.34	880	14.33	2.9	-141	1.96	20.82	767.87
MW-1	11/17/21	6.89	938	13.88	3.9	-128	0.00	22.78	765.91
MW-2	05/20/21	7.05	1030	15.22	5.1	-143	3.44	22.32	767.29
MW-2	11/17/21	6.80	1040	14.07	5.0	-126	0.00	23.80	765.81
MW-6	02/02/21	**6.97	1050	14.26	0.0	-119	0.32	24.48	765.17
MW-6	03/01/21	**7.15	896	14.20	5.9	-118	2.53	25.26	764.39
MW-6	05/20/21	6.26	1140	16.00	0.0	-137	0.00	24.47	765.18
MW-6	07/20/21	*6.93	846	17.08	7.9	-119	0.42	23.53	766.12
MW-6	08/04/21	**6.99	843	17.11	4.5	-99	0.69	24.05	765.60
MW-6	11/17/21	7.08	921	14.96	2.1	-132	0.00	24.93	764.72
MW-7	05/20/21	6.40	786	15.84	0.0	-47	0.00	23.96	765.69
MW-7	07/20/21	*7.54	765	15.55	6.1	-59	0.00	23.34	766.31
MW-7	11/17/21	7.05	789	14.36	11.6	-57	1.76	24.75	764.90
MW-8	02/02/21	**7.18	964	14.00	8.8	-89	0.40	24.41	765.30
MW-8	05/20/21	6.50	885	15.81	0.0	-102	0.00	23.14	766.57
MW-8	07/20/21	*7.87	903	15.60	7.1	-137	0.00	23.15	766.56
MW-8	11/17/21	7.17	1050	14.52	3.7	-106	5.60	24.54	765.17
MW-9	02/02/21	**7.00	676	10.67	30.9	-84	0.00	23.84	766.06
MW-9	05/20/21	6.48	715	16.49	0.0	-131	0.00	22.32	767.58
MW-9	07/20/21	*7.33	684	17.86	38.1	-156	0.95	22.61	767.29
MW-9	11/17/21	7.04	747	13.87	13.9	-118	0.00	24.32	765.58
MW-10	02/02/21	**7.08	1060	11.79	3.3	-20	0.00	23.22	766.24
MW-10	03/01/21	**7.08	1080	14.59	17.2	-32	2.51	24.29	765.17
MW-10	05/20/21	6.32	1140	16.39	0.0	-85	0.00	22.67	766.79
MW-10	07/20/21	*6.93	948	16.36	0.0	-23	0.25	22.24	767.22
MW-10	11/17/21	7.01	1080	14.61	0.0	-78	0.00	23.84	765.62

* Verification Sample obtained per certified statistical method and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009.
**Extra Sample for Quality Control Validation or per Standard Sampling Procedure
S.U. - Standard Units
µS - microsiemens
°C - Degrees Celsius
ft btoc - Feet Below Top of Casing
ft NGVD - National Geodetic Vertical Datum (NAVD 88)
NTU - Nephelometric Turbidity Unit

APPENDIX C

CCR Groundwater Monitoring Alternative Source Demonstration Report November 2020 Groundwater Monitoring Event, CCR Landfill, Iatan Generating Station (May 2021)

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

CCR LANDFILL

Iatan Generating Station
Evergy Metro, Inc.
Platte County, Missouri

SCS ENGINEERS

May 2021
File No. 27213167.20

8575 W. 110th Suite 100
Overland Park, KS 66210
913-749-0700

CERTIFICATIONS

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

John R. Rockhold, R.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Missouri, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill at the Iatan 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 Landfill at the Iatan Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Groundwater samples were collected on November 9, 2020. Review and validation of the results from the November 2020 Detection Monitoring Event was completed on December 18, 2020, which constitutes completion and finalization of detection monitoring laboratory analyses. 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 February 2, 2021 and March 1, 2021.

The completed statistical evaluation identified two Appendix III constituents above the prediction limits established for monitoring well MW-10.

Constituent/Monitoring Well	*UPL	Observation November 9, 2020	1st Verification February 2, 20201	2nd Verification March 1, 2021
Calcium				
MW-10	154.2	158	160	160
Sulfate				
MW-10	39.5	42.3	46.7	48.4

*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 SSIs above the background prediction limits for calcium and sulfate at monitoring well MW-10.

3 ALTERNATIVE SOURCE DEMONSTRATION

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

3.1 BOX AND WHISKERS PLOTS

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

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

Box and whiskers plots for all of the groundwater monitoring system wells were prepared to allow comparison of the calcium and sulfate concentrations between MW-10 and the other monitoring wells both upgradient and downgradient. The calcium box and whiskers plot for MW-10 indicates the calcium concentrations at MW-10 are within or below the concentration ranges for the other wells. The sulfate box and whiskers plot for MW-10 indicates the sulfate concentrations at MW-10 are within or below the concentration ranges for the other wells. Box and whisker plots are provided in **Appendix A**. Additionally, MW-10 is located upgradient of the landfill for this sampling event as shown on the potentiometric surface map provided in **Appendix B**. This demonstrates that a source other than the CCR Landfill caused the SSI over background levels, or that the SSI resulted from natural variation in groundwater quality.

3.2 PIPER DIAGRAM PLOTS

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

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

Potassium (K), Calcium (Ca), Magnesium (Mg), Chloride (Cl), Sulfate (SO_4), Carbonate (CO_3), and Bicarbonate (HCO_3).

A piper diagram generated for MW-10 and leachate is provided in **Appendix C** along with analytical results. The piper diagram indicates the groundwater from monitoring well MW-10 does not plot near where the leachate plots and is not trending toward the leachate over time. Therefore, the groundwater from MW-10 does not exhibit the same geochemical characteristics as the leachate. The groundwater and the leachate plot in totally different hydrochemical facies indicating there is no mixing of the two types of water (groundwater and leachate). This demonstrates that a source other than the CCR Landfill caused the SSI over background levels or that the SSI resulted from natural variation in groundwater quality.

3.3 TIME SERIES PLOTS

Time series plots provide a graphical method to view changes in data at a particular well (monitoring point) or wells over time. Time series plots display the variability in concentration levels over time and can be used to indicate possible outliers or data errors (i.e. "spikes"). 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.

The time series plot for calcium and sulfate at monitoring well MW-10 was compared to the time series plot for sulfate at the other monitoring wells both upgradient and downgradient. The sulfate time series plot for MW-10 indicates the sulfate concentrations in MW-10 are generally below the concentrations in the other wells both upgradient and downgradient. The sulfate time series plot for MW-10 indicates the sulfate concentrations in MW-10 are generally below the concentrations in the other wells both upgradient and downgradient. This demonstrates that a source other than the CCR Landfill caused the SSI over background levels, or that the SSI resulted from natural variation in groundwater quality. Time series plots 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 CCR Landfill caused the SSIs over background levels, or that the SSIs resulted from natural variation in groundwater quality. Based on the successful ASD, the owner or operator of the CCR Landfill may continue with the detection monitoring program under § 257.94.

5 GENERAL COMMENTS

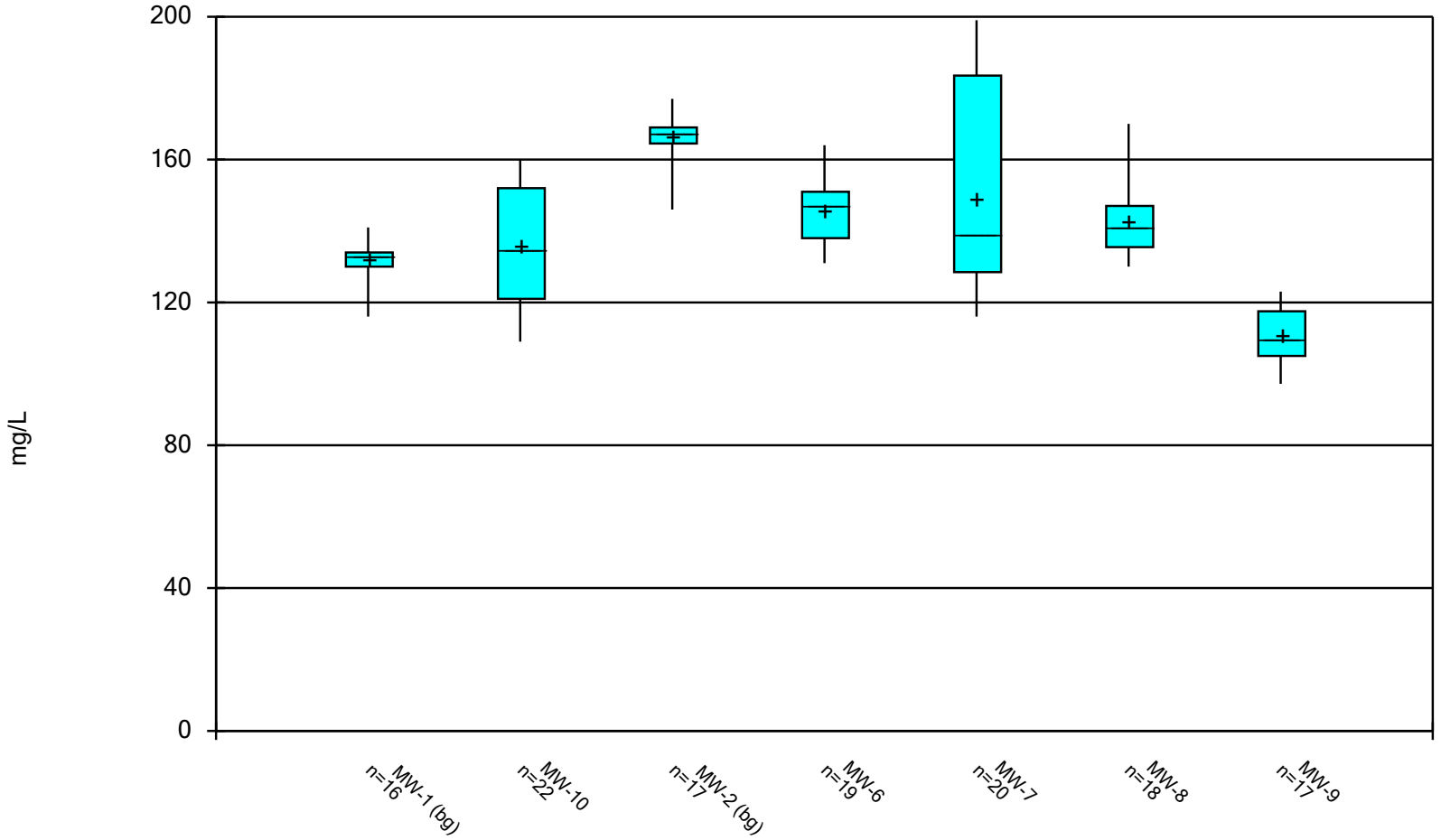
This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of Evergy Metro, Inc. for specific application to the Iatan 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

Box and Whiskers Plots

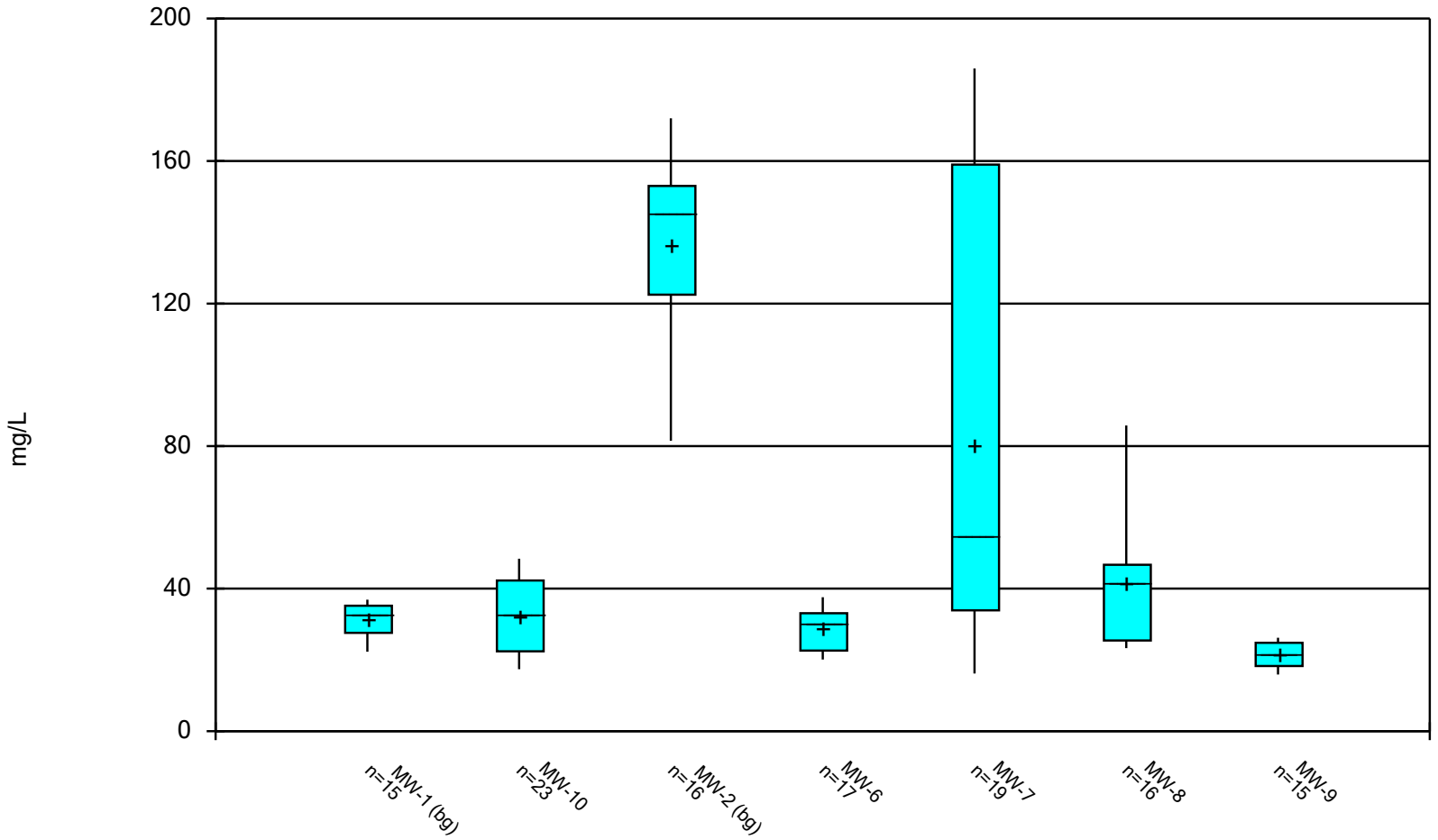
Box & Whiskers Plot



Constituent: Calcium Analysis Run 4/28/2021 8:10 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Box & Whiskers Plot



Constituent: Sulfate Analysis Run 4/28/2021 8:10 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

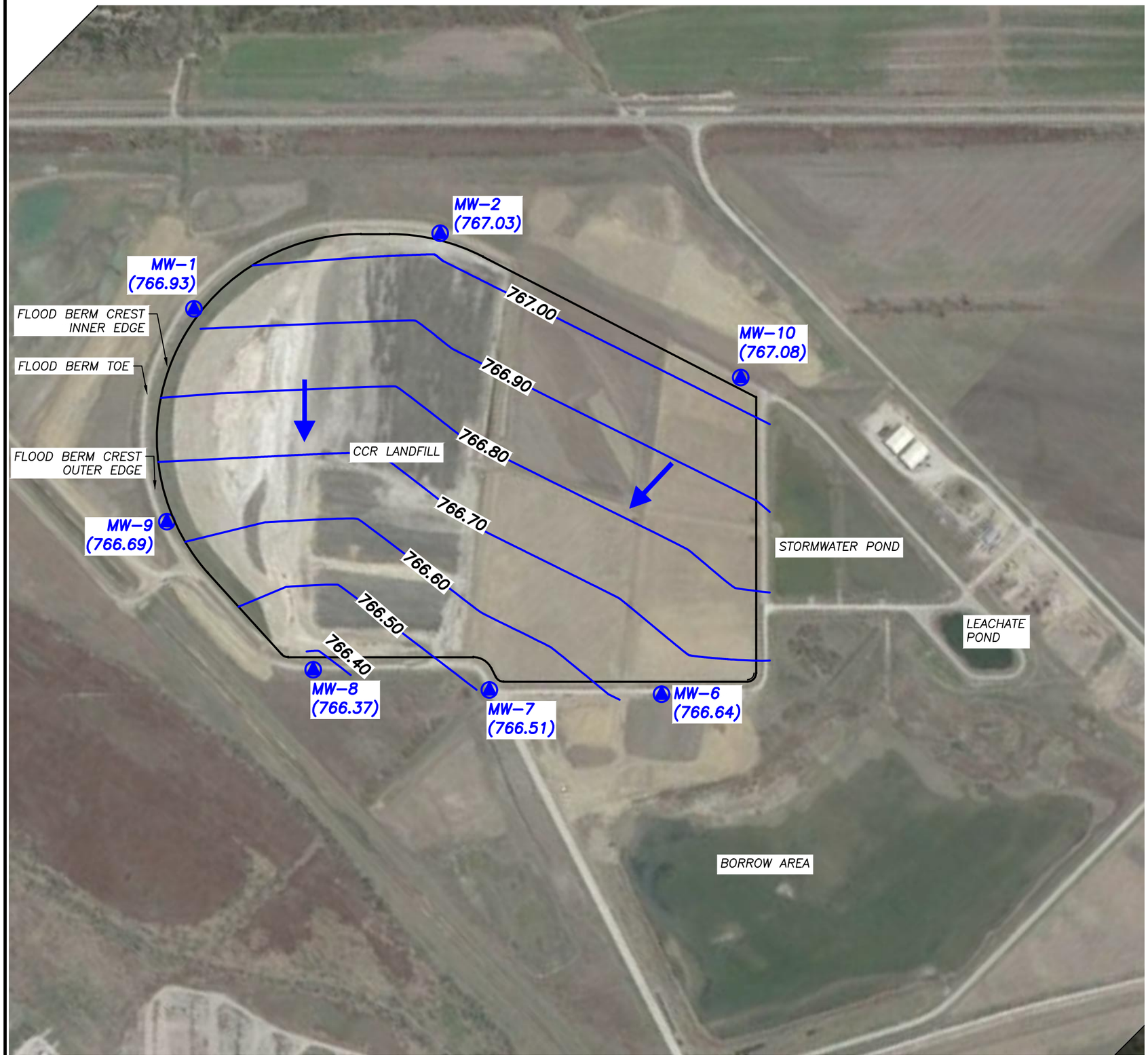
Box & Whiskers Plot

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr Printed 4/28/2021, 8:12 AM

Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Calcium (mg/L)	MW-1 (bg)	16	131.9	5.372	1.343	133	116	141	0
Calcium (mg/L)	MW-10	22	136	16.85	3.593	134.5	109	160	0
Calcium (mg/L)	MW-2 (bg)	17	166.4	6.509	1.579	167	146	177	0
Calcium (mg/L)	MW-6	19	146.1	8.953	2.054	147	131	164	0
Calcium (mg/L)	MW-7	20	149.3	27.33	6.112	139	116	199	0
Calcium (mg/L)	MW-8	18	142.9	10.01	2.36	141	130	170	0
Calcium (mg/L)	MW-9	17	110.7	7.577	1.838	110	97.2	123	0
Sulfate (mg/L)	MW-1 (bg)	15	31.48	4.407	1.138	32.6	22.3	36.9	0
Sulfate (mg/L)	MW-10	23	32.21	10.8	2.253	33	17.4	48.4	0
Sulfate (mg/L)	MW-2 (bg)	16	136.6	24.1	6.026	145.5	81.5	172	0
Sulfate (mg/L)	MW-6	17	28.84	5.89	1.428	30.2	20.1	37.6	0
Sulfate (mg/L)	MW-7	19	80.61	61.89	14.2	54.4	16.2	186	0
Sulfate (mg/L)	MW-8	16	41.38	16.28	4.069	41.85	23.3	85.8	0
Sulfate (mg/L)	MW-9	15	21.44	3.34	0.8624	21.5	15.9	26.2	0

Appendix B

Potentiometric Surface Map



LEGEND:

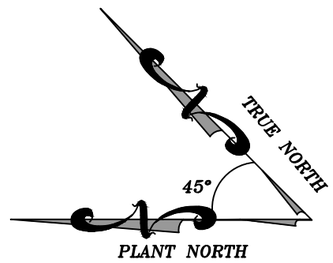
—767.0— GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS

MW–1 773.09 CCR GROUNDWATER MONITORING WELL SYSTEM

UTILITY WASTE LANDFILL UNIT BOUNDARY

NOTES:

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED FEBRUARY 20, 2020. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE
4. BOUNDARY AND MONITOR WELL LOCATIONS PROVIDED BY BURNS & MCDONNELL
5. MONITOR WELL LOCATIONS AND CCR LANDFILL UNIT BOUNDARY SHOWN ARE APPROXIMATE.



500 0 500 1000

SCALE FEET

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

SHEET TITLE
POTENTIOMETRIC SURFACE MAP
(NOVEMBER 2020)

PROJECT TITLE
IATAN GROUNDWATER 2020

CLIENT
EVERGY METRO, INC.
IATAN GENERATING STATION
IATAN, MISSOURI

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

PROJ. NO. 27213167.20
DSN. BY: TGW
DWN. BY: ALR
CHK. BY: JRR
Q/A RVW BY: JRR
PROJ. MGR: JRR

CADD FILE:
IATAN LF CCR MDNR FIG 2 NOV20 V3.DWG

DATE: 5/12/21

FIGURE NO. 1

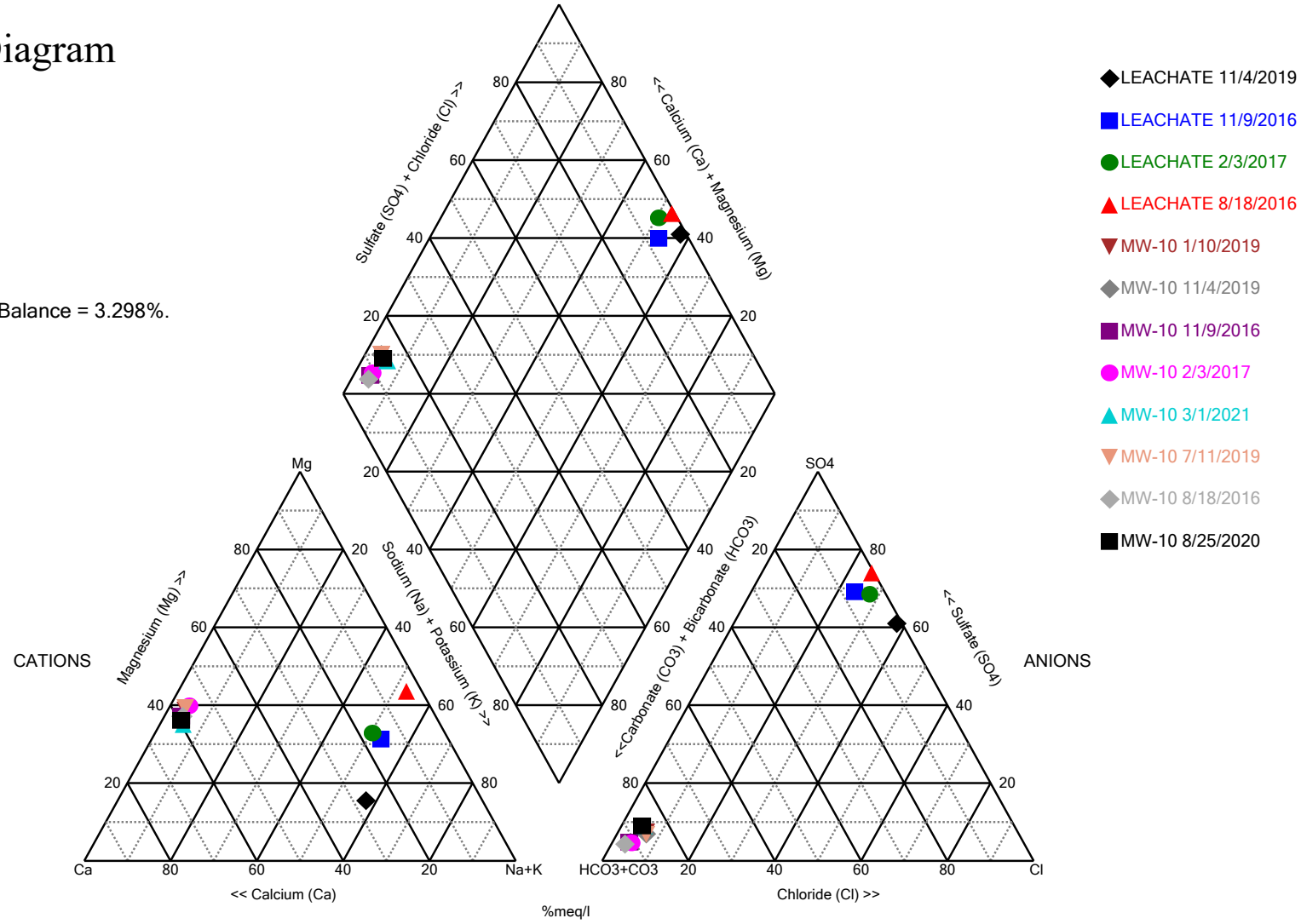
N:\KCPL\Projects\Groundwater\DWG\Iatan\2020\Groundwater\Landfill\NOVEMBER 2020\Iatan LF CCR MDNR Fig 2 NOV20 v3.dwg May 12, 2021 - 9:02am Layout Name: Fig 2-CCR By: 4415alr

Appendix C

Piper Diagram Plots and Analytical Results

Piper Diagram

Cation-Anion Balance = 3.298%.



Analysis Run 4/2/2021 4:17 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Piper Diagram

Analysis Run 4/2/2021 4:19 PM View: CCR LF III

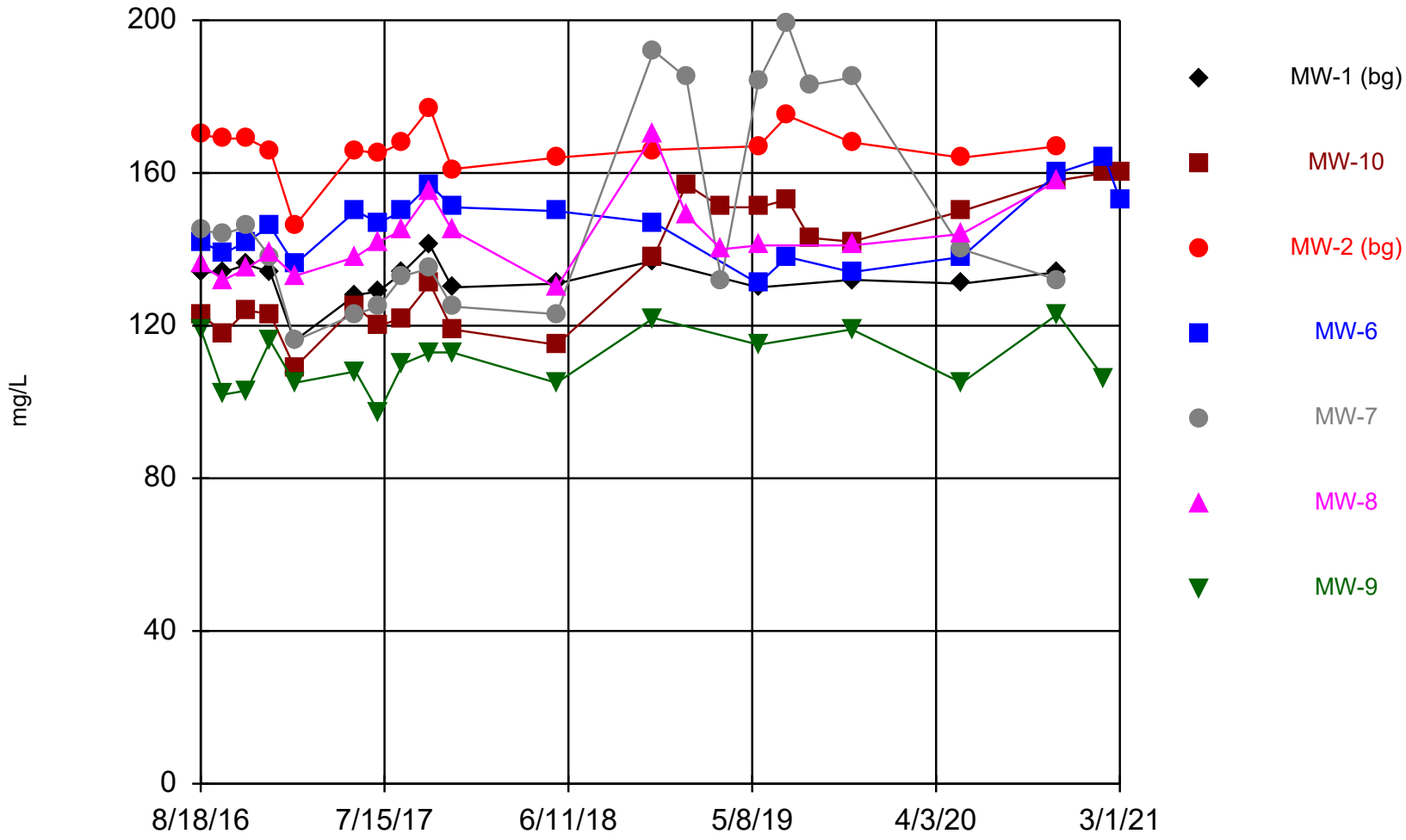
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Totals (ppm)	Na	K	Ca	Mg	Cl	SO4	HCO3	CO3
MW-10 8/18/2016	7.77	4.45	123	47.3	7.47	17.8	480	10
MW-10 11/9/2016	7.11	4.02	124	47.3	9.15	17.4	428	10
MW-10 2/3/2017	7.2	3.93	109	46.7	10.3	19.1	442	10
MW-10 1/10/2019	8.51	5.08	157	64.3	21	38	555	10
MW-10 7/11/2019	8.12	5.11	153	63.8	22.5	33	537	10
MW-10 11/4/2019	7.41	4.57	142	54.2	21.6	33.6	526	10
MW-10 8/25/2020	11.9	4.51	163	59.1	16.4	47.9	589	10
MW-10 3/1/2021	14.9	4.56	160	56.5	17.1	48.4	570	10
LEACHATE 8/18/2016	9250	689	573	4240	6990	28000	644	10
LEACHATE 11/9/2016	1230	90.7	334	398	876	3460	480	10
LEACHATE 2/3/2017	1880	121	560	671	1760	6070	505	10
LEACHATE 11/4/2019	1110	51.7	460	163	2340	5230	206	10

Appendix D

Time Series Plots

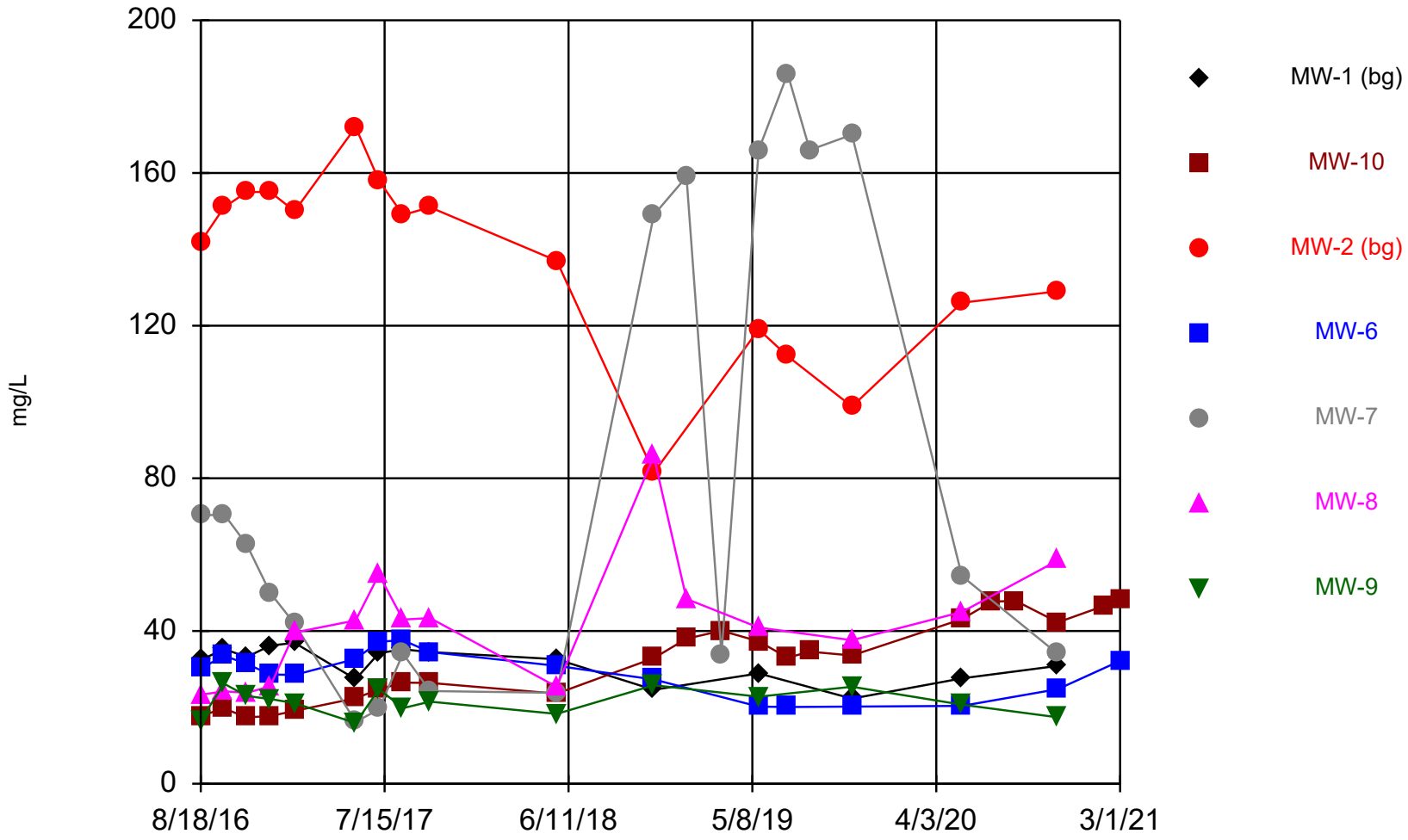
Time Series



Constituent: Calcium Analysis Run 4/28/2021 8:05 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Time Series



Constituent: Sulfate Analysis Run 4/28/2021 8:05 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

ADDENDUM 1

2021 Annual Groundwater Monitoring and Corrective Action Report
Addendum 1

December 16, 2022
File No. 27213167.21

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: 2021 Annual Groundwater Monitoring and Corrective Action Report Addendum 1
Evergy Metro, Inc.
CCR Landfill
Iatan Generating Station – Platte County, Missouri

The CCR Landfill at the Iatan Generating Station is subject to the groundwater monitoring and corrective action requirements of the "Coal Combustion Residuals (CCR) Final Rule" (Rule); as described in CFR 40 257.90 through CFR 40 257.98. An Annual Groundwater Monitoring and Corrective Action (GWMCA) Report documenting activities completed in 2021 for the CCR Landfill was completed and placed in the facility's operating record on January 28, 2022, as required by the Rule. The Annual GWMCA report was to fulfill the requirements specified in 40 CFR 257.90(e).

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

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

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

The attachments to this addendum are as follows:

- Attachment 1 – Laboratory Analytical Reports:

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

  - February 2021 – First verification sampling for the Fall 2020 detection monitoring event.
  - March 2021 – Second verification sampling for the Fall 2020 detection monitoring event.
  - May 2021 – Spring 2021 semiannual detection monitoring sampling event.
  - July 2021 – First verification sampling for the Spring 2021 detection monitoring sampling event.
  - November 2021 - Fall 2021 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 2021 included the following:

  - Fall 2020 semiannual detection monitoring statistical analyses.
  - Spring 2021 semiannual detection monitoring statistical analyses.

- Attachment 3 - 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 2021 - Spring 2021 semiannual detection monitoring sampling event.
  - November 2021 - Fall 2021 semiannual detection monitoring sampling event.

Jared Morrison
December 16, 2022

ATTACHMENT 1

Laboratory Analytical Reports

Jared Morrison
December 16, 2022

ATTACHMENT 1-1

February 2021 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

February 11, 2021

SCS Engineers - KS

Sample Delivery Group:	L1313833
Samples Received:	02/04/2021
Project Number:	27213167.19
Description:	Evergy - Iatan Generating Station

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

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

MW-1 L1313833-01 GW

Collected by: G. Penaflor | Collected date/time: 02/02/21 15:00 | Received date/time: 02/04/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1617190	1	02/05/21 16:04	02/05/21 19:18	MMF	Mt. Juliet, TN

MW-6 L1313833-02 GW

Collected by: G. Penaflor | Collected date/time: 02/02/21 15:25 | Received date/time: 02/04/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1617975	1	02/08/21 09:27	02/08/21 11:56	EL	Mt. Juliet, TN

MW-8 L1313833-03 GW

Collected by: G. Penaflor | Collected date/time: 02/02/21 14:45 | Received date/time: 02/04/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1617190	1	02/05/21 16:04	02/05/21 19:18	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1618252	1	02/09/21 11:55	02/09/21 11:55	ELN	Mt. Juliet, TN

DUPLICATE 1 L1313833-04 GW

Collected by: G. Penaflor | Collected date/time: 02/02/21 14:45 | Received date/time: 02/04/21 09:00

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Gravimetric Analysis by Method 2540 C-2011	WG1617190	1	02/05/21 16:04	02/05/21 19:18	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1618252	1	02/09/21 12:34	02/09/21 12:34	ELN	Mt. Juliet, TN

MW-9 L1313833-05 GW

Collected by: G. Penaflor | Collected date/time: 02/02/21 14:20 | Received date/time: 02/04/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1617975	1	02/08/21 09:27	02/08/21 11:58	EL	Mt. Juliet, TN

MW-10 L1313833-06 GW

Collected by: G. Penaflor | Collected date/time: 02/02/21 15:40 | Received date/time: 02/04/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1618252	1	02/09/21 13:00	02/09/21 13:00	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1617975	1	02/08/21 09:27	02/08/21 11:40	EL	Mt. Juliet, TN

DUPICATE 2 L1313833-07 GW

Collected by: G. Penaflor | Collected date/time: 02/02/21 15:45 | Received date/time: 02/04/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1618252	1	02/09/21 14:06	02/09/21 14:06	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1617975	1	02/08/21 09:27	02/08/21 11:26	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	484000		10000	1	02/05/2021 19:18	WG1617190

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	164000		1000	1	02/08/2021 11:56	WG1617975

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	518000		10000	1	02/05/2021 19:18	WG1617190

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	8220		1000	1	02/09/2021 11:55	WG1618252

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	488000		10000	1	02/05/2021 19:18	WG1617190

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	8470		1000	1	02/09/2021 12:34	WG1618252

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	106000		1000	1	02/08/2021 11:58	WG1617975

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	46700		5000	1	02/09/2021 13:00	WG1618252

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	160000	V	1000	1	02/08/2021 11:40	WG1617975

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	48000		5000	1	02/09/2021 14:06	WG1618252

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	161000		1000	1	02/08/2021 11:26	WG1617975

Method Blank (MB)

(MB) R3620494-1 02/05/21 19:18

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

L1313833-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1313833-03 02/05/21 19:18 • (DUP) R3620494-4 02/05/21 19:18

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Dissolved Solids	518000	518000	1	0.000		5

Laboratory Control Sample (LCS)

(LCS) R3620494-2 02/05/21 19:18

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8540000	97.0	77.4-123	

Method Blank (MB)

(MB) R3621108-1 02/09/21 09:11

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

L1313833-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1313833-04 02/09/21 12:34 • (DUP) R3621108-5 02/09/21 12:47

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	8470	8260	1	2.58		15
Sulfate	69700	67900	1	2.64		15

L1313779-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1313779-04 02/09/21 16:56 • (DUP) R3621108-8 02/09/21 17:09

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	43400	43500	1	0.121		15

L1313779-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1313779-04 02/10/21 09:46 • (DUP) R3621108-11 02/10/21 09:59

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	136000	132000	5	2.49		15

Laboratory Control Sample (LCS)

(LCS) R3621108-2 02/09/21 09:24

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40000	100	80.0-120	
Sulfate	40000	40700	102	80.0-120	

L1313833-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1313833-03 02/09/21 11:55 • (MS) R3621108-3 02/09/21 12:08 • (MSD) R3621108-4 02/09/21 12:21

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	8220	61200	59000	106	102	1	80.0-120			3.60	15
Sulfate	50000	67800	121000	118000	106	99.8	1	80.0-120	E	E	2.42	15

L1313833-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1313833-06 02/09/21 13:00 • (MS) R3621108-6 02/09/21 13:13 • (MSD) R3621108-7 02/09/21 13:26

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 %
Chloride	50000	17100	67900	68600	102	103	1	80.0-120			1.05	15
Sulfate	50000	46700	96800	97900	100	102	1	80.0-120			1.08	15

L1313779-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1313779-05 02/09/21 17:22 • (MS) R3621108-9 02/09/21 17:35 • (MSD) R3621108-10 02/09/21 17:48

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	108000	155000	160000	93.5	104	1	80.0-120	E	E	3.23	15
Sulfate	50000	87300	136000	141000	97.6	107	1	80.0-120	E	E	3.41	15

Method Blank (MB)

(MB) R3620413-1 02/08/21 11:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3620413-2 02/08/21 11:37

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	9470	94.7	80.0-120	

L1313833-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1313833-06 02/08/21 11:40 • (MS) R3620413-4 02/08/21 11:45 • (MSD) R3620413-5 02/08/21 11:47

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	160000	166000	167000	64.6	75.0	1	75.0-125	V		0.621	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).
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.

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Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
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]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
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Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
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A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
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EPA–Crypto	TN00003		

Pace Analytical National 1313 Point Mallard Parkway SE Suite B Decatur, AL, 35601

Alabama	40160
ANSI National Accreditation Board	L2239

Pace Analytical National 660 Bercut Dr. Ste. C Sacramento, CA, 95811

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Nevada	NV009412021-1

Pace Analytical National 1606 E. Brazos Street Suite D Victoria, TX, 77901

Texas	T104704328-20-18

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

Company Name/Address:
SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

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

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical®
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12065 Lebanon Road Mt Juliet, TN 37122
Phone: 615-758-5858 Alt: 800-767-5859
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Report to: **Jason Franks**

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

Project Description: **Evergy - Iatan Generating Station**

City/State Collected:

Please Circle: PT MT (CT) ET

SDG # L1313833

B109

Phone: **913-681-0030**

Client Project #: **27213167.19**

Lab Project #: **AQUAOPKS-IATAN**

Collected by (print): G. Penaflor

Site/Facility ID #

P.O. #

Collected by (signature): [signature]

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

Quote #

Date Results Needed: Std

Immediately Packed on Ice N___ Y X

Acctnum: **AQUAOPKS**
Template: **T136059**
Prelogin: **P825366**
PM: **206 - Jeff Carr**
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Ca - 6010 250mlHDPE-HNO3	Chloride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-1	GRAB	GW		2/2/21	1500	1				X		-01
MW-6	↓	GW		2/2/21	1525	1	X					02
MW-8	↓	GW		2/2/21	1445	2		X		X		03
DUPLICATE 1	↓	GW		2/2/21	1445	2		X		X		04
MW-8 MS/MSD	↓	GW		2/2/21	1445	2		X		X		05
MW-9	↓	GW		2/2/21	1420	1	X					06
MW-10	↓	GW		↓	1540	2	X		X			07
DUPICATE 2	↓	GW		↓	1545	2	X		X			08
MW-10 MS/MSD	↓	GW		↓	1550	2	X		X			09

* 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
[signature] SCS	02/03/21	1400	Alan Kelsow 2-3-21 1403	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.2-.2=1.0 °C; Bottles Received: 15
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) K Holden	Date: 2/4/21 Time: 9:00

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

A2 Kit 3.2-.2=3.0

Jared Morrison
December 16, 2022

ATTACHMENT 1-2

March 2021 Sampling Event Laboratory Report

ANALYTICAL REPORT

March 10, 2021

SCS Engineers - KS

Sample Delivery Group:	L1322463
Samples Received:	03/03/2021
Project Number:	27213167.20
Description:	Evergy - Iatan Generating Station

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

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

MW-6 L1322463-01 GW

Collected by: April Thompson
Collected date/time: 03/01/21 13:35
Received date/time: 03/03/21 13:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1629877	1	03/08/21 13:22	03/09/21 09:35	KMG	Mt. Juliet, TN

MW-10 L1322463-02 GW

Collected by: April Thompson
Collected date/time: 03/01/21 15:23
Received date/time: 03/03/21 13:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1631305	1	03/09/21 04:09	03/09/21 04:09	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1629877	1	03/08/21 13:22	03/09/21 09:37	KMG	Mt. Juliet, TN

DUPICATE 1 L1322463-03 GW

Collected by: April Thompson
Collected date/time: 03/01/21 15:23
Received date/time: 03/03/21 13:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1631305	1	03/09/21 04:22	03/09/21 04:22	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1629877	1	03/08/21 13:22	03/09/21 09:40	KMG	Mt. Juliet, TN

CASE NARRATIVE

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

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	153000		1000	1	03/09/2021 09:35	WG1629877

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	48400		5000	1	03/09/2021 04:09	WG1631305

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	160000		1000	1	03/09/2021 09:37	WG1629877

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	48500		5000	1	03/09/2021 04:22	WG1631305

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	159000		1000	1	03/09/2021 09:40	WG1629877

Method Blank (MB)

(MB) R3628675-1 03/08/21 10:36

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Sulfate	U		594	5000

L1322458-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1322458-02 03/09/21 03:43 • (DUP) R3628675-5 03/09/21 03:56

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	48300	48300	1	0.0213		15

L1323107-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1323107-06 03/09/21 08:04 • (DUP) R3628675-6 03/09/21 08:17

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	ND	ND	1	8.37		15

Laboratory Control Sample (LCS)

(LCS) R3628675-2 03/08/21 10:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40000	40300	101	80.0-120	

L1322448-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1322448-02 03/09/21 02:30 • (MS) R3628675-3 03/09/21 02:43 • (MSD) R3628675-4 03/09/21 02:56

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 %
Sulfate	50000	107000	156000	156000	99.2	99.3	1	80.0-120	E	E	0.0530	15

L1323107-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1323107-06 03/09/21 08:04 • (MS) R3628675-7 03/09/21 08:30

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Sulfate	50000	ND	53300	105	1	80.0-120	

QUALITY CONTROL SUMMARY

L1322463-01,02,03

Method Blank (MB)

(MB) R3628905-1 03/09/21 08:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3628905-2 03/09/21 08:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	9500	95.0	80.0-120	

L1322438-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1322438-01 03/09/21 08:58 • (MS) R3628905-4 03/09/21 09:03 • (MSD) R3628905-5 03/09/21 09:06

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 %
Calcium	10000	133000	140000	139000	73.7	65.0	1	75.0-125	V	V	0.621	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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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.
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Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
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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.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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

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Company Name/Address:
SCS Engineers - KS
8575 W. 110th Street
Overland Park, KS 66210

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

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Road Mt Juliet, TN 37122
Phone: 615-758-5858 Alt: 800-767-5859
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Report to:
Jason Franks

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

Project Description:
Evergy - Iatan Generating Station

City/State Collected: Weston MO

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project #
27213167.20

Lab Project #
AQUAOPKS-IATAN

SDG # L1322463
1098

Collected by (print): April Thompson

Site/Facility ID #

P.O. #

Acctnum: AQUAOPKS
Template: T136059
Prelogin: P830695
PM: 206 - Jeff Carr
PB:
Shipped Via:

Collected by (signature): A Thompson

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Ca - 6010 250mlHDPE-HNO3	Sulfate 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-6	Grab	GW		3/1/21	1335	1	X			-01
MW-10	Grab	GW		3/1/21	1523	2	X	X		02
DUPICATE 1	Grab	GW		3/1/21	1523	2	X	X		03
~~MW-10 MS/MSD~~		~~GW~~				~~2~~	~~X~~	~~X~~		

* 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 (circled: No) HCL / MeoH TBR
A Thompson	3/2/21	1214	Alan Nelson 3-2-21 1214	

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: [illegible] °C 0.5=.3=.2 °C	Bottles Received: 5	If preservation required by Login: Date/Time

Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:	Hold:	Condition: NCF / OK (circled: OK)
			[signature]	3/3/21	1300		

ANALYTICAL REPORT

March 10, 2021

SCS Engineers - KS

Sample Delivery Group:	L1322458
Samples Received:	03/03/2021
Project Number:	27213167.20
Description:	Evergy Iatan Generating Station

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

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

SAMPLE SUMMARY

MW-6 L1322458-01 GW

Collected by: A. Thompson
Collected date/time: 03/01/21 13:35
Received date/time: 03/03/21 13:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1629824	1	03/05/21 07:06	03/05/21 07:06	SL	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1631305	1	03/09/21 03:22	03/09/21 03:22	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1629877	1	03/08/21 13:22	03/09/21 09:30	KMG	Mt. Juliet, TN

MW-10 L1322458-02 GW

Collected by: A. Thompson
Collected date/time: 03/01/21 15:23
Received date/time: 03/03/21 13:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1629824	1	03/05/21 07:16	03/05/21 07:16	SL	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1631305	1	03/09/21 03:43	03/09/21 03:43	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1629877	1	03/08/21 13:22	03/09/21 09:32	KMG	Mt. Juliet, TN

CASE NARRATIVE

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	474000		20000	1	03/05/2021 07:06	WG1629824
Alkalinity,Carbonate	ND		20000	1	03/05/2021 07:06	WG1629824

Sample Narrative:

L1322458-01 WG1629824: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	1680		1000	1	03/09/2021 03:22	WG1631305
Sulfate	32200		5000	1	03/09/2021 03:22	WG1631305

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Magnesium	32400		1000	1	03/09/2021 09:30	WG1629877
Potassium	4520		2000	1	03/09/2021 09:30	WG1629877
Sodium	5950		3000	1	03/09/2021 09:30	WG1629877

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	570000		20000	1	03/05/2021 07:16	WG1629824
Alkalinity,Carbonate	ND		20000	1	03/05/2021 07:16	WG1629824

Sample Narrative:

L1322458-02 WG1629824: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	17100		1000	1	03/09/2021 03:43	WG1631305

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Magnesium	56500		1000	1	03/09/2021 09:32	WG1629877
Potassium	4560		2000	1	03/09/2021 09:32	WG1629877
Sodium	14900		3000	1	03/09/2021 09:32	WG1629877

Method Blank (MB)

(MB) R3627767-1 03/05/21 03:38

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

L1322190-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1322190-02 03/05/21 04:46 • (DUP) R3627767-2 03/05/21 04:59

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	145000	145000	1	0.147		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1322687-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1322687-02 03/05/21 13:21 • (DUP) R3627767-4 03/05/21 13:35

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	21300	20400	1	4.39		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Method Blank (MB)

(MB) R3628675-1 03/08/21 10:36

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

L1322458-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1322458-02 03/09/21 03:43 • (DUP) R3628675-5 03/09/21 03:56

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	17100	17100	1	0.0421		15
Sulfate	48300	48300	1	0.0213		15

L1323107-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1323107-06 03/09/21 08:04 • (DUP) R3628675-6 03/09/21 08:17

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	63100	63100	1	0.0518		15
Sulfate	ND	ND	1	8.37		15

Laboratory Control Sample (LCS)

(LCS) R3628675-2 03/08/21 10:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40300	101	80.0-120	
Sulfate	40000	40300	101	80.0-120	

L1322448-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1322448-02 03/09/21 02:30 • (MS) R3628675-3 03/09/21 02:43 • (MSD) R3628675-4 03/09/21 02:56

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	10400	63100	63100	105	105	1	80.0-120			0.0472	15
Sulfate	50000	107000	156000	156000	99.2	99.3	1	80.0-120	E	E	0.0530	15

L1323107-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1323107-06 03/09/21 08:04 • (MS) R3628675-7 03/09/21 08:30

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	63100	112000	98.0	1	80.0-120	E
Sulfate	50000	ND	53300	105	1	80.0-120	

Method Blank (MB)

(MB) R3628905-1 03/09/21 08:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Magnesium	U		85.3	1000
Potassium	U		261	2000
Sodium	U		504	3000

Laboratory Control Sample (LCS)

(LCS) R3628905-2 03/09/21 08:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Magnesium	10000	9410	94.1	80.0-120	
Potassium	10000	8930	89.3	80.0-120	
Sodium	10000	9380	93.8	80.0-120	

L1322438-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1322438-01 03/09/21 08:58 • (MS) R3628905-4 03/09/21 09:03 • (MSD) R3628905-5 03/09/21 09:06

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 %
Magnesium	10000	7300	16400	16300	91.2	90.1	1	75.0-125			0.662	20
Potassium	10000	ND	11000	10900	92.3	90.9	1	75.0-125			1.23	20
Sodium	10000	50100	58900	58500	87.2	83.9	1	75.0-125			0.564	20

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Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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
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Company Name/Address:
SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

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

Pres Chk

Report to:
Jason Franks

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

Project Description:
Evergy Iatan Generating Station

City/State Collected: Weston MO

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project #
27213167.210

Lab Project #
AQUAOPKS-IATAN

Collected by (print):
A. Thompson

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

Date Results Needed

Quote #

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALKBI, ALKCA 125mlHDPE-NoPres	Chloride - 9056 125mlHDPE-NoPres	K, Mg, Na - 6010 250mlHDPE-HNO3	SO4, Chloride - 9056 125mlHDPE-NoPres							Remarks	Sample # (lab only)
MW-6	Grab	GW	25.26	3/1/21	1335	3	X		X	X								-01
MW-10	Grab	GW	25.25	3/1/21	1523	3	X	X	X									02

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Road Mt Juliet, TN 37122
Phone: 615-758-5858 Alt: 800-767-5859
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at:
https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1322458
1097

Acctnum: **AQUAOPKS**
Template: **T152879**
Prelogin: **P830702**
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)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
A Thompson	3/2/21	1214	Alan Nelson	Temp: 0.3 °C Bottles Received: 6	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)		
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 3/3/21 Time: 1300	Hold: Condition: NCF / OK

Jared Morrison
December 16, 2022

ATTACHMENT 1-3

May 2021 Sampling Event Laboratory Report

ANALYTICAL REPORT

June 08, 2021

SCS Engineers - KS

Sample Delivery Group:	L1356626
Samples Received:	05/21/2021
Project Number:	27213167.21
Description:	Evergy - Iatan Generating Station

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

Entire Report Reviewed By:

Jeff Carr
Project Manager

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

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

MW-1 L1356626-01 GW

Collected by: G. Panaflor | Collected date/time: 05/20/21 15:00 | Received date/time: 05/21/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1678535	1	05/27/21 13:16	05/27/21 14:31	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1682542	1	06/04/21 00:45	06/04/21 00:45	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1683965	1	06/07/21 16:48	06/08/21 10:29	EL	Mt. Juliet, TN

MW-2 L1356626-02 GW

Collected by: G. Panaflor | Collected date/time: 05/20/21 09:45 | Received date/time: 05/21/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1678535	1	05/27/21 13:16	05/27/21 14:31	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1682542	1	06/04/21 00:58	06/04/21 00:58	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1682542	5	06/04/21 01:11	06/04/21 01:11	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1683965	1	06/07/21 16:48	06/08/21 10:38	EL	Mt. Juliet, TN

MW-6 L1356626-03 GW

Collected by: G. Panaflor | Collected date/time: 05/20/21 09:35 | Received date/time: 05/21/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1678535	1	05/27/21 13:16	05/27/21 14:31	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1682542	1	06/04/21 01:24	06/04/21 01:24	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1683965	1	06/07/21 16:48	06/08/21 10:41	EL	Mt. Juliet, TN

MW-7 L1356626-04 GW

Collected by: G. Panaflor | Collected date/time: 05/20/21 12:45 | Received date/time: 05/21/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1678535	1	05/27/21 13:16	05/27/21 14:31	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1682542	1	06/04/21 01:36	06/04/21 01:36	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1683965	1	06/07/21 16:48	06/08/21 09:33	EL	Mt. Juliet, TN

MW-8 L1356626-05 GW

Collected by: G. Panaflor | Collected date/time: 05/20/21 12:10 | Received date/time: 05/21/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1678535	1	05/27/21 13:16	05/27/21 14:31	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1682542	1	06/04/21 02:15	06/04/21 02:15	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1683965	1	06/07/21 16:48	06/08/21 10:44	EL	Mt. Juliet, TN

DUPLICATE L1356626-06 GW

Collected by: G. Panaflor | Collected date/time: 05/20/21 12:50 | Received date/time: 05/21/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1678535	1	05/27/21 13:16	05/27/21 14:31	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1682542	1	06/04/21 02:54	06/04/21 02:54	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1683965	1	06/07/21 16:48	06/08/21 10:47	EL	Mt. Juliet, TN

CASE NARRATIVE

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
	mg/l		mg/l		date / time	
Dissolved Solids	500		10.0	1	05/27/2021 14:31	WG1678535

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	5590		1000	1	06/04/2021 00:45	WG1682542
Fluoride	257		150	1	06/04/2021 00:45	WG1682542
Sulfate	33300		5000	1	06/04/2021 00:45	WG1682542

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	06/08/2021 10:29	WG1683965
Calcium	137000		1000	1	06/08/2021 10:29	WG1683965

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	611		13.3	1	05/27/2021 14:31	WG1678535

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6450		1000	1	06/04/2021 00:58	WG1682542
Fluoride	316		150	1	06/04/2021 00:58	WG1682542
Sulfate	126000		25000	5	06/04/2021 01:11	WG1682542

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	06/08/2021 10:38	WG1683965
Calcium	167000		1000	1	06/08/2021 10:38	WG1683965

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	619	J3	13.3	1	05/27/2021 14:31	WG1678535

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	2750		1000	1	06/04/2021 01:24	WG1682542
Fluoride	274		150	1	06/04/2021 01:24	WG1682542
Sulfate	46900		5000	1	06/04/2021 01:24	WG1682542

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	06/08/2021 10:41	WG1683965
Calcium	188000		1000	1	06/08/2021 10:41	WG1683965

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	513		10.0	1	05/27/2021 14:31	WG1678535

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6030		1000	1	06/04/2021 01:36	WG1682542
Fluoride	342		150	1	06/04/2021 01:36	WG1682542
Sulfate	57200		5000	1	06/04/2021 01:36	WG1682542

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	06/08/2021 09:33	WG1683965
Calcium	148000	V	1000	1	06/08/2021 09:33	WG1683965

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	426		10.0	1	05/27/2021 14:31	WG1678535

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1340		1000	1	06/04/2021 02:15	WG1682542
Fluoride	364		150	1	06/04/2021 02:15	WG1682542
Sulfate	17300		5000	1	06/04/2021 02:15	WG1682542

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	06/08/2021 10:44	WG1683965
Calcium	127000		1000	1	06/08/2021 10:44	WG1683965

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	432		10.0	1	05/27/2021 14:31	WG1678535

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1290		1000	1	06/04/2021 02:54	WG1682542
Fluoride	357		150	1	06/04/2021 02:54	WG1682542
Sulfate	16800		5000	1	06/04/2021 02:54	WG1682542

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	06/08/2021 10:47	WG1683965
Calcium	126000		1000	1	06/08/2021 10:47	WG1683965

Method Blank (MB)

(MB) R3661820-1 05/27/21 14:31

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1356626-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1356626-02 05/27/21 14:31 • (DUP) R3661820-3 05/27/21 14:31

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	611	605	1	0.878		5

L1356626-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1356626-03 05/27/21 14:31 • (DUP) R3661820-4 05/27/21 14:31

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	619	660	1	6.46	J3	5

Laboratory Control Sample (LCS)

(LCS) R3661820-2 05/27/21 14:31

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8690	98.8	77.4-123	

Method Blank (MB)

(MB) R3663230-1 06/03/21 13:04

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

L1356541-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1356541-01 06/03/21 22:11 • (DUP) R3663230-3 06/03/21 22:24

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	17100	17000	1	0.123		15
Fluoride	194	190	1	1.98		15
Sulfate	11100	11200	1	1.32		15

L1356626-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1356626-06 06/04/21 02:54 • (DUP) R3663230-7 06/04/21 03:06

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1290	1270	1	0.891		15
Fluoride	357	350	1	2.09		15
Sulfate	16800	16900	1	0.833		15

Laboratory Control Sample (LCS)

(LCS) R3663230-2 06/03/21 13:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39300	98.2	80.0-120	
Fluoride	8000	8230	103	80.0-120	
Sulfate	40000	40000	99.9	80.0-120	

L1356541-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1356541-02 06/03/21 22:37 • (MS) R3663230-4 06/03/21 22:49

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	70600	118000	94.2	1	80.0-120	E
Fluoride	5000	218	5210	99.9	1	80.0-120	
Sulfate	50000	5270	56300	102	1	80.0-120	

L1356626-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1356626-04 06/04/21 01:36 • (MS) R3663230-5 06/04/21 01:49 • (MSD) R3663230-6 06/04/21 02:02

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	6030	57100	58300	102	104	1	80.0-120			2.01	15
Fluoride	5000	342	5510	5630	103	106	1	80.0-120			2.19	15
Sulfate	50000	57200	108000	109000	102	104	1	80.0-120	E	E	0.889	15

Method Blank (MB)

(MB) R3664572-1 06/08/21 09:28

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) R3664572-2 06/08/21 09:30

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	973	97.3	80.0-120	
Calcium	10000	9870	98.7	80.0-120	

L1356626-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1356626-04 06/08/21 09:33 • (MS) R3664572-4 06/08/21 09:39 • (MSD) R3664572-5 06/08/21 09:42

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	ND	1080	1080	99.6	99.1	1	75.0-125			0.394	20
Calcium	10000	148000	154000	154000	64.5	63.4	1	75.0-125	V	V	0.0726	20

GLOSSARY OF TERMS

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).
J3	The associated batch QC was outside the established quality control range for precision.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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

* 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 Analytical.

Company Name/Address:
SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

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

Report to: **Jason Franks**

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

Project Description: **Evergy - Iatan Generating Station**

City/State Collected:

Please Circle: PT MT (CT) ET

Phone: **913-681-0030**

Client Project # **27213167.21**

Lab Project # **AQUAOPKS-IATAN**

Collected by (print): G. Pendleton

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

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 (2 x)	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-1	GNPB	GW		5/20/21	1500	3	X	X	X		-01
MW-2		GW			0945	3	X	X	X		-02
MW-6		GW			0935	3	X	X	X		-03
MW-7		GW			1245	3	X	X	X		-04
MW-8		GW			1210	3	X	X	X		-05
MW7 MS/MSD		GW			1255	3	X	X	X		-04
DUPLICATE		GW			1250	3	X	X	X		-06

Chain of Custody Page ___ of ___

Pace Analytical®

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1356626

A114

T:

Acctnum: **AQUAOPKS**

Template: **T136059**

Prelogin: **P846714**

PM: **206 - Jeff Carr**

PB: TN 5-11-21

Shipped Via: **FedEX Ground**

* 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: 5/20/21	Time: 1700	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR: 0	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.5+0=1.5 °C Bottles Received: 21	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 05-21-21 Time: 0930	Hold: Condition: NCF / OK

ANALYTICAL REPORT

June 10, 2021

SCS Engineers - KS

Sample Delivery Group:	L1356622
Samples Received:	05/21/2021
Project Number:	27213167.21-A
Description:	Evergy - Iatan Generating Station

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

Entire Report Reviewed By:

Jeff Carr
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

MW-9 L1356622-01 GW

Collected by	Collected date/time	Received date/time
G. Paneflor	05/20/21 11:25	05/21/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1678535	1	05/27/21 13:16	05/27/21 14:31	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1682542	1	06/04/21 00:19	06/04/21 00:19	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1685453	1	06/10/21 02:56	06/10/21 09:39	EL	Mt. Juliet, TN

MW-10 L1356622-02 GW

Collected by	Collected date/time	Received date/time
G. Paneflor	05/20/21 10:40	05/21/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1678535	1	05/27/21 13:16	05/27/21 14:31	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1682542	1	06/04/21 00:32	06/04/21 00:32	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1685453	1	06/10/21 02:56	06/10/21 09:41	EL	Mt. Juliet, TN

CASE NARRATIVE

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
	mg/l		mg/l		date / time	
Dissolved Solids	384		10.0	1	05/27/2021 14:31	WG1678535

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	ND		1000	1	06/04/2021 00:19	WG1682542
Fluoride	367		150	1	06/04/2021 00:19	WG1682542
Sulfate	19700		5000	1	06/04/2021 00:19	WG1682542

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	06/10/2021 09:39	WG1685453
Calcium	98400		1000	1	06/10/2021 09:39	WG1685453

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	628		13.3	1	05/27/2021 14:31	WG1678535

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	16500		1000	1	06/04/2021 00:32	WG1682542
Fluoride	457		150	1	06/04/2021 00:32	WG1682542
Sulfate	46700		5000	1	06/04/2021 00:32	WG1682542

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	06/10/2021 09:41	WG1685453
Calcium	148000		1000	1	06/10/2021 09:41	WG1685453

Method Blank (MB)

(MB) R3661820-1 05/27/21 14:31

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1356626-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1356626-02 05/27/21 14:31 • (DUP) R3661820-3 05/27/21 14:31

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	611	605	1	0.878		5

L1356626-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1356626-03 05/27/21 14:31 • (DUP) R3661820-4 05/27/21 14:31

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	619	660	1	6.46	J3	5

Laboratory Control Sample (LCS)

(LCS) R3661820-2 05/27/21 14:31

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8690	98.8	77.4-123	

Method Blank (MB)

(MB) R3663230-1 06/03/21 13:04

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

L1356541-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1356541-01 06/03/21 22:11 • (DUP) R3663230-3 06/03/21 22:24

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	17100	17000	1	0.123		15
Fluoride	194	190	1	1.98		15
Sulfate	11100	11200	1	1.32		15

L1356626-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1356626-06 06/04/21 02:54 • (DUP) R3663230-7 06/04/21 03:06

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1290	1270	1	0.891		15
Fluoride	357	350	1	2.09		15
Sulfate	16800	16900	1	0.833		15

Laboratory Control Sample (LCS)

(LCS) R3663230-2 06/03/21 13:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39300	98.2	80.0-120	
Fluoride	8000	8230	103	80.0-120	
Sulfate	40000	40000	99.9	80.0-120	

L1356541-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1356541-02 06/03/21 22:37 • (MS) R3663230-4 06/03/21 22:49

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	70600	118000	94.2	1	80.0-120	E
Fluoride	5000	218	5210	99.9	1	80.0-120	
Sulfate	50000	5270	56300	102	1	80.0-120	

L1356626-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1356626-04 06/04/21 01:36 • (MS) R3663230-5 06/04/21 01:49 • (MSD) R3663230-6 06/04/21 02:02

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	6030	57100	58300	102	104	1	80.0-120			2.01	15
Fluoride	5000	342	5510	5630	103	106	1	80.0-120			2.19	15
Sulfate	50000	57200	108000	109000	102	104	1	80.0-120	E	E	0.889	15

Method Blank (MB)

(MB) R3665552-1 06/10/21 09:22

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) R3665552-2 06/10/21 09:24

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	939	93.9	80.0-120	
Calcium	10000	9630	96.3	80.0-120	

GLOSSARY OF TERMS

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).
J3	The associated batch QC was outside the established quality control range for precision.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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

* 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 Analytical.

Company Name/Address:
SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

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

Report to: **Jason Franks**

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

Project Description: **Evergy - Iatan Generating Station**

City/State Collected:

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project # **27213167.21-A**

Lab Project # **AQUAOPKS-IATAN**

Collected by (print): G. Pendleton

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

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical®

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Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # U356622

A115

Acctnum: **AQUAOPKS**

Template: **T166691**

Prelogin: **P846540**

PM: **206 - Jeff Carr**

PB:

Shipped Via: **FedEX Ground**

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-9	GRAB	GW		5/20/21	1125	3	X	X	X		-01
MW-10	GRAB	GW		5/20/21	1040	3	X	X	X		-02

* 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
	5/20/21	1600		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.5 °C Bottles Received: 6
				If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5-21-21 Time: 0930
				Hold: Condition: NCF / OK

Jared Morrison
December 16, 2022

ATTACHMENT 1-4

July 2021 Sampling Event Laboratory Report

ANALYTICAL REPORT

August 01, 2021

SCS Engineers - KS

Sample Delivery Group:	L1381302
Samples Received:	07/21/2021
Project Number:	27213167.21 - L
Description:	KCP&L Iatan Generating Station

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

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

MW-6 L1381302-01 GW

Collected by: Whit Martin
Collected date/time: 07/20/21 09:50
Received date/time: 07/21/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1710983	1	07/27/21 19:17	07/27/21 19:17	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1712952	1	07/30/21 07:17	07/30/21 14:12	CCE	Mt. Juliet, TN

DUPLICATE L1381302-02 GW

Collected by: Whit Martin
Collected date/time: 07/20/21 09:50
Received date/time: 07/21/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1710983	1	07/27/21 21:28	07/27/21 21:28	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1712952	1	07/30/21 07:17	07/30/21 15:27	CCE	Mt. Juliet, TN

MW-10 L1381302-03 GW

Collected by: Whit Martin
Collected date/time: 07/20/21 09:10
Received date/time: 07/21/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1710983	1	07/27/21 22:01	07/27/21 22:01	ELN	Mt. Juliet, TN

CASE NARRATIVE

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	1560		1000	1	07/27/2021 19:17	WG1710983
Sulfate	31600		5000	1	07/27/2021 19:17	WG1710983

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	147000	V	1000	1	07/30/2021 14:12	WG1712952

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1590		1000	1	07/27/2021 21:28	WG1710983
Sulfate	31700		5000	1	07/27/2021 21:28	WG1710983

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	148000		1000	1	07/30/2021 15:27	WG1712952

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	38600		5000	1	07/27/2021 22:01	WG1710983

Method Blank (MB)

(MB) R3684603-1 07/27/21 09:56

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

L1381290-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1381290-04 07/27/21 15:27 • (DUP) R3684603-3 07/27/21 15:43

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	22400	22000	10	1.75		15
Sulfate	88300	85600	10	3.15		15

L1381302-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1381302-01 07/27/21 19:17 • (DUP) R3684603-6 07/27/21 19:33

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1560	1580	1	1.20		15
Sulfate	31600	31600	1	0.154		15

Laboratory Control Sample (LCS)

(LCS) R3684603-2 07/27/21 10:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40600	101	80.0-120	
Sulfate	40000	40800	102	80.0-120	

L1381290-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1381290-04 07/27/21 15:27 • (MS) R3684603-4 07/27/21 16:00 • (MSD) R3684603-5 07/27/21 16:16

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	22400	69200	69400	93.7	94.1	10	80.0-120			0.235	15
Sulfate	50000	88300	132000	132000	87.7	87.8	10	80.0-120			0.0573	15

L1381302-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1381302-01 07/27/21 19:17 • (MS) R3684603-7 07/27/21 19:50 • (MSD) R3684603-8 07/27/21 20:39

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 %
Chloride	50000	1560	52500	50100	102	97.1	1	80.0-120			4.73	15
Sulfate	50000	31600	83400	80900	104	98.7	1	80.0-120			2.95	15

Method Blank (MB)

(MB) R3686095-1 07/30/21 14:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3686095-2 07/30/21 14:09

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	9980	99.8	80.0-120	

L1381302-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1381302-01 07/30/21 14:12 • (MS) R3686095-4 07/30/21 14:18 • (MSD) R3686095-5 07/30/21 14:20

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	147000	154000	155000	70.6	76.1	1	75.0-125	V		0.355	20

GLOSSARY OF TERMS

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
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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

* 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 Analytical.

Company Name/Address:
SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

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

Pres Chk

Report to:
Jason Franks

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

Project Description:
KCP&L Iatan Generating Station

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

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project #
27213167.21 - L

Lab Project #
AQUAOPKS-IATAN

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	Ca - 6010 250mlHDPE-HNO3	Chloride, SO4 - 9056 125mlHDPE-NoPres	SO4 - 9056 125mlHDPE-NoPres							Remarks	Sample # (lab only)
MW-6	Grab	GW		7/20/21	0950	2	X	X									-01
MW-6 MS/MSD	Grab	GW		7/20/21	0950	2	X	X									
DUPLICATE	Grab	GW		7/20/21	0950	2	X	X									-02
MW-10	Grab	GW		7/20/21	0910	1			X								-03

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 1381302
D029

Acctnum: **AQUAOPKS**
Template: **T129786**
Prelogin: **P861401**
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 # 9883 0084 1003

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	7/20/21	1515		1	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.6 +0.2 3.6 7 Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Heather Kems	Date: 7/21/21 Time: 0830	Hold: / Condition: NCF / OK

ANALYTICAL REPORT

August 09, 2021

SCS Engineers - KS

Sample Delivery Group:	L1385413
Samples Received:	07/21/2021
Project Number:	27213167.21 - L
Description:	KCP&L Iatan Generating Station

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

Entire Report Reviewed By:

Jeff Carr
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SAMPLE SUMMARY

MW-6 L1385413-01 GW

Collected by: Whit Martin
Collected date/time: 07/20/21 09:50
Received date/time: 07/21/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1716521	1	08/03/21 14:35	08/03/21 15:24	VRP	Mt. Juliet, TN

DUPLICATE L1385413-02 GW

Collected by: Whit Martin
Collected date/time: 07/20/21 09:50
Received date/time: 07/21/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1716521	1	08/03/21 14:35	08/03/21 15:24	VRP	Mt. Juliet, TN

CASE NARRATIVE

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
	mg/l		mg/l		date / time	
Dissolved Solids	542	Q	11.1	1	08/03/2021 15:24	WG1716521

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	534	Q	10.0	1	08/03/2021 15:24	WG1716521

Method Blank (MB)

(MB) R3689154-1 08/03/21 15:24

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1384494-23 Original Sample (OS) • Duplicate (DUP)

(OS) L1384494-23 08/03/21 15:24 • (DUP) R3689154-3 08/03/21 15:24

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	631	632	1	0.211		5

L1384900-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1384900-05 08/03/21 15:24 • (DUP) R3689154-4 08/03/21 15:24

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	994	998	1	0.402		5

Laboratory Control Sample (LCS)

(LCS) R3689154-2 08/03/21 15:24

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8400	95.5	77.4-123	

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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Abbreviations and Definitions

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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.
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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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.
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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
Q	Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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

* 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 Analytical.

Chain of Custody Page 1 of 1

Pace Analytical®

12065 Lebanon Rd Mount Juliet, TN 37122

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Company Name/Address:	SCS Engineers - KS 8575 W. 110th Street Overland Park, KS 66210
Billing Information:	Accounts Payable 8575 W. 110th Street Overland Park, KS 66210
Report to:	Jason Franks
Email To:	jfranks@scsengineers.com;jay.martin@evergy.c
Project Description:	KCP&L Iatan Generating Station
City/State Collected:	Weston, MO
Please Circle:	PT MT CT ET
Phone:	913-681-0030
Client Project #	27213167.21 - L
Lab Project #	AQUAOPKS-IATAN
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

SDG # 138302 MV 8/3/21

D029

L138513

Acctnum: AQUAOPKS

Template: T129786

Prelogin: P861401

PM: 206 - Jeff Carr

PB:

Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Ca - 6010 250mlHDPE-HNO3	Chloride, SO4 - 9056 125mlHDPE-NoPres	SO4 - 9056 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-6	Grab	GW		7/20/21	0950	2	X	X			-01
MW-6 MS/MSD	Grab	GW		7/20/21	0950	2	X	X			-01
DUPLICATE	Grab	GW		7/20/21	0950	2	X	X			-02
MW-10	Grab	GW		7/20/21	0910	1			X		-02 -03

* 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 # 9883 0084 1003

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: 7/20/21	Time: 1515	Received by: (Signature)	Trip Blank Received: (Yes) / No (HCl) MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.6+0.3=3.6 Bottles Received: 7
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Heather Kems	Date: 7/21/21 Time: 0830

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

AQUAOPKS L1381302-01 and -02 relog for TDS

R5

Per client request, please relog AQUAOPKS samples L1381302-01 and -02 for TDS.

Client is aware that the samples are OOH and may require dilutions.

Time estimate: oh **Time spent:** oh

Members

JAC Jeffrey A. Carr (responsible)

ANALYTICAL REPORT

August 09, 2021

SCS Engineers - KS

Sample Delivery Group:	L1386668
Samples Received:	08/05/2021
Project Number:	27213167.21
Description:	Evergy Iatan Gen Station

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

Entire Report Reviewed By:

Jeff Carr
Project Manager

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

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SAMPLE SUMMARY

MW-6 L1386668-01 GW

Collected by: Jason R. Franks
Collected date/time: 08/04/21 10:25
Received date/time: 08/05/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1718421	1	08/05/21 19:35	08/05/21 19:39	VRP	Mt. Juliet, TN

DUPLICATE L1386668-02 GW

Collected by: Jason R. Franks
Collected date/time: 08/04/21 10:25
Received date/time: 08/05/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1718421	1	08/05/21 19:35	08/05/21 19:39	VRP	Mt. Juliet, TN

CASE NARRATIVE

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
	mg/l		mg/l		date / time	
Dissolved Solids	550		10.0	1	08/05/2021 19:39	WG1718421

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	546		10.0	1	08/05/2021 19:39	WG1718421

Method Blank (MB)

(MB) R3689182-1 08/05/21 19:39

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1386668-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1386668-01 08/05/21 19:39 • (DUP) R3689182-3 08/05/21 19:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	550	537	1	2.39		5

Laboratory Control Sample (LCS)

(LCS) R3689182-2 08/05/21 19:39

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8320	94.5	77.4-123	

GLOSSARY OF TERMS

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

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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

* 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 Analytical.

SCS Engineers

Billing Information:
Jason Franks
SCS Engineers

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

Project Description: Evergy Iatan Gen Station

City/State Collected: Weston, MO

Please Circle: PT MT CT ET

Phone: 9133023238

Client Project # 27213167.21

Lab Project #

SDG # 138668

Table D053

Collected by (print): Jason R. Franks

Site/Facility ID #

P.O. #

Acctnum:

Template:

Prelogin:

PM:

PB:

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

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

Quote #

Date Results Needed: 2 Day

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	TDS - 500ml NonPres	Remarks	Sample # (lab only)
MW-6	Grab	GW		08/4/21	1025	1	X		01
Duplicate	Grab	GW		8/4/21	1025	1	X		02

* 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 # 9883 0084 0989

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP __Y __N
COC Signed/Accurate: ✓ __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
	8/4/21	1300		Not	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C 2.5+0.2=2.8 Bottles Received: 2	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 8/5/21 Time: 0900	Hold: / Condition: NCF / OK

Jared Morrison
December 16, 2022

ATTACHMENT 1-5

November 2021 Sampling Event Laboratory Report

ANALYTICAL REPORT

December 16, 2021

SCS Engineers - KS

Sample Delivery Group:	L1433083
Samples Received:	11/18/2021
Project Number:	27213167.21-A
Description:	Evergy - Iatan Generating Station

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

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

MW-1 L1433083-01 GW

Collected by: Whit Martin | Collected date/time: 11/17/21 10:45 | Received date/time: 11/18/21 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779725	1	11/24/21 11:14	11/24/21 16:11	BRG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1787688	1	12/11/21 15:24	12/11/21 15:24	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1788314	1	12/13/21 14:16	12/15/21 03:29	CCE	Mt. Juliet, TN

MW-2 L1433083-02 GW

Collected by: Whit Martin | Collected date/time: 11/17/21 09:55 | Received date/time: 11/18/21 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1780105	1	11/24/21 20:07	11/24/21 20:11	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1787688	1	12/11/21 15:36	12/11/21 15:36	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1788873	5	12/14/21 16:23	12/14/21 16:23	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1788842	1	12/14/21 10:31	12/14/21 19:03	CCE	Mt. Juliet, TN

MW-6 L1433083-03 GW

Collected by: Whit Martin | Collected date/time: 11/17/21 13:30 | Received date/time: 11/18/21 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779332	1	11/23/21 18:00	11/23/21 19:01	MEU	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1787688	1	12/11/21 15:48	12/11/21 15:48	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1788842	1	12/14/21 10:31	12/14/21 19:11	CCE	Mt. Juliet, TN

MW-7 L1433083-04 GW

Collected by: Whit Martin | Collected date/time: 11/17/21 12:25 | Received date/time: 11/18/21 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779332	1	11/23/21 18:00	11/23/21 19:01	MEU	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1787688	1	12/11/21 15:59	12/11/21 15:59	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1788226	9	12/15/21 13:12	12/16/21 04:35	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1788848	1	12/14/21 15:00	12/15/21 02:05	CCE	Mt. Juliet, TN

MW-8 L1433083-05 GW

Collected by: Whit Martin | Collected date/time: 11/17/21 11:35 | Received date/time: 11/18/21 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779332	1	11/23/21 18:00	11/23/21 19:01	MEU	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1788153	1	12/12/21 22:20	12/12/21 22:20	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1788842	1	12/14/21 10:31	12/14/21 19:14	CCE	Mt. Juliet, TN

DUPLICATE L1433083-06 GW

Collected by: Whit Martin | Collected date/time: 11/17/21 12:25 | Received date/time: 11/18/21 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779725	1	11/24/21 11:14	11/24/21 16:11	BRG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1788153	1	12/12/21 22:33	12/12/21 22:33	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1788842	1	12/14/21 10:31	12/14/21 19:16	CCE	Mt. Juliet, TN

CASE NARRATIVE

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
	mg/l		mg/l		date / time	
Dissolved Solids	537		10.0	1	11/24/2021 16:11	WG1779725

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6480		1000	1	12/11/2021 15:24	WG1787688
Fluoride	314		150	1	12/11/2021 15:24	WG1787688
Sulfate	35400		5000	1	12/11/2021 15:24	WG1787688

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	12/15/2021 03:29	WG1788314
Calcium	152000		1000	1	12/15/2021 03:29	WG1788314

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	595		10.0	1	11/24/2021 20:11	WG1780105

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6680		1000	1	12/11/2021 15:36	WG1787688
Fluoride	371		150	1	12/11/2021 15:36	WG1787688
Sulfate	114000		25000	5	12/14/2021 16:23	WG1788873

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	12/14/2021 19:03	WG1788842
Calcium	165000		1000	1	12/14/2021 19:03	WG1788842

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	508		10.0	1	11/23/2021 19:01	WG1779332

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	2120		1000	1	12/11/2021 15:48	WG1787688
Fluoride	344		150	1	12/11/2021 15:48	WG1787688
Sulfate	32200		5000	1	12/11/2021 15:48	WG1787688

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	12/14/2021 19:11	WG1788842
Calcium	147000		1000	1	12/14/2021 19:11	WG1788842

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	446		10.0	1	11/23/2021 19:01	WG1779332

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1720		1000	1	12/11/2021 15:59	WG1787688
Fluoride	383		150	1	12/11/2021 15:59	WG1787688
Sulfate	31000		5000	1	12/11/2021 15:59	WG1787688

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	12/15/2021 02:05	WG1788848
Calcium	112000		9000	9	12/16/2021 04:35	WG1788226

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	640		10.0	1	11/23/2021 19:01	WG1779332

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	14400		1000	1	12/12/2021 22:20	WG1788153
Fluoride	404		150	1	12/12/2021 22:20	WG1788153
Sulfate	91000		5000	1	12/12/2021 22:20	WG1788153

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	12/14/2021 19:14	WG1788842
Calcium	178000		1000	1	12/14/2021 19:14	WG1788842

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	452		10.0	1	11/24/2021 16:11	WG1779725

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1520		1000	1	12/12/2021 22:33	WG1788153
Fluoride	379		150	1	12/12/2021 22:33	WG1788153
Sulfate	30700		5000	1	12/12/2021 22:33	WG1788153

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	12/14/2021 19:16	WG1788842
Calcium	130000		1000	1	12/14/2021 19:16	WG1788842

Method Blank (MB)

(MB) R3734175-1 11/23/21 19:01

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1432776-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1432776-12 11/23/21 19:01 • (DUP) R3734175-3 11/23/21 19:01

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1210	1280	1	5.94	J3	5

L1432898-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1432898-10 11/23/21 19:01 • (DUP) R3734175-4 11/23/21 19:01

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1310	1450	1	9.86	J3	5

Laboratory Control Sample (LCS)

(LCS) R3734175-2 11/23/21 19:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8050	91.5	77.4-123	

Method Blank (MB)

(MB) R3734296-1 11/24/21 16:11

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1432898-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1432898-05 11/24/21 16:11 • (DUP) R3734296-3 11/24/21 16:11

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1460	1480	1	1.53		5

L1432898-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1432898-06 11/24/21 16:11 • (DUP) R3734296-4 11/24/21 16:11

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1650	1650	1	0.152		5

Laboratory Control Sample (LCS)

(LCS) R3734296-2 11/24/21 16:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8570	97.4	77.4-123	

Method Blank (MB)

(MB) R3734313-1 11/24/21 20:11

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1432977-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1432977-03 11/24/21 20:11 • (DUP) R3734313-4 11/24/21 20:11

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	278	271	1	2.55		5

Laboratory Control Sample (LCS)

(LCS) R3734313-3 11/24/21 20:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	7980	90.7	77.4-123	

QUALITY CONTROL SUMMARY

L1433083-01,02,03,04

Method Blank (MB)

(MB) R3740460-1 12/11/21 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

L1433083-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1433083-04 12/11/21 15:59 • (DUP) R3740460-3 12/11/21 16:11

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1720	1560	1	9.75		15
Fluoride	383	382	1	0.235		15
Sulfate	31000	30900	1	0.500		15

L1432919-23 Original Sample (OS) • Duplicate (DUP)

(OS) L1432919-23 12/11/21 17:56 • (DUP) R3740460-6 12/11/21 18:08

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	ND	ND	1	0.000		15
Fluoride	ND	ND	1	0.000		15
Sulfate	ND	ND	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3740460-2 12/11/21 09:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39500	98.7	80.0-120	
Fluoride	8000	7990	99.9	80.0-120	
Sulfate	40000	39400	98.5	80.0-120	

L1433083-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433083-04 12/11/21 15:59 • (MS) R3740460-4 12/11/21 16:23 • (MSD) R3740460-5 12/11/21 16:34

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	1720	52700	52700	102	102	1	80.0-120			0.0449	15
Fluoride	5000	383	5530	5530	103	103	1	80.0-120			0.125	15
Sulfate	50000	31000	78400	78500	94.7	94.9	1	80.0-120			0.102	15

L1432919-23 Original Sample (OS) • Matrix Spike (MS)

(OS) L1432919-23 12/11/21 17:56 • (MS) R3740460-7 12/11/21 18:20

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	ND	50500	101	1	80.0-120	
Fluoride	5000	ND	5170	103	1	80.0-120	
Sulfate	50000	ND	49900	99.8	1	80.0-120	

Method Blank (MB)

(MB) R3740144-1 12/12/21 18:06

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

L1433083-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1433083-06 12/12/21 22:33 • (DUP) R3740144-3 12/12/21 22:46

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1520	1610	1	5.45		15
Fluoride	379	399	1	5.24		15
Sulfate	30700	32600	1	5.88		15

L1433678-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1433678-04 12/13/21 04:20 • (DUP) R3740144-8 12/13/21 04:33

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	3760	3830	1	1.84		15
Fluoride	ND	ND	1	24.9	P1	15
Sulfate	ND	ND	1	1.02		15

Laboratory Control Sample (LCS)

(LCS) R3740144-2 12/12/21 18:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	38900	97.2	80.0-120	
Fluoride	8000	7820	97.7	80.0-120	
Sulfate	40000	39200	98.1	80.0-120	

L1433105-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433105-02 12/12/21 23:12 • (MS) R3740144-4 12/12/21 23:24 • (MSD) R3740144-5 12/12/21 23:37

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	17600	68400	70400	102	106	1	80.0-120			2.79	15
Fluoride	5000	629	5660	5860	101	105	1	80.0-120			3.37	15
Sulfate	50000	35700	85000	87000	98.7	103	1	80.0-120			2.29	15

L1433458-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433458-08 12/13/21 02:25 • (MS) R3740144-6 12/13/21 03:03 • (MSD) R3740144-7 12/13/21 03:16

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	2440	51300	53300	97.8	102	1	80.0-120			3.68	15
Fluoride	5000	174	5140	5340	99.3	103	1	80.0-120			3.89	15
Sulfate	50000	ND	48900	50800	97.8	102	1	80.0-120			3.93	15

Method Blank (MB)

(MB) R3741161-1 12/14/21 09:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Sulfate	U		594	5000

L1441672-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1441672-01 12/14/21 14:14 • (DUP) R3741161-3 12/14/21 14:26

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	ND	ND	1	0.290		15

L1441475-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1441475-01 12/14/21 18:31 • (DUP) R3741161-6 12/14/21 18:43

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	9910	10500	1	5.61		15

Laboratory Control Sample (LCS)

(LCS) R3741161-2 12/14/21 09:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40000	39800	99.5	80.0-120	

L1441672-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1441672-01 12/14/21 14:14 • (MS) R3741161-4 12/14/21 14:37 • (MSD) R3741161-5 12/14/21 14:49

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 %
Sulfate	50000	ND	54700	54700	100	100	1	80.0-120			0.139	15

L1441475-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1441475-01 12/14/21 18:31 • (MS) R3741161-7 12/14/21 18:55

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Sulfate	50000	9910	60700	102	1	80.0-120	

Method Blank (MB)

(MB) R3741328-1 12/16/21 03:44

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3741328-2 12/16/21 03:47

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Calcium	10000	9580	95.8	80.0-120	

L1431579-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1431579-01 12/16/21 03:49 • (MS) R3741328-4 12/16/21 03:54 • (MSD) R3741328-5 12/16/21 03:57

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	%	%		%			%	%
Calcium	10000	3150	13100	12800	99.3	96.7	1	75.0-125			2.05	20

Method Blank (MB)

(MB) R3740935-1 12/15/21 03:08

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		20.0	200
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3740935-2 12/15/21 03:10

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	1000	100	80.0-120	
Calcium	10000	10300	103	80.0-120	

L1439833-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1439833-05 12/15/21 03:13 • (MS) R3740935-4 12/15/21 03:18 • (MSD) R3740935-5 12/15/21 03:21

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	ND	1030	1040	103	104	1	75.0-125			1.12	20
Calcium	10000	8550	18900	18800	103	102	1	75.0-125			0.467	20

Method Blank (MB)

(MB) R3740819-1 12/14/21 18:39

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		20.0	200
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3740819-2 12/14/21 18:41

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	991	99.1	80.0-120	
Calcium	10000	10000	100	80.0-120	

L1433073-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433073-01 12/14/21 18:44 • (MS) R3740819-4 12/14/21 18:50 • (MSD) R3740819-5 12/14/21 18:53

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	ND	1080	1080	98.2	98.6	1	75.0-125			0.404	20
Calcium	10000	353000	349000	350000	0.000	0.000	1	75.0-125	V	V	0.275	20

L1433184-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433184-07 12/14/21 18:55 • (MS) R3740819-6 12/14/21 18:58 • (MSD) R3740819-7 12/14/21 19:00

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	1640	2630	2610	98.3	96.8	1	75.0-125			0.594	20
Calcium	10000	85300	95500	94300	102	89.8	1	75.0-125			1.32	20

Method Blank (MB)

(MB) R3740827-4 12/15/21 07:22

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		20.0	200

Laboratory Control Sample (LCS)

(LCS) R3740827-5 12/15/21 07:24

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	960	96.0	80.0-120	

L1433083-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433083-04 12/15/21 02:05 • (MS) R3740827-2 12/15/21 02:10 • (MSD) R3740827-3 12/15/21 02:13

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	ND	1070	1070	97.5	97.3	1	75.0-125			0.226	20

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

GLOSSARY OF TERMS

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
J3	The associated batch QC was outside the established quality control range for precision.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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

* 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 Analytical.

Company Name/Address:
SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

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

Pres Chk

Report to:
Jason Franks

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

Project Description:
Evergy - Iatan Generating Station

City/State Collected: Weston, MO

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project #
27213167.21-A

Lab Project #
AQUAOPKS-IATAN

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	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres								Remarks	Sample # (lab only)
								12										
MW-1	Grab	GW		11/17/21	1045	3	X	X	X									-01
MW-2		GW			0955	3	X	X	X									-02
MW-6		GW			1330	3	X	X	X									-03
MW-7		GW			1225	3	X	X	X									-04
MW-8		GW			1135	3	X	X	X									-05
MW-7 MS/MSD		GW			1225	3	X	X	X									-04
DUPLICATE		GW			1225	3	X	X	X									-06

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1433083
C211
Ta

Acctnum: **AQUAOPKS**
Template: **T136059**
Prelogin: **P885751**
PM: **206 - Jeff Carr**
PB:

Shipped Via: **FedEX Ground**

* 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 # ① 1.8+.0=1.8 2.5+.0=2.5 ② 2.8+.0=2.8 ③

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	11/17/21	1510			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: PKT 0 °C 3.7+.0=3.7	Bottles Received: 21
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) K. Holder	Date: 11/18/21	Time: 1500

Hold: | Condition: NCF / OK

ANALYTICAL REPORT

December 16, 2021

SCS Engineers - KS

Sample Delivery Group:	L1433105
Samples Received:	11/18/2021
Project Number:	27213167.21-A
Description:	Evergy - Iatan Generating Station

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

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

MW-9 L1433105-01 GW

Collected by: Whit Martin
Collected date/time: 11/17/21 12:25
Received date/time: 11/18/21 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779725	1	11/24/21 11:14	11/24/21 16:11	BRG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1788153	1	12/12/21 22:59	12/12/21 22:59	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1788842	1	12/14/21 10:31	12/14/21 19:19	CCE	Mt. Juliet, TN

MW-10 L1433105-02 GW

Collected by: Whit Martin
Collected date/time: 11/17/21 11:45
Received date/time: 11/18/21 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779725	1	11/24/21 11:14	11/24/21 16:11	BRG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1788153	1	12/12/21 23:12	12/12/21 23:12	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1788859	1	12/14/21 14:59	12/15/21 07:14	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1788859	1	12/14/21 14:59	12/15/21 22:15	CCE	Mt. Juliet, TN

CASE NARRATIVE

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
	mg/l		mg/l		date / time	
Dissolved Solids	394		10.0	1	11/24/2021 16:11	WG1779725

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	ND		1000	1	12/12/2021 22:59	WG1788153
Fluoride	440		150	1	12/12/2021 22:59	WG1788153
Sulfate	19200		5000	1	12/12/2021 22:59	WG1788153

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	12/14/2021 19:19	WG1788842
Calcium	106000		1000	1	12/14/2021 19:19	WG1788842

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	491		10.0	1	11/24/2021 16:11	WG1779725

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	17600		1000	1	12/12/2021 23:12	WG1788153
Fluoride	629		150	1	12/12/2021 23:12	WG1788153
Sulfate	35700		5000	1	12/12/2021 23:12	WG1788153

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	12/15/2021 07:14	WG1788859
Calcium	131000		1000	1	12/15/2021 22:15	WG1788859

Method Blank (MB)

(MB) R3734296-1 11/24/21 16:11

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1432898-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1432898-05 11/24/21 16:11 • (DUP) R3734296-3 11/24/21 16:11

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1460	1480	1	1.53		5

L1432898-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1432898-06 11/24/21 16:11 • (DUP) R3734296-4 11/24/21 16:11

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1650	1650	1	0.152		5

Laboratory Control Sample (LCS)

(LCS) R3734296-2 11/24/21 16:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8570	97.4	77.4-123	

Method Blank (MB)

(MB) R3740144-1 12/12/21 18:06

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

L1433083-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1433083-06 12/12/21 22:33 • (DUP) R3740144-3 12/12/21 22:46

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1520	1610	1	5.45		15
Fluoride	379	399	1	5.24		15
Sulfate	30700	32600	1	5.88		15

L1433678-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1433678-04 12/13/21 04:20 • (DUP) R3740144-8 12/13/21 04:33

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	3760	3830	1	1.84		15
Fluoride	ND	ND	1	24.9	P1	15
Sulfate	ND	ND	1	1.02		15

Laboratory Control Sample (LCS)

(LCS) R3740144-2 12/12/21 18:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	38900	97.2	80.0-120	
Fluoride	8000	7820	97.7	80.0-120	
Sulfate	40000	39200	98.1	80.0-120	

L1433105-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433105-02 12/12/21 23:12 • (MS) R3740144-4 12/12/21 23:24 • (MSD) R3740144-5 12/12/21 23:37

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	17600	68400	70400	102	106	1	80.0-120			2.79	15
Fluoride	5000	629	5660	5860	101	105	1	80.0-120			3.37	15
Sulfate	50000	35700	85000	87000	98.7	103	1	80.0-120			2.29	15

L1433458-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433458-08 12/13/21 02:25 • (MS) R3740144-6 12/13/21 03:03 • (MSD) R3740144-7 12/13/21 03:16

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	2440	51300	53300	97.8	102	1	80.0-120			3.68	15
Fluoride	5000	174	5140	5340	99.3	103	1	80.0-120			3.89	15
Sulfate	50000	ND	48900	50800	97.8	102	1	80.0-120			3.93	15

Method Blank (MB)

(MB) R3740819-1 12/14/21 18:39

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		20.0	200
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3740819-2 12/14/21 18:41

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	991	99.1	80.0-120	
Calcium	10000	10000	100	80.0-120	

L1433073-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433073-01 12/14/21 18:44 • (MS) R3740819-4 12/14/21 18:50 • (MSD) R3740819-5 12/14/21 18:53

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	ND	1080	1080	98.2	98.6	1	75.0-125			0.404	20
Calcium	10000	353000	349000	350000	0.000	0.000	1	75.0-125	V	V	0.275	20

L1433184-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433184-07 12/14/21 18:55 • (MS) R3740819-6 12/14/21 18:58 • (MSD) R3740819-7 12/14/21 19:00

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	1640	2630	2610	98.3	96.8	1	75.0-125			0.594	20
Calcium	10000	85300	95500	94300	102	89.8	1	75.0-125			1.32	20

Method Blank (MB)

(MB) R3740937-1 12/15/21 07:09

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		20.0	200

Method Blank (MB)

(MB) R3741432-1 12/15/21 22:09

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	2490		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3740937-2 12/15/21 07:11

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	989	98.9	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3741432-2 12/15/21 22:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	11700	117	80.0-120	

L1433105-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433105-02 12/15/21 07:14 • (MS) R3740937-4 12/15/21 07:20 • (MSD) R3740937-5 12/15/21 07:22

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	ND	1110	1090	98.8	97.4	1	75.0-125			1.30	20

GLOSSARY OF TERMS

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
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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

* 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 Analytical.

Company Name/Address:
SCS Engineers - KS
8575 W. 110th Street
Overland Park, KS 66210

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

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Report to: Jason Franks

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

Project Description: Evergy - Iatan Generating Station

City/State Collected: Weston, MO

Please Circle: PT MT (CT) ET

Phone: 913-681-0030

Client Project # 27213167.21-A

Lab Project # AQUAOPKS-IATAN

SDG # L1433105

C212

Collected by (print): Whit Martin

Site/Facility ID #

P.O. #

Acctnum: AQUAOPKS
Template: T166691
Prelogin: P885754
PM: 206 - Jeff Carr
PB:
Shipped Via: FedEX Ground

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	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-9	Grab	GW		11/17/21	1225	3	X	X	X		-01
MW-10	Grab	GW		11/17/21	1145	3	X	X	X		-02

* 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 # cooler 2 - AZICH 2.5+0=2.5 (4) 1.8+0=1.8 3 - 2.8+0=2.8

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
Whit Martin	11/17/21	1510	[signature]	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: AZICH 3.7+0=3.7 °C Bottles Received: 6
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 11/18/21 Time: 1500

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Jared Morrison
December 16, 2022

ATTACHMENT 2

Statistical Analyses

Jared Morrison
December 16, 2022

ATTACHMENT 2-1

Fall 2020 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

March 17, 2021

To: Iatan Generating Station
20250 State Route 45 N
Platte County, Missouri
Evergy Metro, Inc.

From: SCS Engineers

RE: Determination of Statistically Significant Increases - CCR Landfill
Fall 2020 Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Iatan Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Groundwater samples were collected on November 9, 2020. Review and validation of the results from the November 2020 Detection Monitoring Event was completed on December 18, 2020, which constitutes completion and finalization of detection monitoring laboratory analyses. 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 February 2, 2021 and March 1, 2021.

The completed statistical evaluation identified two Appendix III constituents above the prediction limits established for monitoring well MW-10.

Constituent/Monitoring Well	*UPL	Observation November 9, 2020	1st Verification February 2, 20201	2nd Verification March 1, 2021
Calcium				
MW-10	154.2	158	160	160
Sulfate				
MW-10	39.5	42.3	46.7	48.4

*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 SSIs above the background prediction limits for calcium and sulfate at monitoring well MW-10.

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

Iatan Generating Station
Determination of Statistically Significant Increases
CCR Landfill
March 17, 2021

ATTACHMENT 1

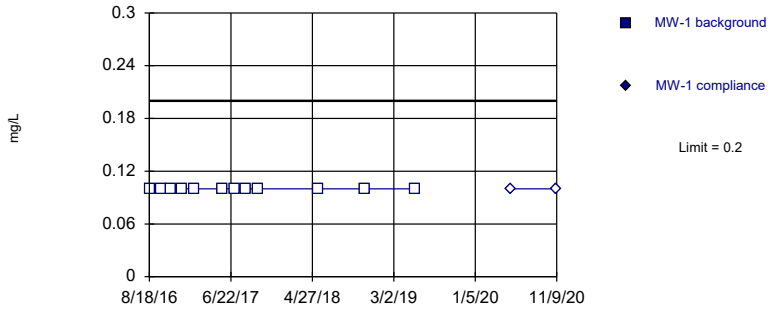
Sanitas™ Output

Sanitas™ v.9.6.28 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). Insufficient data to test for seasonality: data were not deseasonalized.

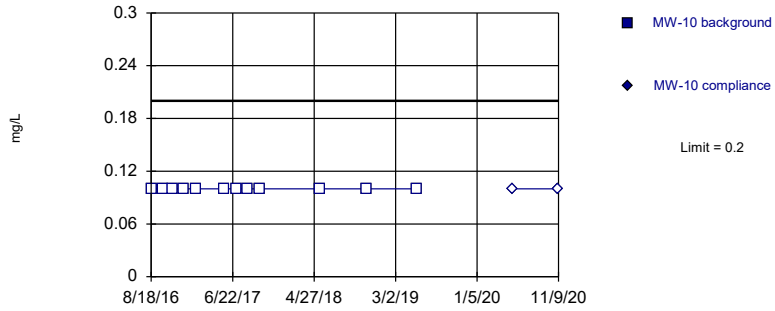
Constituent: Boron Analysis Run 3/10/2021 2:38 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.28 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). Insufficient data to test for seasonality: data were not deseasonalized.

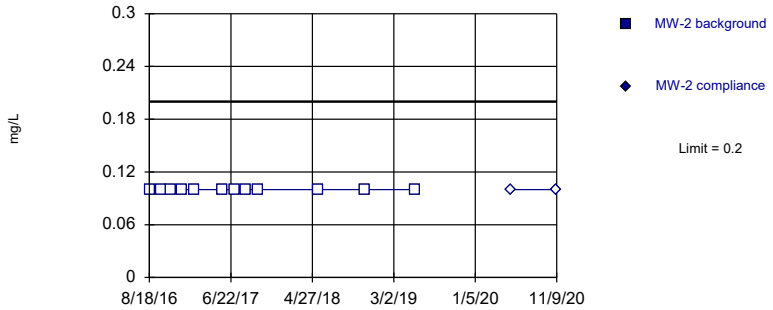
Constituent: Boron Analysis Run 3/10/2021 2:39 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.28 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). Insufficient data to test for seasonality: data were not deseasonalized.

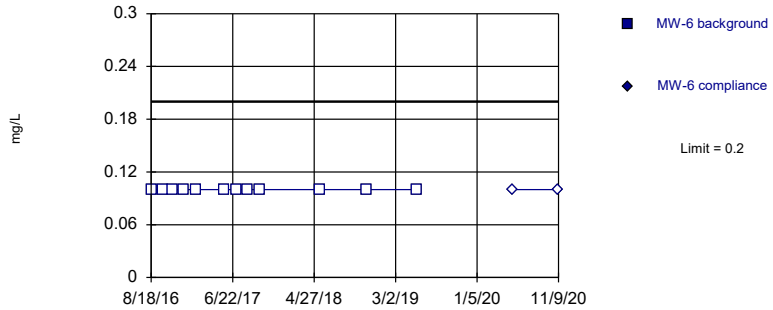
Constituent: Boron Analysis Run 3/10/2021 2:39 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.28 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). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 3/10/2021 2:39 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Boron Analysis Run 3/10/2021 2:44 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

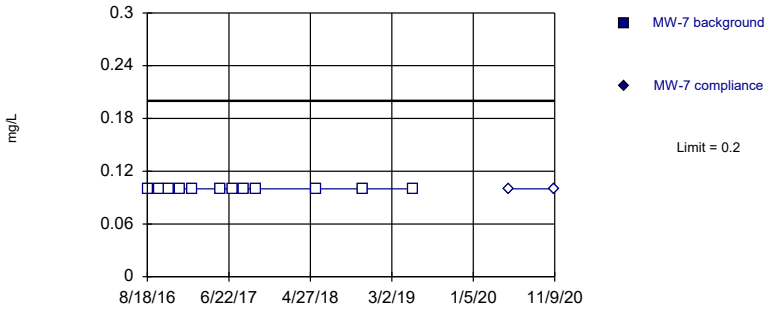
	MW-1	MW-1	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6
8/18/2016	<0.2		<0.2		<0.2		<0.2	
9/29/2016	<0.2		<0.2		<0.2		<0.2	
11/9/2016	<0.2		<0.2		<0.2		<0.2	
12/21/2016	<0.2		<0.2		<0.2		<0.2	
2/3/2017	<0.2		<0.2		<0.2		<0.2	
5/24/2017	<0.2		<0.2		<0.2		<0.2	
7/5/2017	<0.2		<0.2		<0.2		<0.2	
8/17/2017	<0.2		<0.2		<0.2		<0.2	
10/5/2017	<0.2		<0.2		<0.2		<0.2	
5/21/2018	<0.2		<0.2		<0.2		<0.2	
11/12/2018	<0.2		<0.2		<0.2		<0.2	
5/20/2019	<0.2		<0.2		<0.2		<0.2	
5/20/2020		<0.2		<0.2		<0.2		<0.2
11/9/2020		<0.2		<0.2		<0.2		<0.2

Sanitas™ v.9.6.28 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). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 3/10/2021 2:39 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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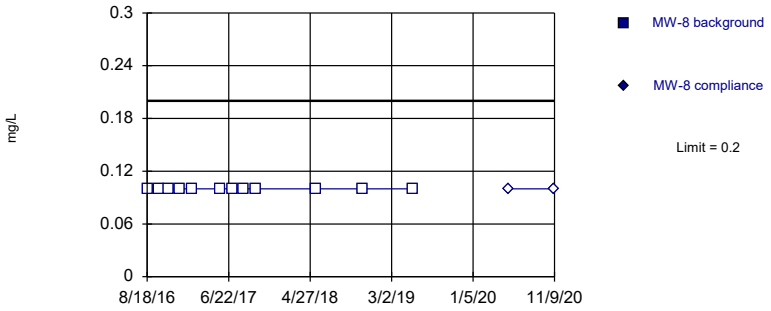
Hollow symbols indicate censored values.

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). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 3/10/2021 2:39 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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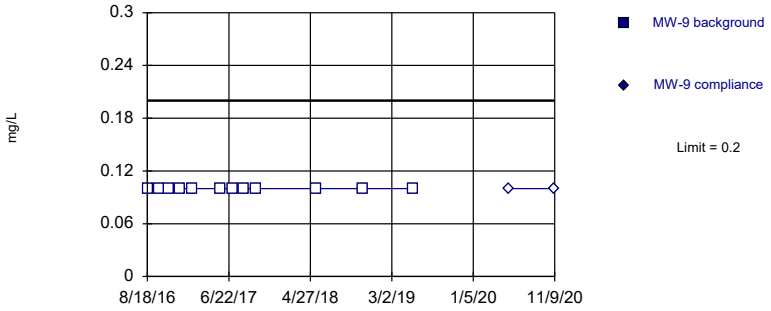
Hollow symbols indicate censored values.

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). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 3/10/2021 2:39 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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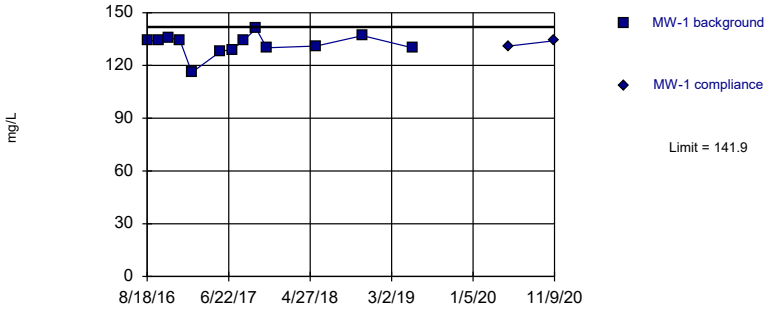
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=131.8, Std. Dev.=5.97, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8766, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 3/10/2021 2:39 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Boron, Calcium Analysis Run 3/10/2021 2:44 PM View: CCR LF III

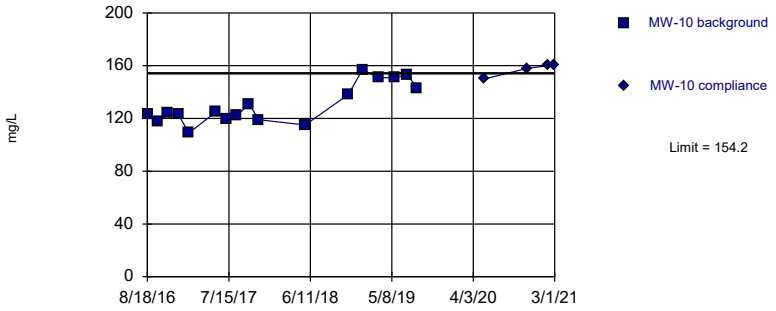
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1
8/18/2016	<0.2		<0.2		<0.2		134	
9/29/2016	<0.2		<0.2		<0.2		134	
11/9/2016	<0.2		<0.2		<0.2		136	
12/21/2016	<0.2		<0.2		<0.2		134	
2/3/2017	<0.2		<0.2		<0.2		116	
5/24/2017	<0.2		<0.2		<0.2		128	
7/5/2017	<0.2		<0.2		<0.2		129	
8/17/2017	<0.2		<0.2		<0.2		134	
10/5/2017	<0.2		<0.2		<0.2		141	
11/14/2017							130	
5/21/2018	<0.2		<0.2		<0.2		131	
11/12/2018	<0.2		<0.2		<0.2		137	
5/20/2019	<0.2		<0.2		<0.2		130	
5/20/2020		<0.2		<0.2		<0.2		131
11/9/2020		<0.2		<0.2		<0.2		134

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=130.7, Std. Dev.=15.04, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8963, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

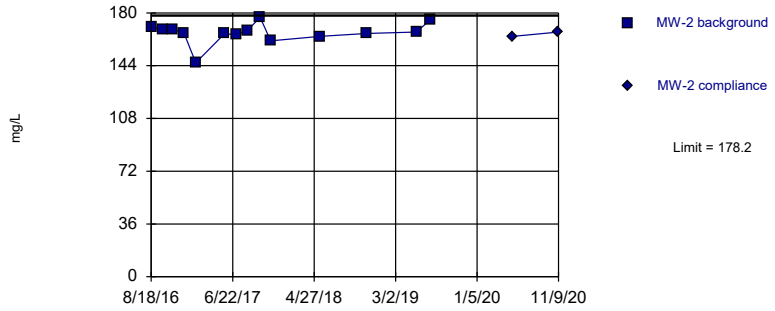
Constituent: Calcium Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=166.4, Std. Dev.=7.175, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8366, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

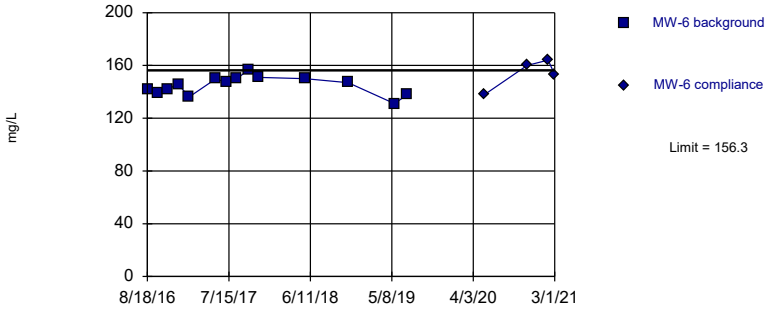
Constituent: Calcium Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=144.7, Std. Dev.=7.032, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9678, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

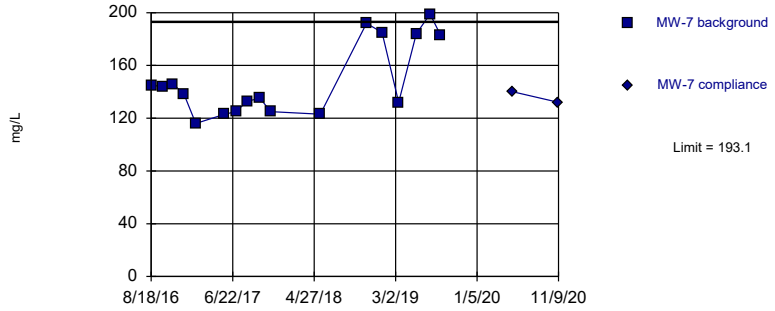
Constituent: Calcium Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=12.15, Std. Dev.=1.12, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8573, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Calcium Analysis Run 3/10/2021 2:44 PM View: CCR LF III

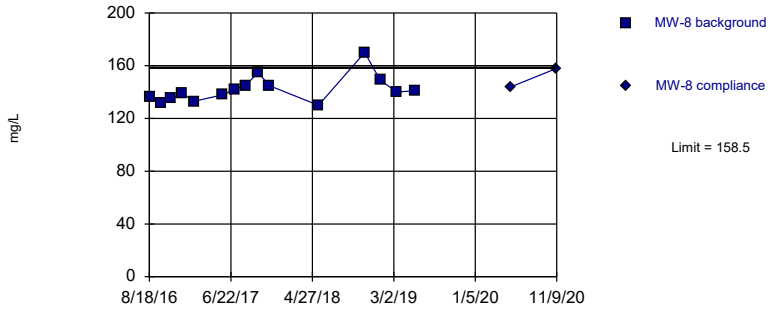
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7
8/18/2016	123		170		142		145	
9/29/2016	118		169		139		144	
11/9/2016	124		169		142		146	
12/21/2016	123		166		146		138	
2/3/2017	109		146		136		116	
5/24/2017	125		166		150		123	
7/5/2017	120		165		147		125	
8/17/2017	122		168		150		133	
10/5/2017	131		177		157		135	
11/14/2017	119		161		151		125	
5/21/2018	115		164		150		123	
11/12/2018	138		166		147		192	
1/10/2019	157						185	
3/14/2019	151						132	
5/20/2019	151		167		131		184	
7/11/2019	153		175		138		199	
8/20/2019	143						183	
5/20/2020		150		164		138		140
11/9/2020		158		167		160		132
2/2/2021		160 1st Verification				164 1st Verification		
3/1/2021		160 2nd Verification				153 2nd Verification		

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=142, Std. Dev.=10.21, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8744, critical = 0.835. Kappa = 1.615 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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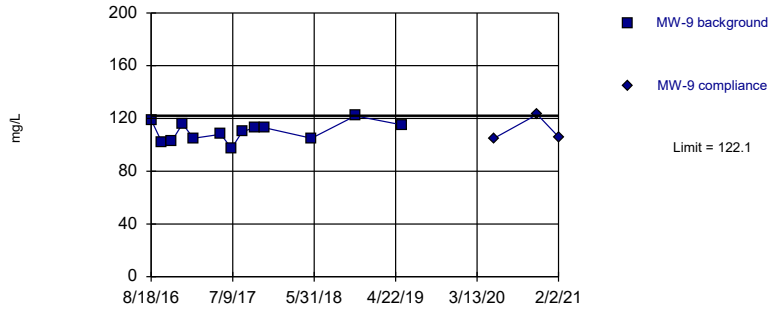
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=109.9, Std. Dev.=7.272, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9797, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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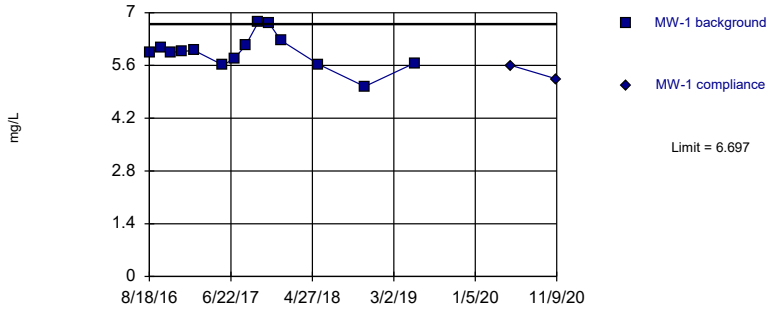
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=5.966, Std. Dev.=0.4435, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9436, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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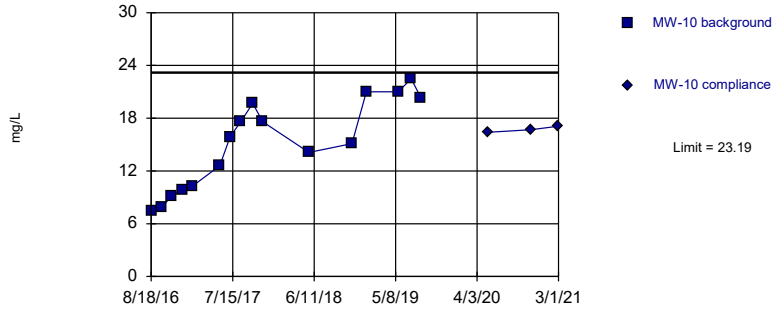
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=15.12, Std. Dev.=5.1, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9286, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Calcium, Chloride Analysis Run 3/10/2021 2:44 PM View: CCR LF III

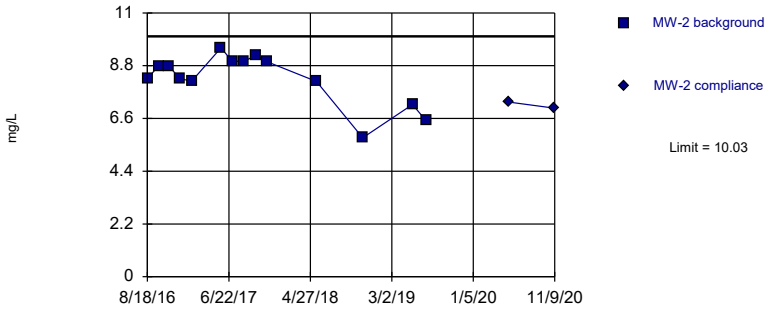
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1	MW-10	MW-10	
8/18/2016	136		119		5.93		7.47		
9/29/2016	132		102		6.07		7.83		
11/9/2016	135		103		5.95		9.15		
12/21/2016	139		116		5.97		9.84		
2/3/2017	133		105		6		10.3		
5/24/2017	138		108		5.61		12.6		
7/5/2017	142		97.2		5.78		15.9		
8/17/2017	145		110		6.13		17.6		
10/5/2017	155		113		6.75		19.7		
11/14/2017	145		113		6.73		17.6		
12/29/2017					6.27				
5/21/2018	130		105		5.63		14.1		
11/12/2018	170		122		5.04		15.1		
1/10/2019	149						21		
3/14/2019	140								
5/20/2019	141		115		5.66		21		
7/11/2019							22.5		
8/20/2019							20.3		
5/20/2020		144		105		5.6		16.4	
11/9/2020		158		123		5.24		16.7	
2/2/2021				106					
3/1/2021								17.1	Extra Sample

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=8.253, Std. Dev.=1.076, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8719, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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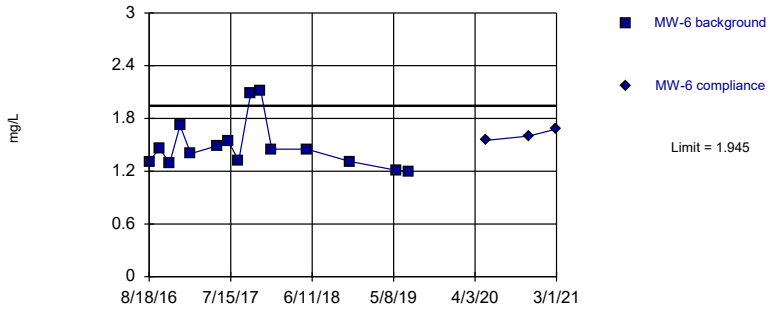
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=1.216, Std. Dev.=0.1104, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8387, critical = 0.835. Kappa = 1.615 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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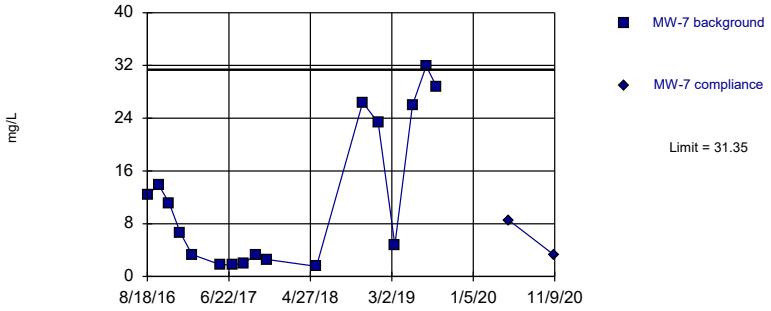
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=3.057, Std. Dev.=1.629, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8683, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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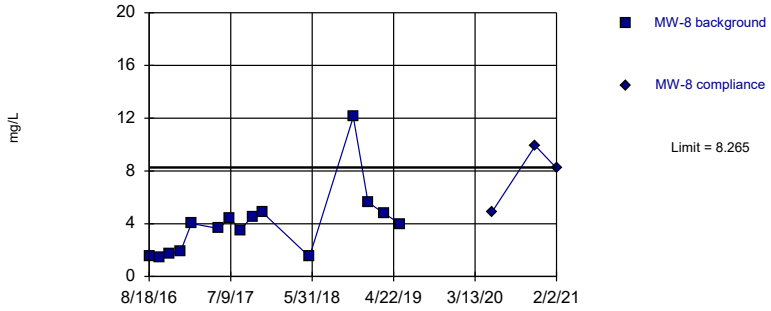
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=1.907, Std. Dev.=0.5992, n=15. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8695, critical = 0.835. Kappa = 1.615 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Chloride Analysis Run 3/10/2021 2:44 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

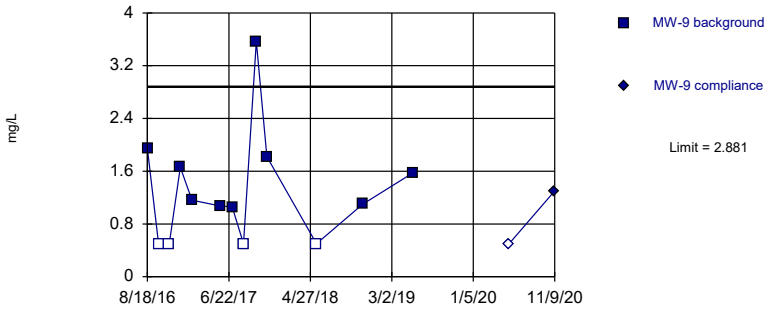
	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	
8/18/2016	8.26		1.31		12.3		1.5		
9/29/2016	8.79		1.46		13.9		1.42		
11/9/2016	8.76		1.29		11.1		1.76		
12/21/2016	8.24		1.72		6.64		1.89		
2/3/2017	8.17		1.4		3.32		4.02		
5/24/2017	9.54		1.49		1.76		3.63		
7/5/2017	8.99		1.54		1.81		4.44		
8/17/2017	8.98		1.32		2		3.53		
10/5/2017	9.23		2.09		3.32		4.55		
11/14/2017	8.97		2.12		2.58		4.86		
12/29/2017			1.45						
5/21/2018	8.14		1.45		1.54		1.5		
11/12/2018	5.79		1.31		26.4		12.1		
1/10/2019					23.3		5.63		
3/14/2019					4.77		4.79		
5/20/2019	7.18		1.21		26		3.98		
7/11/2019	6.5		1.2		31.9				
8/20/2019					28.7				
5/20/2020		7.28		1.55		8.49		4.89	
11/9/2020		7.03		1.6		3.18		9.92	
2/2/2021								8.22	1st Verification Sample
3/1/2021				1.68	Extra Sample				

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (after Aitchison`s Adjustment): Mean=1.151, Std. Dev.=1.028, n=13, 30.77% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8333, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

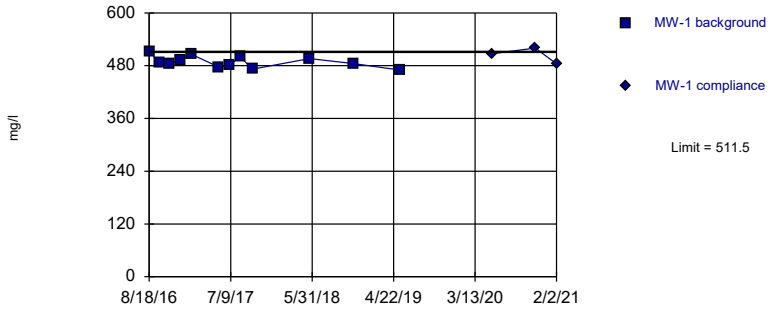
Constituent: Chloride Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=488.6, Std. Dev.=13.34, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9663, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

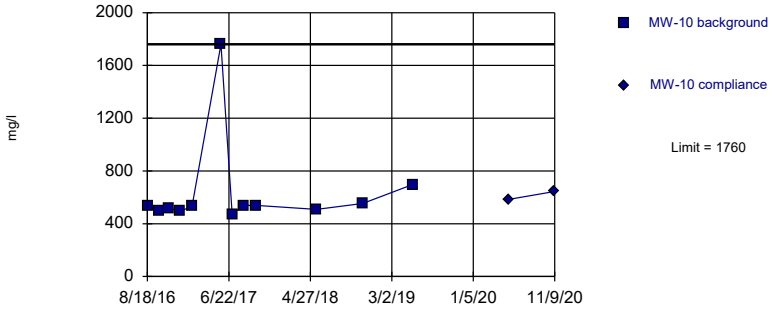
Constituent: Dissolved Solids Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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). Insufficient data to test for seasonality: data were not deseasonalized.

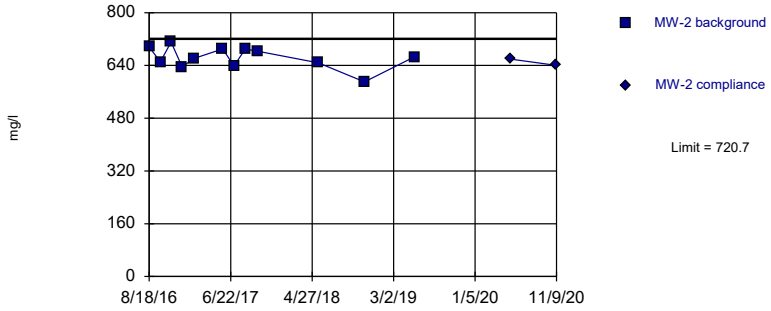
Constituent: Dissolved Solids Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=663.3, Std. Dev.=33.46, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9501, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Dissolved Solids Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Chloride, Dissolved Solids Analysis Run 3/10/2021 2:44 PM View: CCR LF III

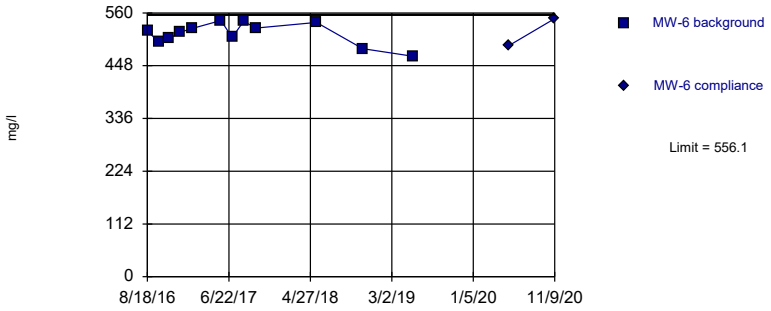
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-9	MW-9	MW-1	MW-1	MW-10	MW-10	MW-2	MW-2
8/18/2016	1.95		513		532		696	
9/29/2016	<1		486		502		651	
11/9/2016	<1		484		516		711	
12/21/2016	1.66		493		497		636	
2/3/2017	1.16		506		531		661	
5/24/2017	1.07		477		1760		690	
7/5/2017	1.06		481		474		638	
8/17/2017	<1		500		539		690	
10/5/2017	3.57		472		539		683	
11/14/2017	1.82							
5/21/2018	<1		496		509		648	
11/12/2018	1.1		485		554		590	
5/20/2019	1.57		470		697		666	
5/20/2020		<1		507		585		659
11/9/2020		1.3		520		645		640
2/2/2021				484	1st Verification			

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=515.5, Std. Dev.=23.66, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9399, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Dissolved Solids Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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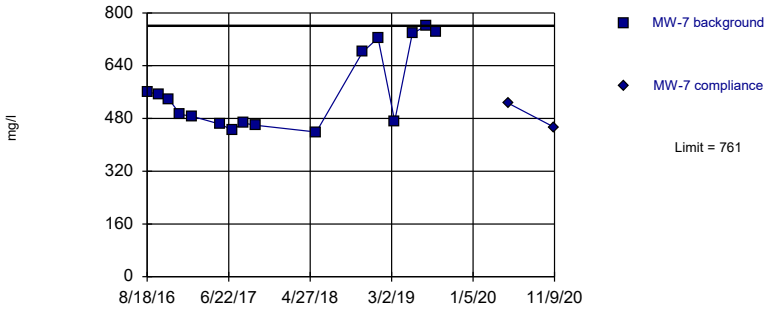
Within Limit

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 16 background values. Well-constituent pair annual alpha = 0.002051. Individual comparison alpha = 0.001026 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Dissolved Solids Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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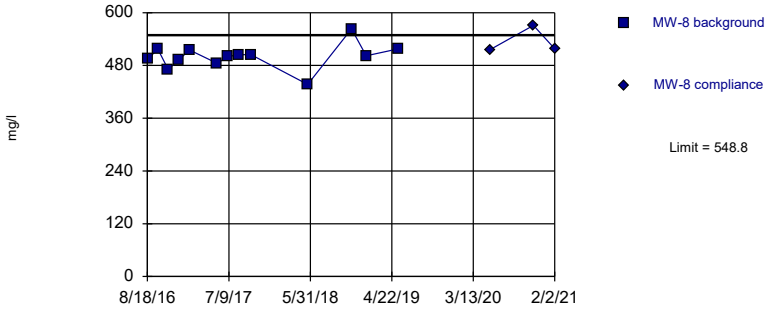
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=500.3, Std. Dev.=28.83, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9252, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Dissolved Solids Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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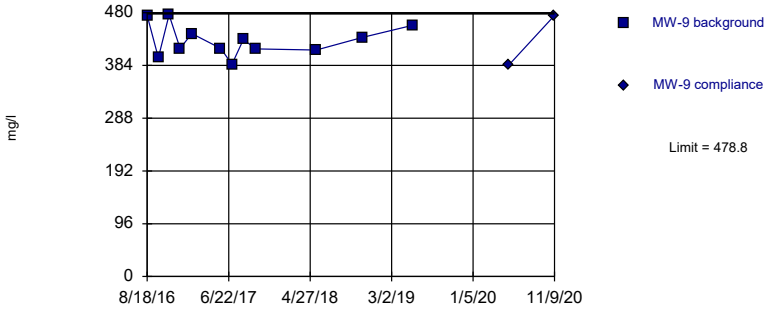
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=429.7, Std. Dev.=28.65, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9417, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Dissolved Solids Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Dissolved Solids Analysis Run 3/10/2021 2:44 PM View: CCR LF III

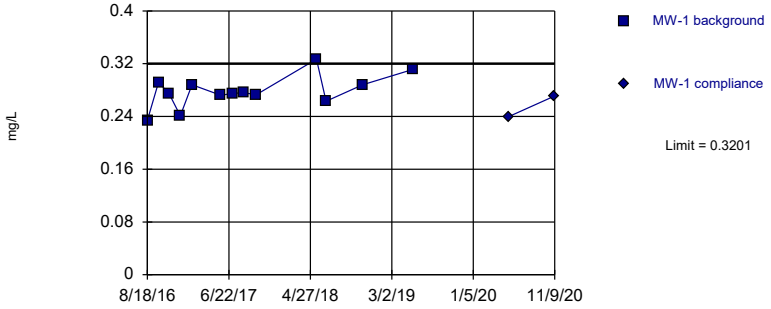
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9
8/18/2016	522		560		494		475	
9/29/2016	498		554		517		398	
11/9/2016	506		538		471		476	
12/21/2016	519		492		493		415	
2/3/2017	527		487		515		442	
5/24/2017	544		462		485		415	
7/5/2017	508		445		500		386	
8/17/2017	542		466		504		431	
10/5/2017	528		459		505		414	
5/21/2018	540		439		437		412	
11/12/2018	484		681		563		435	
1/10/2019			724		502			
3/14/2019			472					
5/20/2019	468		737		518		457	
7/11/2019			761					
8/20/2019			743					
5/20/2020		491		525		516		385
11/9/2020		548		453		571		475
2/2/2021						518	1st Verification	

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.278, Std. Dev.=0.02501, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9534, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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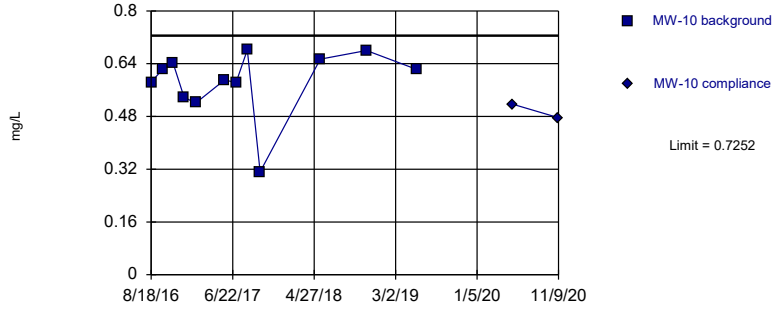
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square transformation): Mean=0.3525, Std. Dev.=0.1011, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8795, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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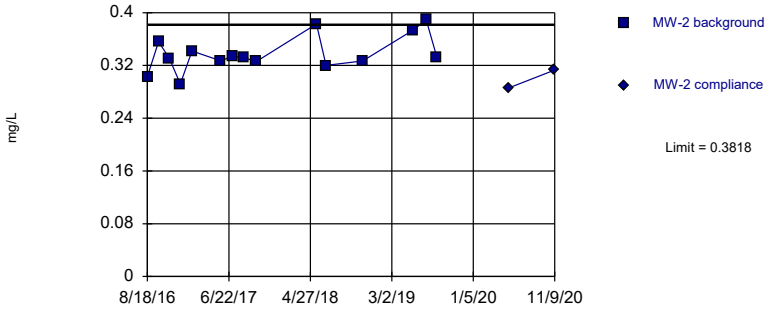
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3379, Std. Dev.=0.02721, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9262, critical = 0.835. Kappa = 1.615 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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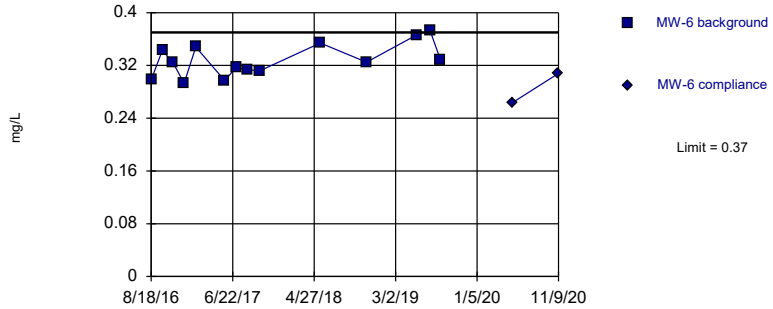
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3279, Std. Dev.=0.02554, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9487, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Fluoride Analysis Run 3/10/2021 2:44 PM View: CCR LF III

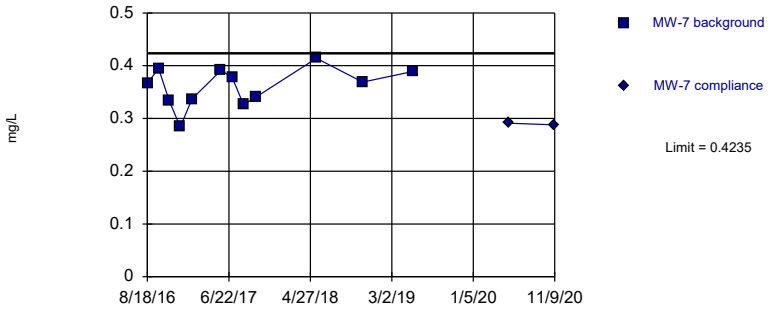
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-1	MW-1	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6
8/18/2016	0.234		0.584		0.303		0.298	
9/29/2016	0.292		0.622		0.356		0.343	
11/9/2016	0.274		0.642		0.331		0.324	
12/21/2016	0.241		0.538		0.292		0.293	
2/3/2017	0.288		0.521		0.342		0.348	
5/24/2017	0.272		0.591		0.327		0.297	
7/5/2017	0.275		0.582		0.334		0.317	
8/17/2017	0.276		0.682		0.332		0.313	
10/5/2017	0.273		0.312		0.326		0.312	
5/21/2018	0.327		0.654		0.383		0.354	
6/26/2018	0.263				0.32			
11/12/2018	0.288		0.68		0.327		0.325	
5/20/2019	0.311		0.623		0.373		0.366	
7/11/2019					0.389		0.373	
8/20/2019					0.333		0.328	
5/20/2020		0.24		0.517		0.286		0.264
11/9/2020		0.271		0.476		0.313		0.308

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3603, Std. Dev.=0.03685, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9559, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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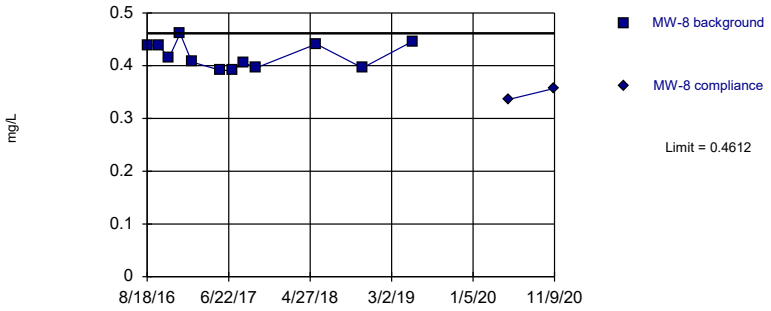
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.4189, Std. Dev.=0.02467, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8902, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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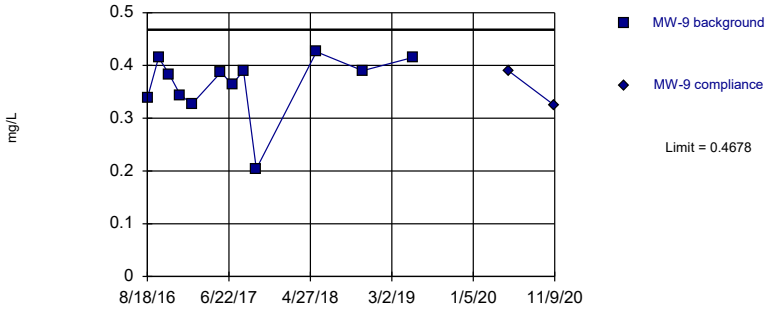
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3653, Std. Dev.=0.05978, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8122, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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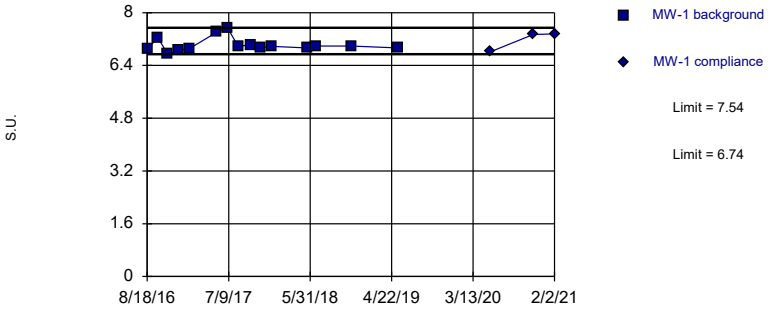
Within Limits

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 15 background values. Well-constituent pair annual alpha = 0.005248. Individual comparison alpha = 0.002625 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Fluoride, pH Analysis Run 3/10/2021 2:44 PM View: CCR LF III

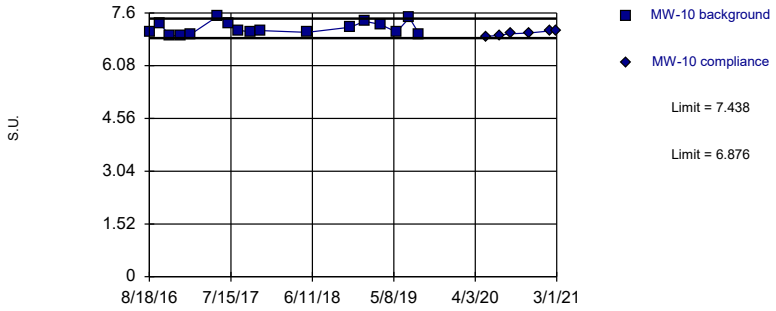
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1	
8/18/2016	0.366		0.438		0.338		6.89		
9/29/2016	0.395		0.439		0.415		7.24		
11/9/2016	0.333		0.415		0.383		6.74		
12/21/2016	0.284		0.461		0.344		6.86		
2/3/2017	0.337		0.407		0.327		6.91		
5/24/2017	0.391		0.391		0.387		7.41		
7/5/2017	0.378		0.391		0.364		7.54		
8/17/2017	0.326		0.406		0.39		6.98		
10/5/2017	0.341		0.396		0.204		7.03		
11/14/2017							6.93		
12/29/2017							6.98		
5/21/2018	0.414		0.441		0.426		6.93		
6/26/2018							6.99		
11/12/2018	0.369		0.396		0.39		6.99		
5/20/2019	0.389		0.446		0.415		6.93		
5/20/2020		0.291		0.336		0.389		6.81	
11/9/2020		0.288		0.357		0.324		7.34	
2/2/2021								7.36	Extra Sample

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.157, Std. Dev.=0.18, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9096, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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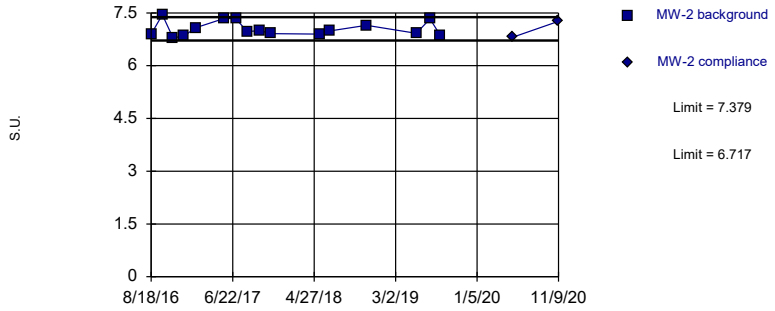
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.048, Std. Dev.=0.2096, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8784, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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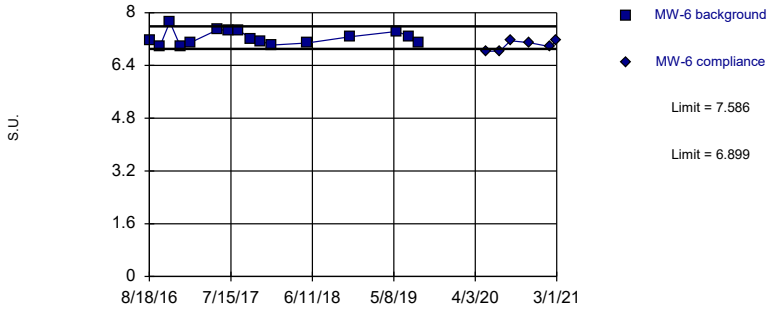
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.243, Std. Dev.=0.2171, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9298, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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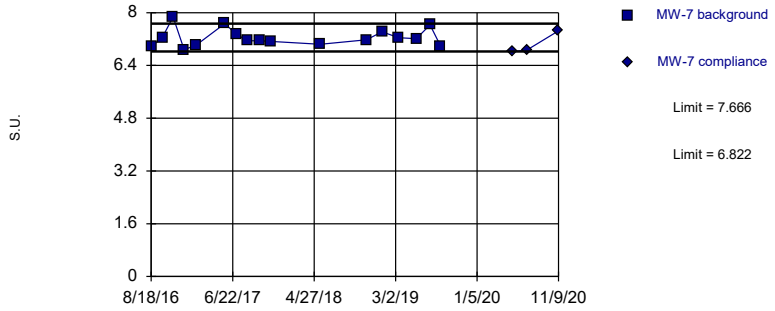
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.244, Std. Dev.=0.2706, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.916, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/10/2021 2:39 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: pH Analysis Run 3/10/2021 2:44 PM View: CCR LF III

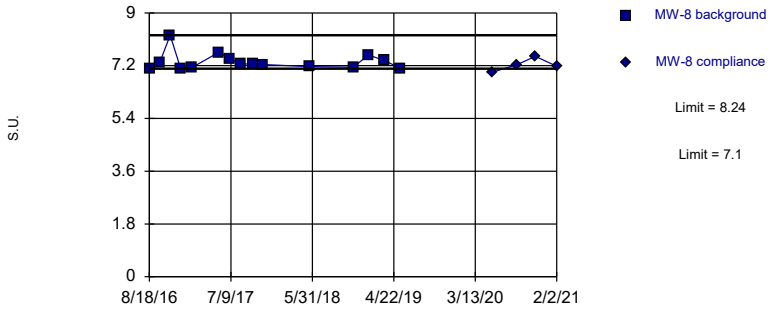
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7
8/18/2016	7.06		6.9		7.18		6.97	
9/29/2016	7.31		7.45		6.97		7.25	
11/9/2016	6.93		6.79		7.72		7.87	
12/21/2016	6.96		6.85		6.99		6.88	
2/3/2017	6.99		7.08		7.1		7.01	
5/24/2017	7.51		7.35		7.49		7.67	
7/5/2017	7.31		7.33		7.46		7.36	
8/17/2017	7.1		6.97		7.47		7.15	
10/5/2017	7.05		7		7.2		7.15	
11/14/2017	7.09		6.91		7.14		7.13	
12/29/2017					7.02			
5/21/2018	7.04		6.9		7.08		7.04	
6/26/2018			6.99					
11/12/2018	7.19		7.15		7.27		7.18	
1/10/2019	7.36						7.42	
3/14/2019	7.27						7.24	
5/20/2019	7.05		6.92		7.43		7.21	
7/11/2019	7.46		7.33		7.29		7.63	
8/20/2019	6.99		6.85		7.07		6.99	
5/20/2020		6.92		6.81		6.83		6.82
7/13/2020		6.96	Extra Sample			6.84	Extra Sample	6.87 Extra Sample
8/25/2020		7	Extra Sample			7.15	Extra Sample	
11/9/2020		7.02		7.26		7.09		7.45 Extra Sample
2/2/2021		7.08	Extra Sample			6.97	Extra Sample	
3/1/2021		7.08	Extra Sample			7.15	Extra Sample	

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 15 background values. Well-constituent pair annual alpha = 0.005248. Individual comparison alpha = 0.002625 (1 of 3). Seasonality was not detected with 95% confidence.

Constituent: pH Analysis Run 3/10/2021 2:40 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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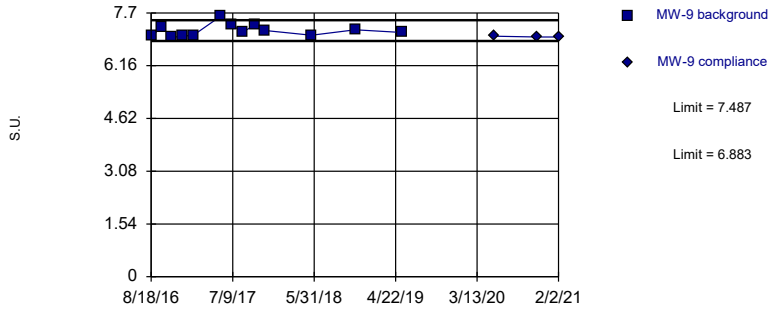
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.185, Std. Dev.=0.1795, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.895, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/10/2021 2:40 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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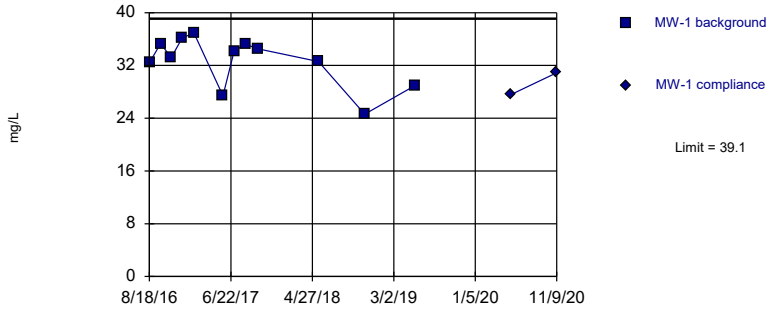
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=32.62, Std. Dev.=3.775, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8898, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 3/10/2021 2:40 PM View: CCR LF III

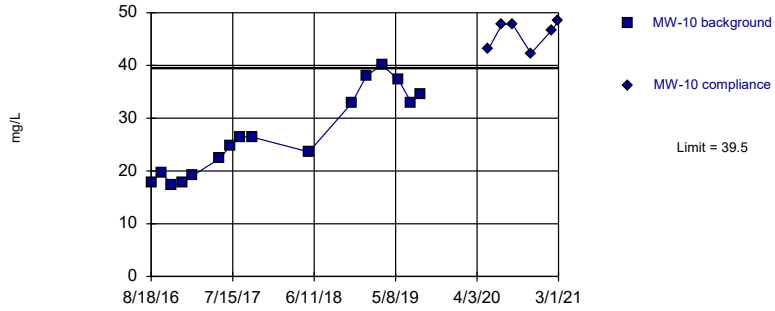
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.28 Sanitas software licensed to SCS Engineers. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=26.95, Std. Dev.=7.937, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9063, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 3/10/2021 2:40 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: pH, Sulfate Analysis Run 3/10/2021 2:44 PM View: CCR LF III

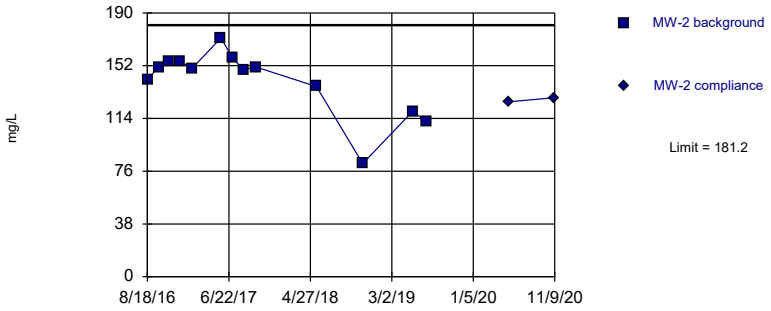
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1	MW-10	MW-10
8/18/2016	7.1		7.02		32.4		17.8	
9/29/2016	7.32		7.28		35.3		19.7	
11/9/2016	8.24		6.99		33.2		17.4	
12/21/2016	7.1		7.02		36.2		17.7	
2/3/2017	7.13		7.05		36.9		19.1	
5/24/2017	7.66		7.61		27.4		22.4	
7/5/2017	7.44		7.37		34.2		24.7	
8/17/2017	7.27		7.13		35.2		26.5	
10/5/2017	7.25		7.35		34.5		26.4	
11/14/2017	7.24		7.19					
5/21/2018	7.17		7.05		32.6		23.6	
11/12/2018	7.15		7.21		24.6		32.9	
1/10/2019	7.57						38	
3/14/2019	7.38						40.1	
5/20/2019	7.11		7.13		28.9		37.3	
7/11/2019							33	
8/20/2019							34.6	
5/20/2020		6.98		7.02		27.6		43.1
7/13/2020								47.7 1st Verification
8/25/2020		7.23 Extra Sample						47.9 2nd Verification
11/9/2020		7.52		7		30.9		42.3
2/2/2021		7.18 Extra Sample		7				46.7 1st Verification
3/1/2021								48.4 2nd Verification

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=141, Std. Dev.=23.93, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8552, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 3/10/2021 2:40 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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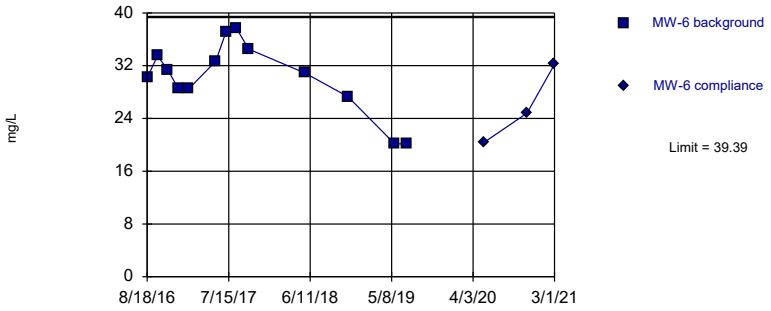
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=30.21, Std. Dev.=5.456, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9209, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 3/10/2021 2:40 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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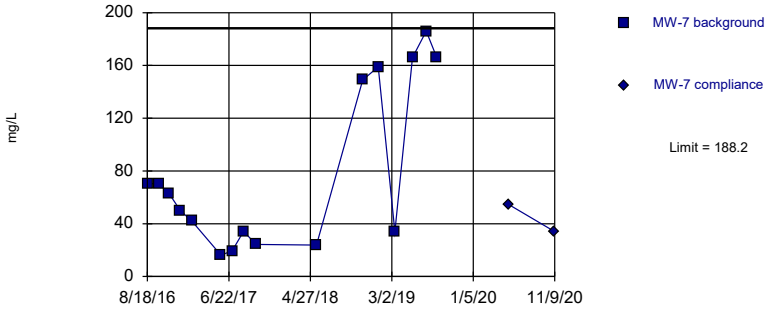
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=8.273, Std. Dev.=3.445, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8729, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 3/10/2021 2:40 PM View: CCR LF III

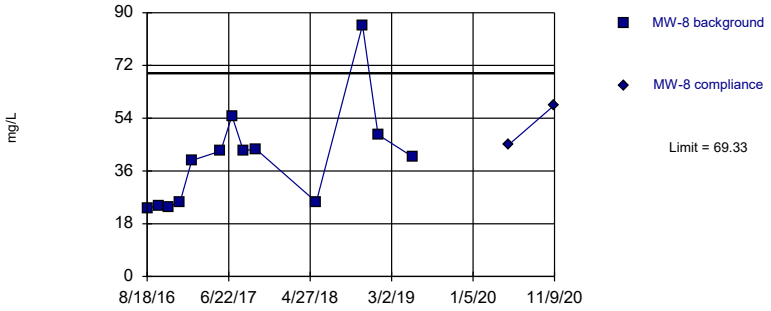
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.28 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=40.07, Std. Dev.=17.39, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8273, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 3/10/2021 2:40 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Sulfate Analysis Run 3/10/2021 2:44 PM View: CCR LF III

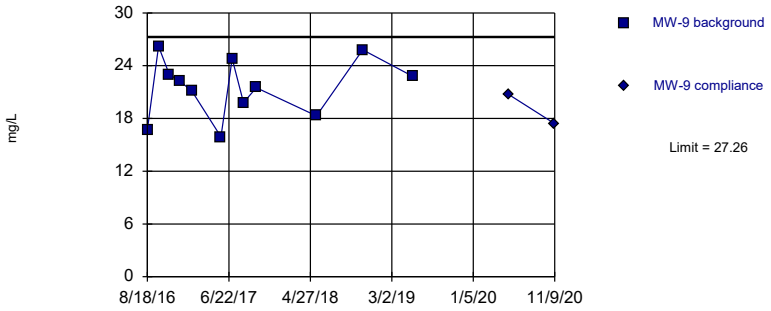
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8
8/18/2016	142		30.2		70.2		23.3	
9/29/2016	151		33.5		70.6		24.2	
11/9/2016	155		31.4		62.6		23.8	
12/21/2016	155		28.6		50		25.5	
2/3/2017	150		28.5		41.9		39.6	
5/24/2017	172		32.7		16.2		42.8	
7/5/2017	158		37.2		19.5		54.8	
8/17/2017	149		37.6		34.1		43	
10/5/2017	151		34.5		24.3		43.4	
5/21/2018	137		30.9		23.8		25.4	
11/12/2018	81.5		27.3		149		85.8	
1/10/2019					159		48.4	
3/14/2019					33.9			
5/20/2019	119		20.2		166		40.9	
7/11/2019	112		20.1		186			
8/20/2019					166			
5/20/2020		126		20.4		54.4		45
11/9/2020		129		24.8		34		58.5
3/1/2021				32.2 Extra Sample				

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=21.51, Std. Dev.=3.352, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9571, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 3/10/2021 2:40 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Sulfate Analysis Run 3/10/2021 2:44 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-9	MW-9
8/18/2016	16.7	
9/29/2016	26.2	
11/9/2016	23	
12/21/2016	22.2	
2/3/2017	21.1	
5/24/2017	15.9	
7/5/2017	24.8	
8/17/2017	19.8	
10/5/2017	21.5	
5/21/2018	18.3	
11/12/2018	25.8	
5/20/2019	22.8	
5/20/2020		20.7
11/9/2020		17.4

Prediction Limit

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr Printed 3/10/2021, 2:44 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	MW-1	0.2	n/a	11/9/2020	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-10	0.2	n/a	11/9/2020	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-2	0.2	n/a	11/9/2020	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-6	0.2	n/a	11/9/2020	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-7	0.2	n/a	11/9/2020	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-8	0.2	n/a	11/9/2020	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-9	0.2	n/a	11/9/2020	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Calcium (mg/L)	MW-1	141.9	n/a	11/9/2020	134	No	13	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	**MW-10**	**154.2**	**n/a**	**3/1/2021**	**160**	**Yes**	**17**	**0**	**No**	**0.001075**	**Param Intra 1 of 3**
Calcium (mg/L)	MW-2	178.2	n/a	11/9/2020	167	No	14	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-6	156.3	n/a	3/1/2021	153	No	14	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-7	193.1	n/a	11/9/2020	132	No	17	0	sqrt(x)	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-8	158.5	n/a	11/9/2020	158	No	15	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-9	122.1	n/a	2/2/2021	106	No	13	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-1	6.697	n/a	11/9/2020	5.24	No	14	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-10	23.19	n/a	3/1/2021	17.1	No	16	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-2	10.03	n/a	11/9/2020	7.03	No	14	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-6	1.945	n/a	3/1/2021	1.68	No	15	0	sqrt(x)	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-7	31.35	n/a	11/9/2020	3.18	No	17	0	sqrt(x)	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-8	8.265	n/a	2/2/2021	8.22	No	15	0	sqrt(x)	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-9	2.881	n/a	11/9/2020	1.3	No	13	30.77	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-1	511.5	n/a	2/2/2021	484	No	12	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-10	1760	n/a	11/9/2020	645	No	12	0	n/a	0.002173	NP Intra (normality) ...
Dissolved Solids (mg/l)	MW-2	720.7	n/a	11/9/2020	640	No	12	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-6	556.1	n/a	11/9/2020	548	No	12	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-7	761	n/a	11/9/2020	453	No	16	0	n/a	0.001026	NP Intra (normality) ...
Dissolved Solids (mg/l)	MW-8	548.8	n/a	2/2/2021	518	No	13	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-9	478.8	n/a	11/9/2020	475	No	12	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-1	0.3201	n/a	11/9/2020	0.271	No	13	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-10	0.7252	n/a	11/9/2020	0.476	No	12	0	x^2	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-2	0.3818	n/a	11/9/2020	0.313	No	15	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-6	0.37	n/a	11/9/2020	0.308	No	14	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-7	0.4235	n/a	11/9/2020	0.288	No	12	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-8	0.4612	n/a	11/9/2020	0.357	No	12	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-9	0.4678	n/a	11/9/2020	0.324	No	12	0	No	0.001075	Param Intra 1 of 3
pH (S.U.)	MW-1	7.54	6.74	2/2/2021	7.36	No	15	0	n/a	0.002625	NP Intra (normality) ...
pH (S.U.)	MW-10	7.438	6.876	3/1/2021	7.08	No	17	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-2	7.379	6.717	11/9/2020	7.26	No	16	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-6	7.586	6.899	3/1/2021	7.15	No	16	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-7	7.666	6.822	11/9/2020	7.45	No	17	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-8	8.24	7.1	2/2/2021	7.18	No	15	0	n/a	0.002625	NP Intra (normality) ...
pH (S.U.)	MW-9	7.487	6.883	2/2/2021	7	No	13	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	MW-1	39.1	n/a	11/9/2020	30.9	No	12	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	**MW-10**	**39.5**	**n/a**	**3/1/2021**	**48.4**	**Yes**	**16**	**0**	**No**	**0.001075**	**Param Intra 1 of 3**
Sulfate (mg/L)	MW-2	181.2	n/a	11/9/2020	129	No	13	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-6	39.39	n/a	3/1/2021	32.2	No	13	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-7	188.2	n/a	11/9/2020	34	No	16	0	sqrt(x)	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-8	69.33	n/a	11/9/2020	58.5	No	13	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-9	27.26	n/a	11/9/2020	17.4	No	12	0	No	0.001075	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

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...
- [ ] 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... 0.02

☑ 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 > 90

Transformation

- ◉ Use Ladder of Powers
- ○ Natural Log or No Transformation
- ○ Never Transform
- ○ Use Specific Transformation: Natural Log

☐ Use Best W Statistic

☐ Plot Transformed Values

Deseasonalize (Intra- and InterWell)

- ◉ If Seasonality Is Detected
- ○ If Seasonality Is Detected Or Insufficient to Test
- ○ Always (When Sufficient Data)
- ○ Never

☐ Always Use Non-Parametric

Facility α

Statistical Evaluations per Year: 2

Constituents Analyzed: 7

Downgradient (Compliance) Wells: 7

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 [ ] 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)

Jared Morrison
December 16, 2022

ATTACHMENT 2-2

Spring 2021 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

October 5, 2021

To: Iatan Generating Station
20250 State Route 45 N
Platte County, Missouri
Evergy Metro, Inc.

From: SCS Engineers

RE: Determination of Statistically Significant Increases - CCR Landfill
Spring 2021 Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Iatan Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Groundwater samples were collected on May 20, 2021. Review and validation of the results from the May 2021 Detection Monitoring Event was completed on July 27, 2021, which constitutes completion and finalization of detection monitoring laboratory analyses. 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 20, 2021 and August 4, 2021.

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation did not identify any SSIs above background.

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

Iatan Generating Station
Determination of Statistically Significant Increases
CCR Landfill
October 5, 2021

ATTACHMENT 1

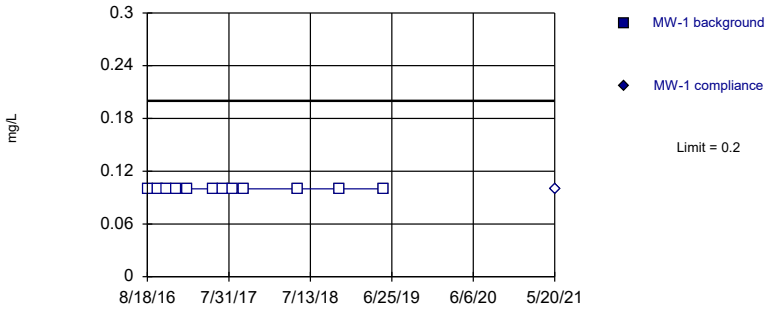
Sanitas™ Output

Sanitas™ v.9.6.31 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). Insufficient data to test for seasonality: data were not deseasonalized.

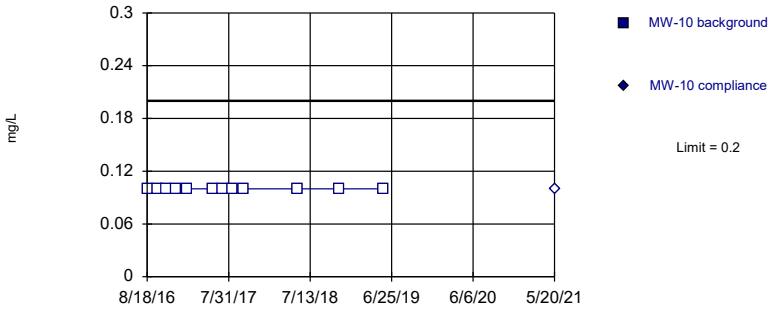
Constituent: Boron Analysis Run 9/16/2021 12:29 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.31 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). Insufficient data to test for seasonality: data were not deseasonalized.

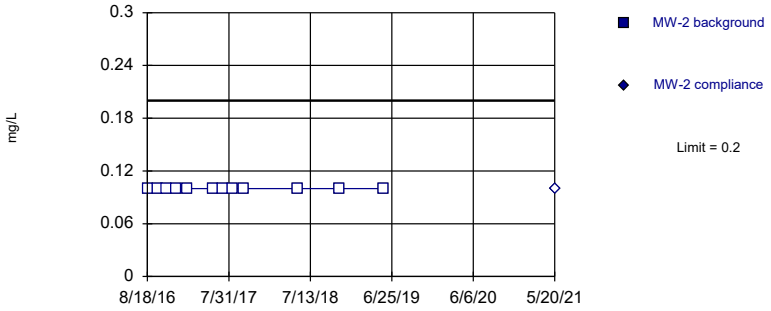
Constituent: Boron Analysis Run 9/16/2021 12:29 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.31 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). Insufficient data to test for seasonality: data were not deseasonalized.

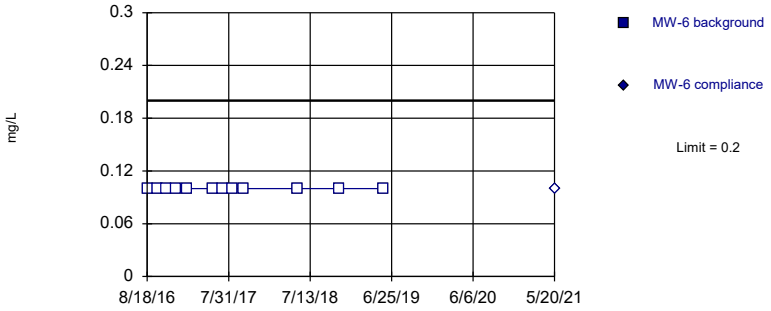
Constituent: Boron Analysis Run 9/16/2021 12:29 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.31 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). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 9/16/2021 12:29 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Boron Analysis Run 9/16/2021 12:34 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-1	MW-1	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6
8/18/2016	<0.2		<0.2		<0.2		<0.2	
9/29/2016	<0.2		<0.2		<0.2		<0.2	
11/9/2016	<0.2		<0.2		<0.2		<0.2	
12/21/2016	<0.2		<0.2		<0.2		<0.2	
2/3/2017	<0.2		<0.2		<0.2		<0.2	
5/24/2017	<0.2		<0.2		<0.2		<0.2	
7/5/2017	<0.2		<0.2		<0.2		<0.2	
8/17/2017	<0.2		<0.2		<0.2		<0.2	
10/5/2017	<0.2		<0.2		<0.2		<0.2	
5/21/2018	<0.2		<0.2		<0.2		<0.2	
11/12/2018	<0.2		<0.2		<0.2		<0.2	
5/20/2019	<0.2		<0.2		<0.2		<0.2	
5/20/2021		<0.2		<0.2		<0.2		<0.2

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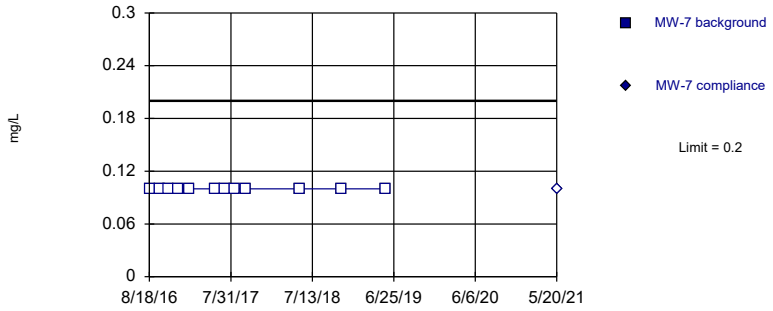
Hollow symbols indicate censored values.

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). Insufficient data to test for seasonality: data were not deseasonalized.

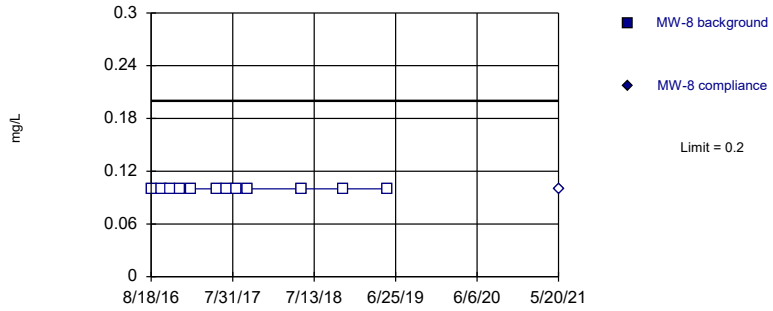
Constituent: Boron Analysis Run 9/16/2021 12:30 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.31 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



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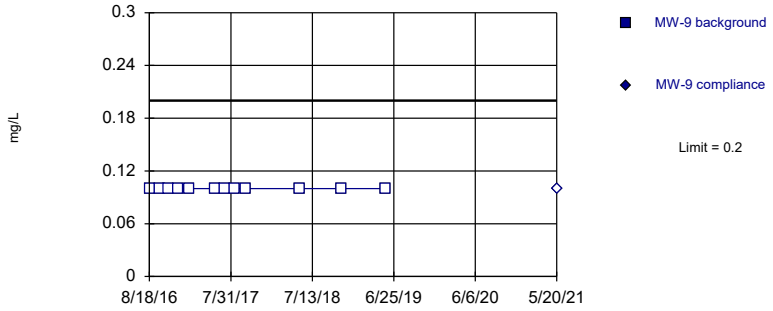
Constituent: Boron Analysis Run 9/16/2021 12:30 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.31 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). Insufficient data to test for seasonality: data were not deseasonalized.

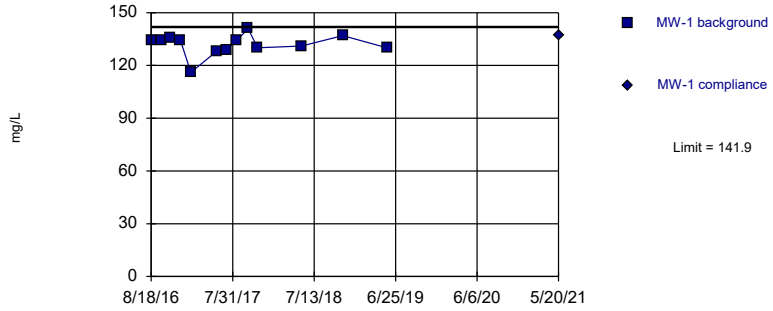
Constituent: Boron Analysis Run 9/16/2021 12:30 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.31 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=131.8, Std. Dev.=5.97, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8766, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 9/16/2021 12:30 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Boron, Calcium Analysis Run 9/16/2021 12:34 PM View: CCR LF III

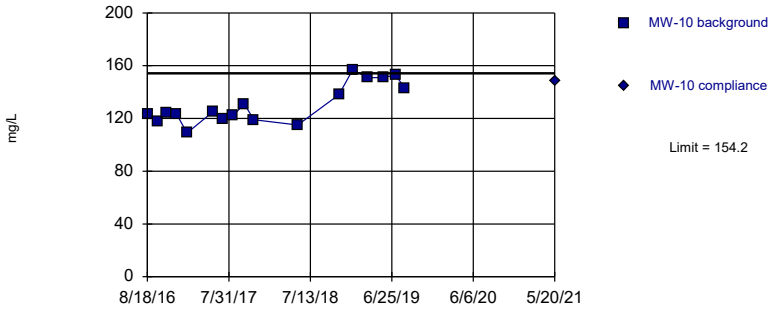
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1
8/18/2016	<0.2		<0.2		<0.2		134	
9/29/2016	<0.2		<0.2		<0.2		134	
11/9/2016	<0.2		<0.2		<0.2		136	
12/21/2016	<0.2		<0.2		<0.2		134	
2/3/2017	<0.2		<0.2		<0.2		116	
5/24/2017	<0.2		<0.2		<0.2		128	
7/5/2017	<0.2		<0.2		<0.2		129	
8/17/2017	<0.2		<0.2		<0.2		134	
10/5/2017	<0.2		<0.2		<0.2		141	
11/14/2017							130	
5/21/2018	<0.2		<0.2		<0.2		131	
11/12/2018	<0.2		<0.2		<0.2		137	
5/20/2019	<0.2		<0.2		<0.2		130	
5/20/2021		<0.2		<0.2		<0.2		137

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=130.7, Std. Dev.=15.04, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8963, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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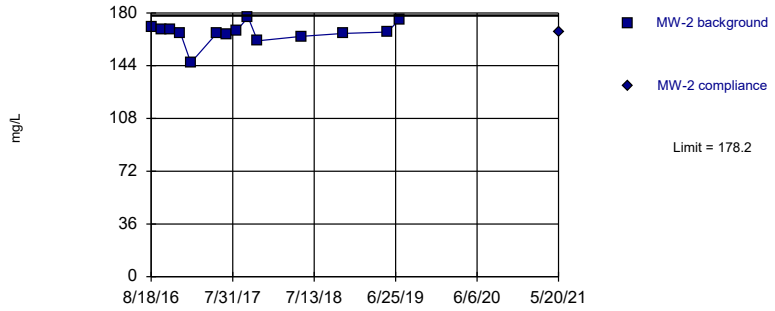
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=166.4, Std. Dev.=7.175, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8366, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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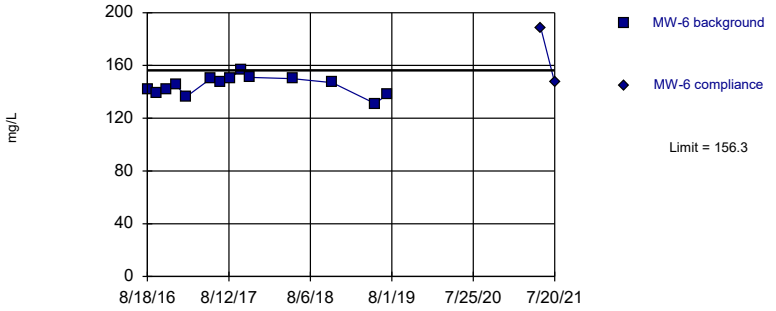
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=144.7, Std. Dev.=7.032, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9678, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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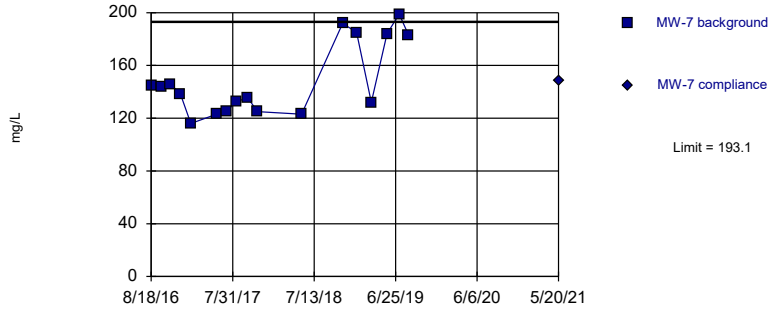
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=12.15, Std. Dev.=1.12, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8573, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Calcium Analysis Run 9/16/2021 12:34 PM View: CCR LF III

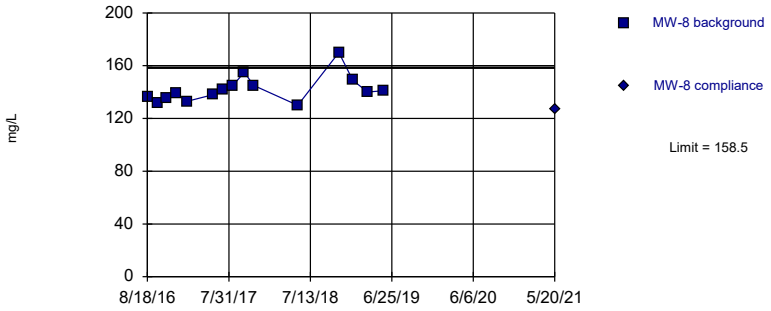
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7
8/18/2016	123		170		142		145	
9/29/2016	118		169		139		144	
11/9/2016	124		169		142		146	
12/21/2016	123		166		146		138	
2/3/2017	109		146		136		116	
5/24/2017	125		166		150		123	
7/5/2017	120		165		147		125	
8/17/2017	122		168		150		133	
10/5/2017	131		177		157		135	
11/14/2017	119		161		151		125	
5/21/2018	115		164		150		123	
11/12/2018	138		166		147		192	
1/10/2019	157						185	
3/14/2019	151						132	
5/20/2019	151		167		131		184	
7/11/2019	153		175		138		199	
8/20/2019	143						183	
5/20/2021		148		167		188		148
7/20/2021						147		

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=142, Std. Dev.=10.21, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8744, critical = 0.835. Kappa = 1.615 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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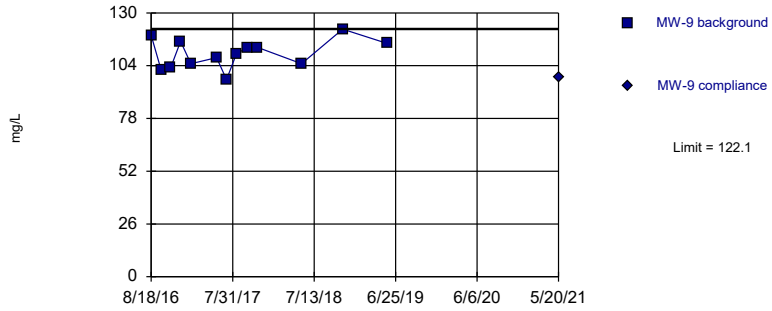
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=109.9, Std. Dev.=7.272, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9797, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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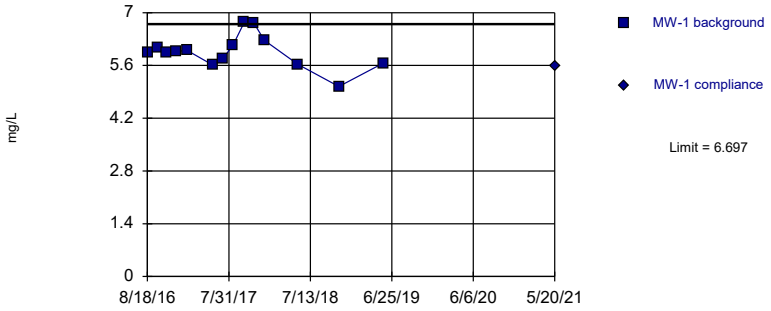
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=5.966, Std. Dev.=0.4435, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9436, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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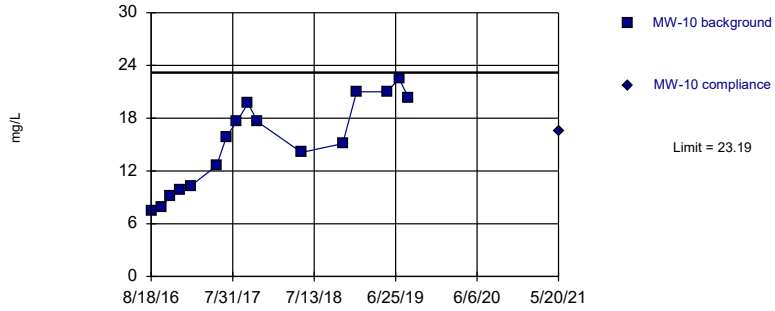
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=15.12, Std. Dev.=5.1, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9286, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Calcium, Chloride Analysis Run 9/16/2021 12:34 PM View: CCR LF III

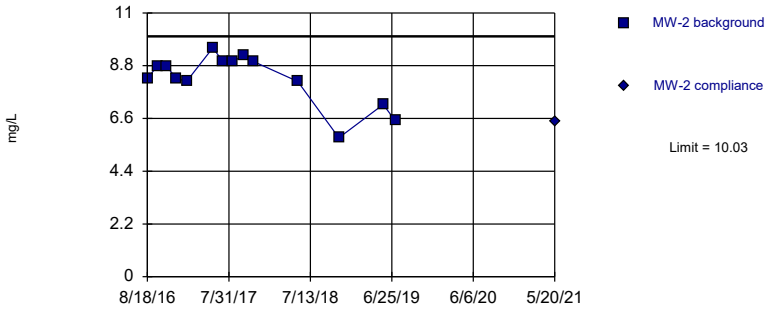
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1	MW-10	MW-10
8/18/2016	136		119		5.93		7.47	
9/29/2016	132		102		6.07		7.83	
11/9/2016	135		103		5.95		9.15	
12/21/2016	139		116		5.97		9.84	
2/3/2017	133		105		6		10.3	
5/24/2017	138		108		5.61		12.6	
7/5/2017	142		97.2		5.78		15.9	
8/17/2017	145		110		6.13		17.6	
10/5/2017	155		113		6.75		19.7	
11/14/2017	145		113		6.73		17.6	
12/29/2017					6.27			
5/21/2018	130		105		5.63		14.1	
11/12/2018	170		122		5.04		15.1	
1/10/2019	149						21	
3/14/2019	140							
5/20/2019	141		115		5.66		21	
7/11/2019							22.5	
8/20/2019							20.3	
5/20/2021		127		98.4		5.59		16.5

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=8.253, Std. Dev.=1.076, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8719, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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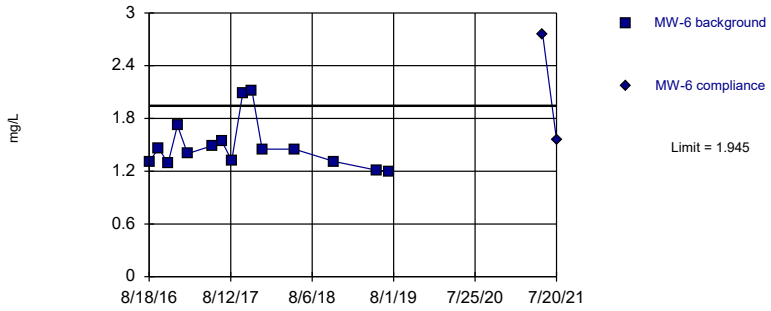
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=1.216, Std. Dev.=0.1104, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8387, critical = 0.835. Kappa = 1.615 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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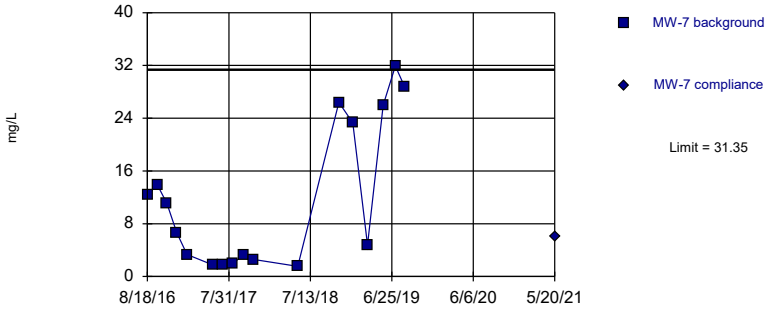
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=3.057, Std. Dev.=1.629, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8683, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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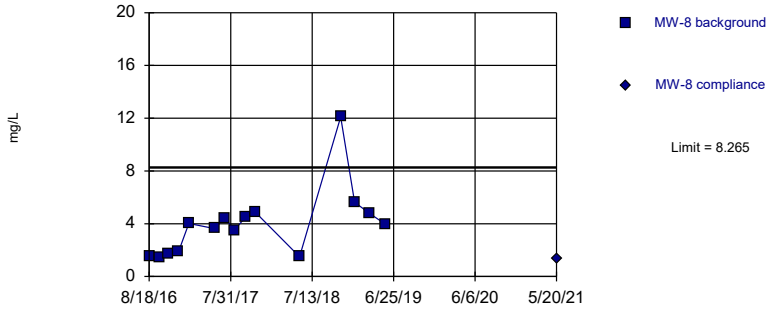
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=1.907, Std. Dev.=0.5992, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8695, critical = 0.835. Kappa = 1.615 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Chloride Analysis Run 9/16/2021 12:34 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

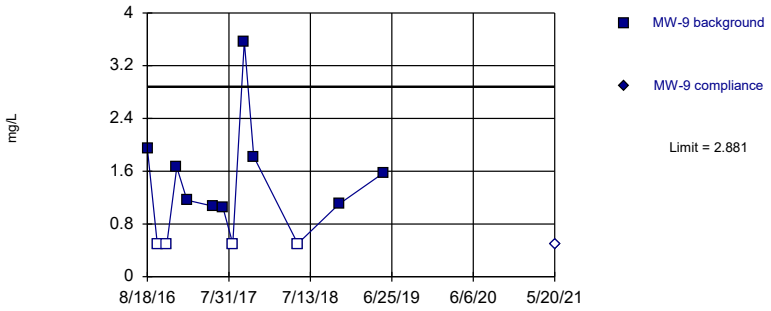
	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8
8/18/2016	8.26		1.31		12.3		1.5	
9/29/2016	8.79		1.46		13.9		1.42	
11/9/2016	8.76		1.29		11.1		1.76	
12/21/2016	8.24		1.72		6.64		1.89	
2/3/2017	8.17		1.4		3.32		4.02	
5/24/2017	9.54		1.49		1.76		3.63	
7/5/2017	8.99		1.54		1.81		4.44	
8/17/2017	8.98		1.32		2		3.53	
10/5/2017	9.23		2.09		3.32		4.55	
11/14/2017	8.97		2.12		2.58		4.86	
12/29/2017			1.45					
5/21/2018	8.14		1.45		1.54		1.5	
11/12/2018	5.79		1.31		26.4		12.1	
1/10/2019					23.3		5.63	
3/14/2019					4.77		4.79	
5/20/2019	7.18		1.21		26		3.98	
7/11/2019	6.5		1.2		31.9			
8/20/2019					28.7			
5/20/2021		6.45		2.75		6.03		1.34
7/20/2021				1.56				

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (after Aitchison`s Adjustment): Mean=1.151, Std. Dev.=1.028, n=13, 30.77% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8333, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

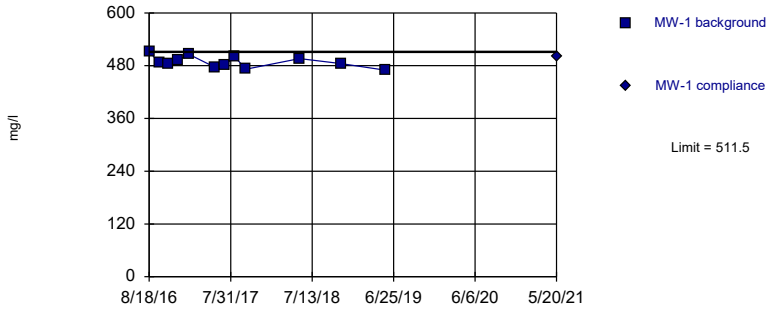
Constituent: Chloride Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=488.6, Std. Dev.=13.34, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9663, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

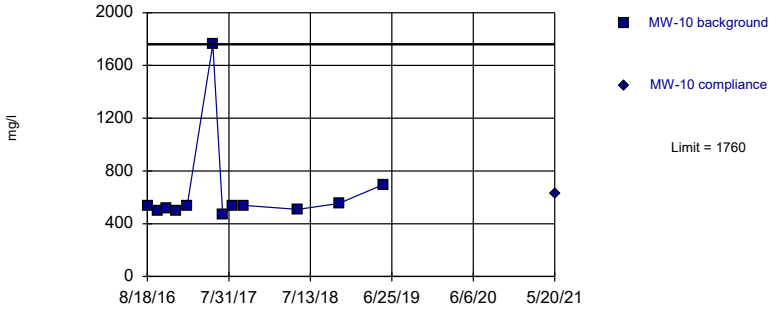
Constituent: Dissolved Solids Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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). Insufficient data to test for seasonality: data were not deseasonalized.

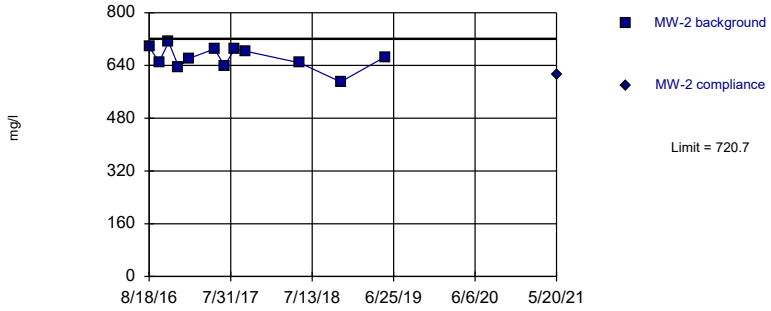
Constituent: Dissolved Solids Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=663.3, Std. Dev.=33.46, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9501, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Dissolved Solids Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Chloride, Dissolved Solids Analysis Run 9/16/2021 12:34 PM View: CCR LF III

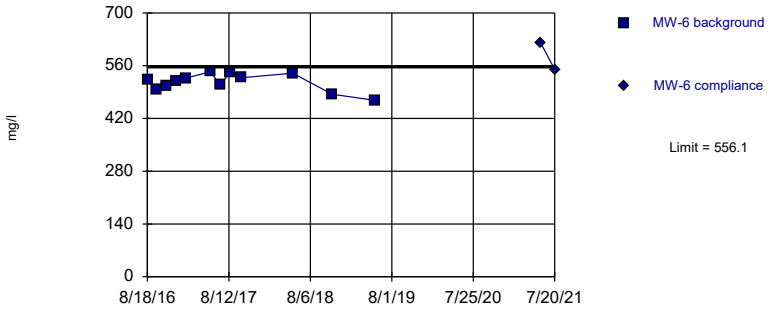
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-9	MW-9	MW-1	MW-1	MW-10	MW-10	MW-2	MW-2
8/18/2016	1.95		513		532		696	
9/29/2016	<1		486		502		651	
11/9/2016	<1		484		516		711	
12/21/2016	1.66		493		497		636	
2/3/2017	1.16		506		531		661	
5/24/2017	1.07		477		1760		690	
7/5/2017	1.06		481		474		638	
8/17/2017	<1		500		539		690	
10/5/2017	3.57		472		539		683	
11/14/2017	1.82							
5/21/2018	<1		496		509		648	
11/12/2018	1.1		485		554		590	
5/20/2019	1.57		470		697		666	
5/20/2021		<1		500		628		611

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=515.5, Std. Dev.=23.66, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9399, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

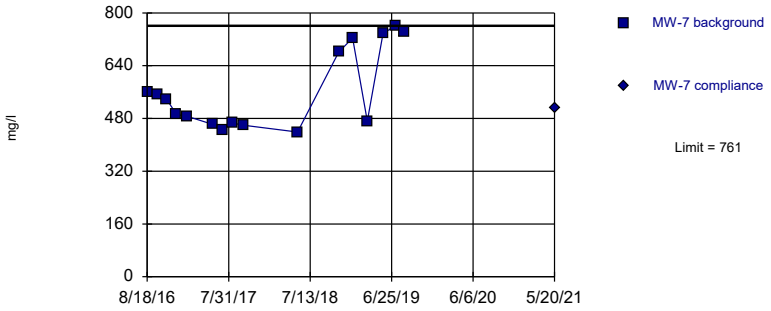
Constituent: Dissolved Solids Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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 16 background values. Well-constituent pair annual alpha = 0.002051. Individual comparison alpha = 0.001026 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

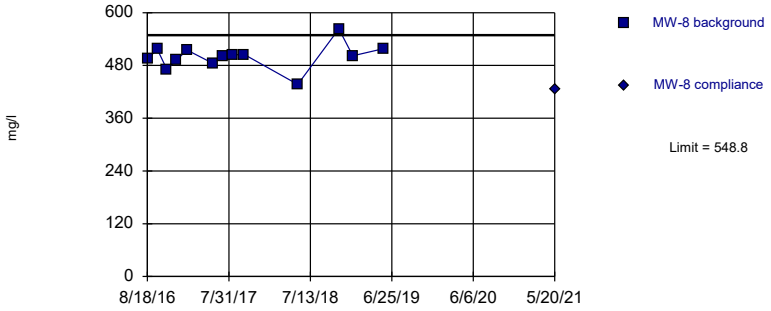
Constituent: Dissolved Solids Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=500.3, Std. Dev.=28.83, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9252, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

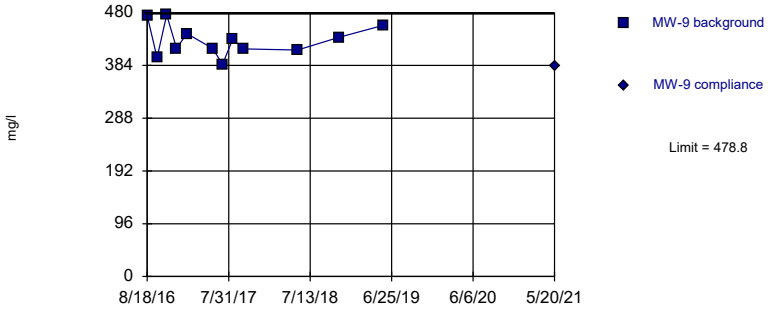
Constituent: Dissolved Solids Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=429.7, Std. Dev.=28.65, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9417, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Dissolved Solids Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Dissolved Solids Analysis Run 9/16/2021 12:34 PM View: CCR LF III

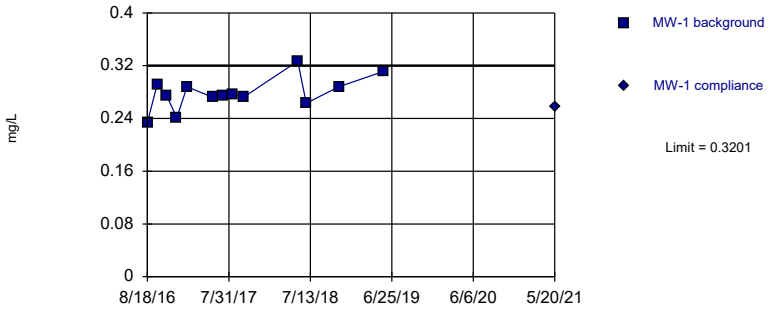
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9
8/18/2016	522		560		494		475	
9/29/2016	498		554		517		398	
11/9/2016	506		538		471		476	
12/21/2016	519		492		493		415	
2/3/2017	527		487		515		442	
5/24/2017	544		462		485		415	
7/5/2017	508		445		500		386	
8/17/2017	542		466		504		431	
10/5/2017	528		459		505		414	
5/21/2018	540		439		437		412	
11/12/2018	484		681		563		435	
1/10/2019			724		502			
3/14/2019			472					
5/20/2019	468		737		518		457	
7/11/2019			761					
8/20/2019			743					
5/20/2021		619		513		426		384
7/20/2021		550						

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.278, Std. Dev.=0.02501, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9534, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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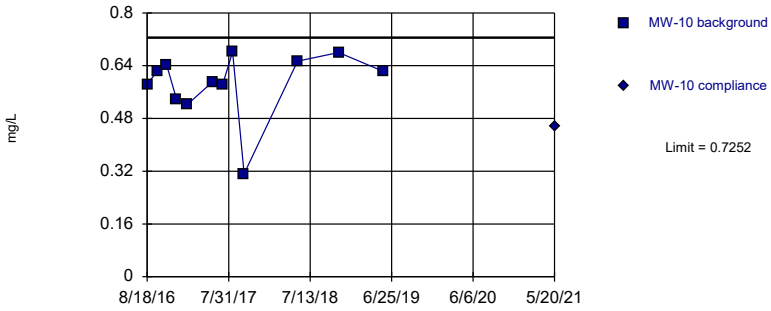
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square transformation): Mean=0.3525, Std. Dev.=0.1011, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8795, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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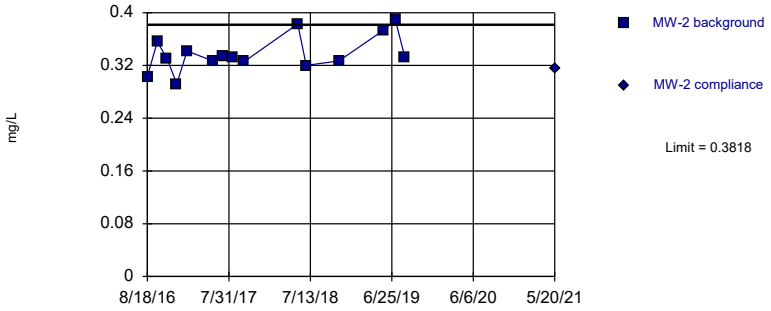
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3379, Std. Dev.=0.02721, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9262, critical = 0.835. Kappa = 1.615 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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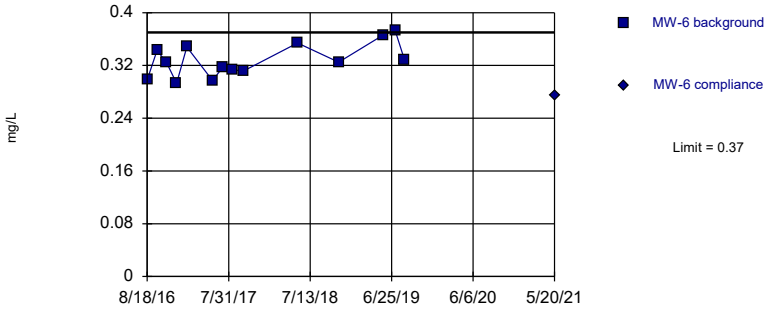
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3279, Std. Dev.=0.02554, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9487, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Fluoride Analysis Run 9/16/2021 12:34 PM View: CCR LF III

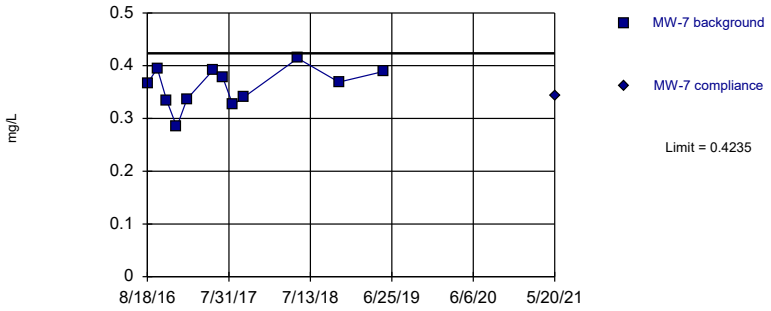
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-1	MW-1	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6
8/18/2016	0.234		0.584		0.303		0.298	
9/29/2016	0.292		0.622		0.356		0.343	
11/9/2016	0.274		0.642		0.331		0.324	
12/21/2016	0.241		0.538		0.292		0.293	
2/3/2017	0.288		0.521		0.342		0.348	
5/24/2017	0.272		0.591		0.327		0.297	
7/5/2017	0.275		0.582		0.334		0.317	
8/17/2017	0.276		0.682		0.332		0.313	
10/5/2017	0.273		0.312		0.326		0.312	
5/21/2018	0.327		0.654		0.383		0.354	
6/26/2018	0.263				0.32			
11/12/2018	0.288		0.68		0.327		0.325	
5/20/2019	0.311		0.623		0.373		0.366	
7/11/2019					0.389		0.373	
8/20/2019					0.333		0.328	
5/20/2021		0.257		0.457		0.316		0.274

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3603, Std. Dev.=0.03685, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9559, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

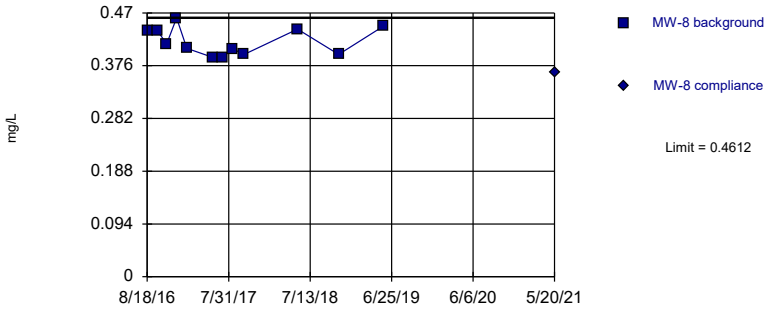
Constituent: Fluoride Analysis Run 9/16/2021 12:30 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.4189, Std. Dev.=0.02467, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8902, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

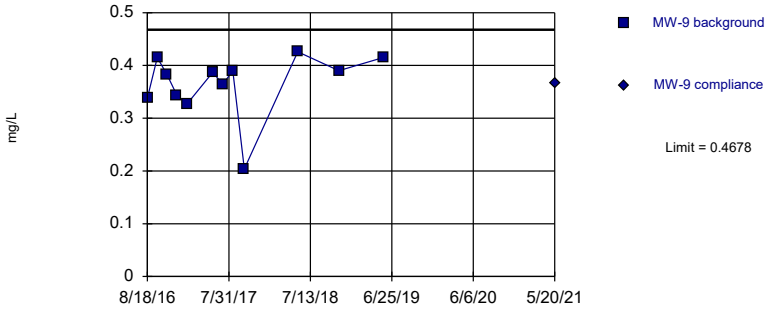
Constituent: Fluoride Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3653, Std. Dev.=0.05978, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8122, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

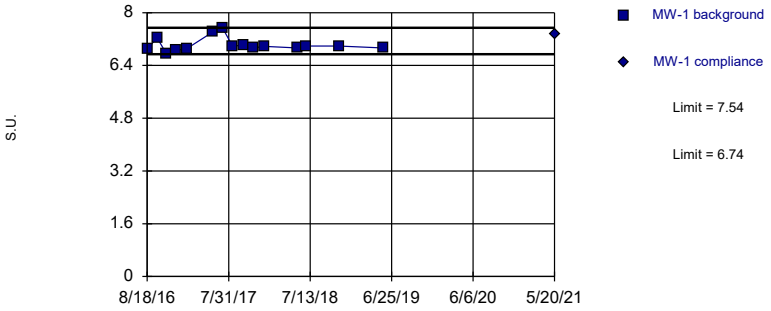
Constituent: Fluoride Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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 15 background values. Well-constituent pair annual alpha = 0.005248. Individual comparison alpha = 0.002625 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Fluoride, pH Analysis Run 9/16/2021 12:34 PM View: CCR LF III

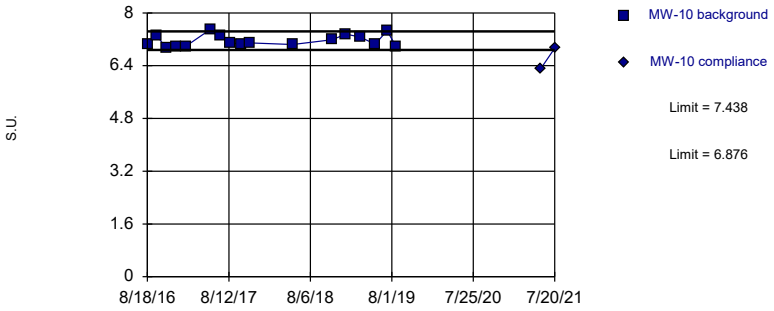
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1
8/18/2016	0.366		0.438		0.338		6.89	
9/29/2016	0.395		0.439		0.415		7.24	
11/9/2016	0.333		0.415		0.383		6.74	
12/21/2016	0.284		0.461		0.344		6.86	
2/3/2017	0.337		0.407		0.327		6.91	
5/24/2017	0.391		0.391		0.387		7.41	
7/5/2017	0.378		0.391		0.364		7.54	
8/17/2017	0.326		0.406		0.39		6.98	
10/5/2017	0.341		0.396		0.204		7.03	
11/14/2017							6.93	
12/29/2017							6.98	
5/21/2018	0.414		0.441		0.426		6.93	
6/26/2018							6.99	
11/12/2018	0.369		0.396		0.39		6.99	
5/20/2019	0.389		0.446		0.415		6.93	
5/20/2021		0.342		0.364		0.367		7.34

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.157, Std. Dev.=0.18, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9096, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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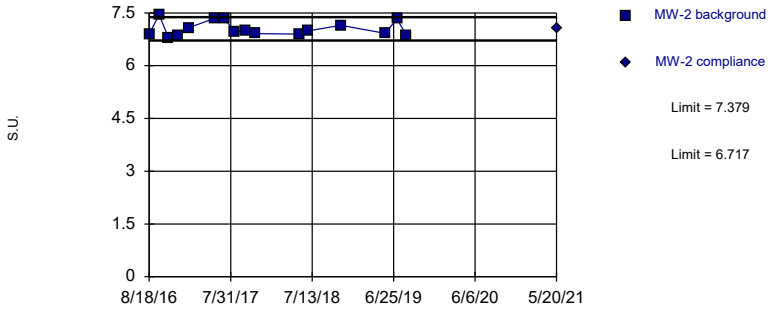
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.048, Std. Dev.=0.2096, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8784, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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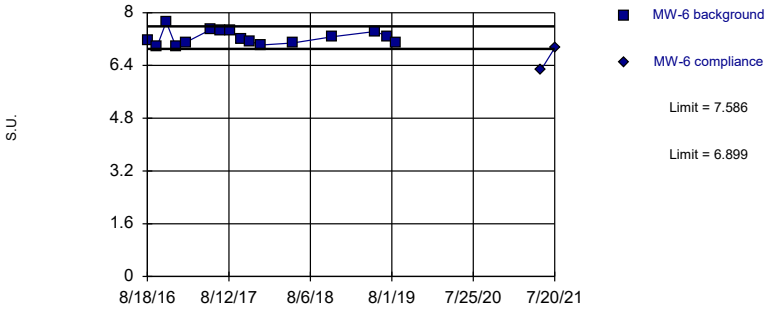
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.243, Std. Dev.=0.2171, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9298, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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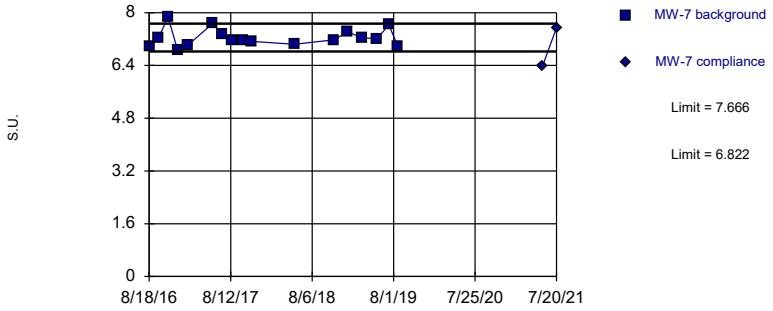
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.244, Std. Dev.=0.2706, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.916, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: pH Analysis Run 9/16/2021 12:34 PM View: CCR LF III

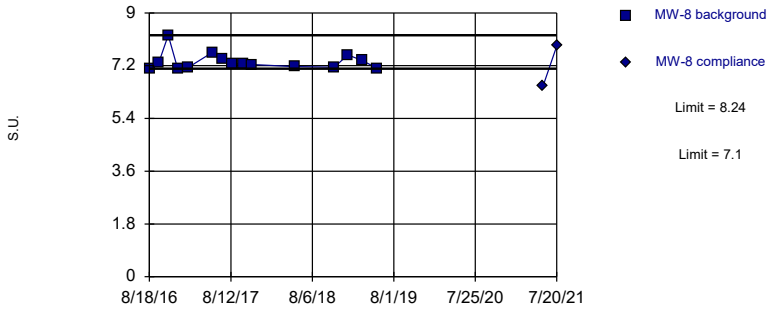
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7
8/18/2016	7.06		6.9		7.18		6.97	
9/29/2016	7.31		7.45		6.97		7.25	
11/9/2016	6.93		6.79		7.72		7.87	
12/21/2016	6.96		6.85		6.99		6.88	
2/3/2017	6.99		7.08		7.1		7.01	
5/24/2017	7.51		7.35		7.49		7.67	
7/5/2017	7.31		7.33		7.46		7.36	
8/17/2017	7.1		6.97		7.47		7.15	
10/5/2017	7.05		7		7.2		7.15	
11/14/2017	7.09		6.91		7.14		7.13	
12/29/2017					7.02			
5/21/2018	7.04		6.9		7.08		7.04	
6/26/2018			6.99					
11/12/2018	7.19		7.15		7.27		7.18	
1/10/2019	7.36						7.42	
3/14/2019	7.27						7.24	
5/20/2019	7.05		6.92		7.43		7.21	
7/11/2019	7.46		7.33		7.29		7.63	
8/20/2019	6.99		6.85		7.07		6.99	
5/20/2021		6.32		7.05		6.26		6.4
7/20/2021		6.93				6.93		7.54

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 15 background values. Well-constituent pair annual alpha = 0.005248. Individual comparison alpha = 0.002625 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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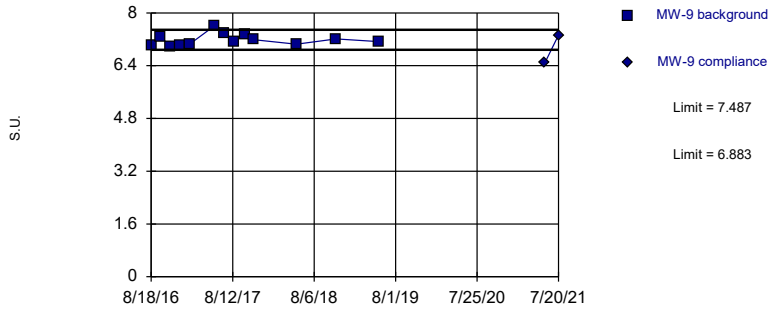
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.185, Std. Dev.=0.1795, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.895, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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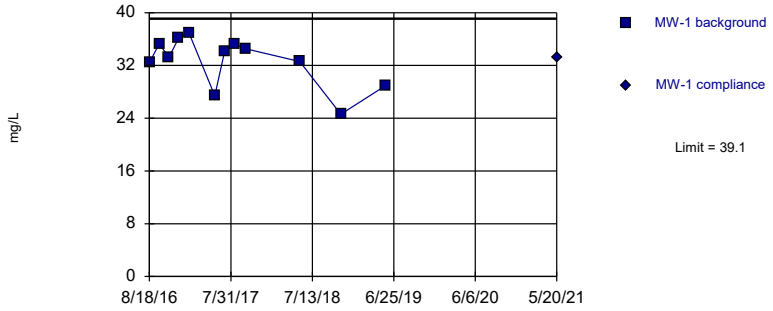
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=32.62, Std. Dev.=3.775, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8898, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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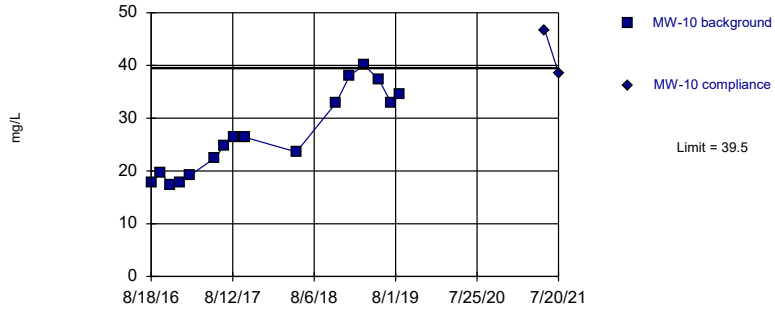
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=26.95, Std. Dev.=7.937, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9063, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: pH, Sulfate Analysis Run 9/16/2021 12:34 PM View: CCR LF III

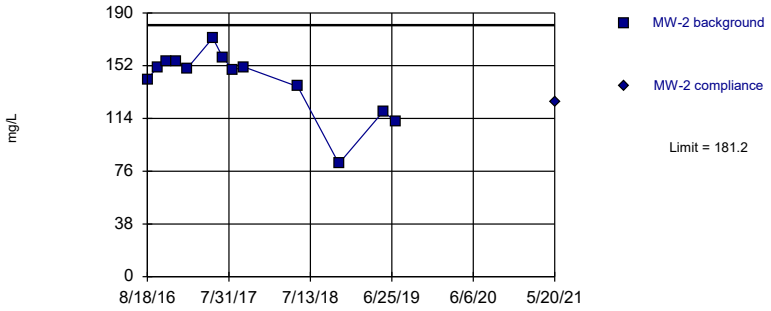
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1	MW-10	MW-10
8/18/2016	7.1		7.02		32.4		17.8	
9/29/2016	7.32		7.28		35.3		19.7	
11/9/2016	8.24		6.99		33.2		17.4	
12/21/2016	7.1		7.02		36.2		17.7	
2/3/2017	7.13		7.05		36.9		19.1	
5/24/2017	7.66		7.61		27.4		22.4	
7/5/2017	7.44		7.37		34.2		24.7	
8/17/2017	7.27		7.13		35.2		26.5	
10/5/2017	7.25		7.35		34.5		26.4	
11/14/2017	7.24		7.19					
5/21/2018	7.17		7.05		32.6		23.6	
11/12/2018	7.15		7.21		24.6		32.9	
1/10/2019	7.57						38	
3/14/2019	7.38						40.1	
5/20/2019	7.11		7.13		28.9		37.3	
7/11/2019							33	
8/20/2019							34.6	
5/20/2021		6.5		6.48		33.3		46.7
7/20/2021		7.87		7.33				38.6

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=141, Std. Dev.=23.93, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8552, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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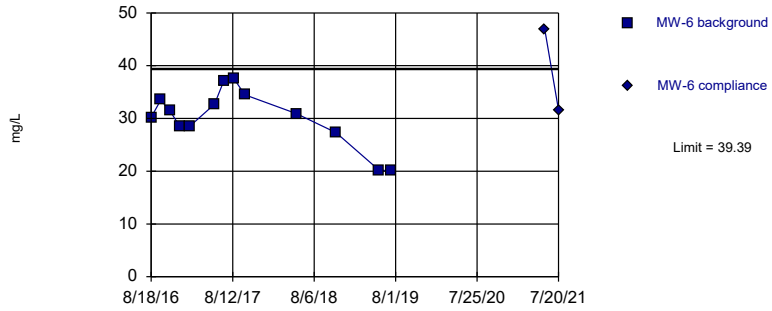
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=30.21, Std. Dev.=5.456, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9209, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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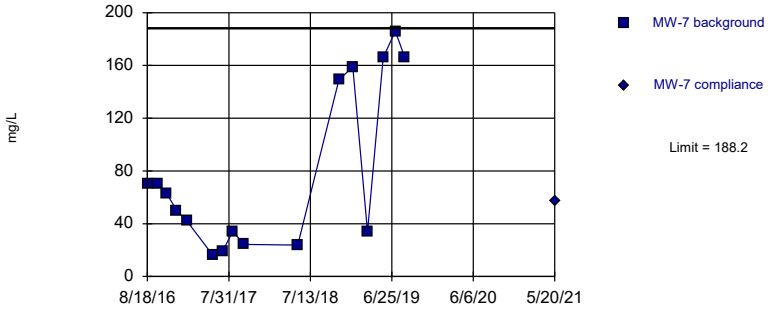
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=8.273, Std. Dev.=3.445, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8729, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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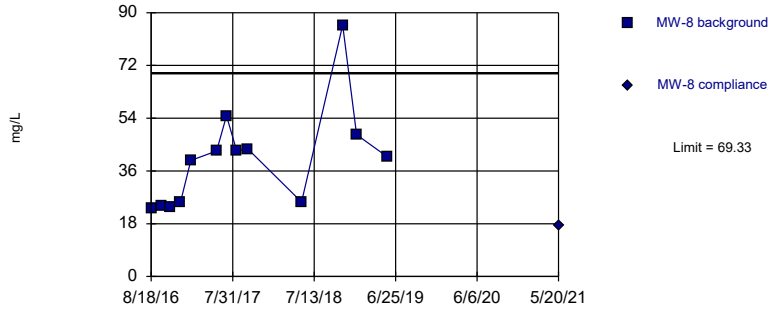
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=40.07, Std. Dev.=17.39, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8273, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Sulfate Analysis Run 9/16/2021 12:34 PM View: CCR LF III

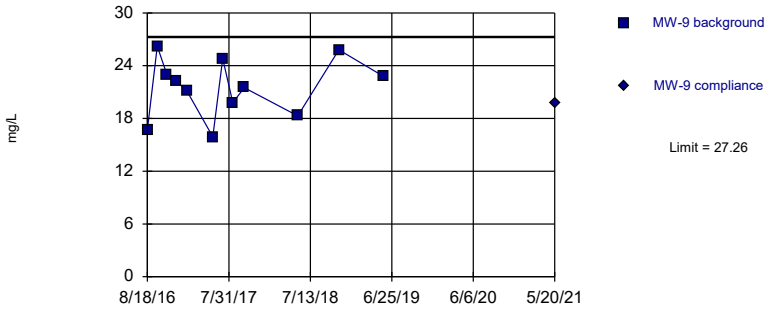
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8
8/18/2016	142		30.2		70.2		23.3	
9/29/2016	151		33.5		70.6		24.2	
11/9/2016	155		31.4		62.6		23.8	
12/21/2016	155		28.6		50		25.5	
2/3/2017	150		28.5		41.9		39.6	
5/24/2017	172		32.7		16.2		42.8	
7/5/2017	158		37.2		19.5		54.8	
8/17/2017	149		37.6		34.1		43	
10/5/2017	151		34.5		24.3		43.4	
5/21/2018	137		30.9		23.8		25.4	
11/12/2018	81.5		27.3		149		85.8	
1/10/2019					159		48.4	
3/14/2019					33.9			
5/20/2019	119		20.2		166		40.9	
7/11/2019	112		20.1		186			
8/20/2019					166			
5/20/2021		126		46.9		57.2		17.3
7/20/2021				31.6				

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=21.51, Std. Dev.=3.352, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9571, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 9/16/2021 12:31 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Sulfate Analysis Run 9/16/2021 12:34 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-9	MW-9
8/18/2016	16.7	
9/29/2016	26.2	
11/9/2016	23	
12/21/2016	22.2	
2/3/2017	21.1	
5/24/2017	15.9	
7/5/2017	24.8	
8/17/2017	19.8	
10/5/2017	21.5	
5/21/2018	18.3	
11/12/2018	25.8	
5/20/2019	22.8	
5/20/2021		19.7

Prediction Limit

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr Printed 9/16/2021, 12:34 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	MW-1	0.2	n/a	5/20/2021	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-10	0.2	n/a	5/20/2021	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-2	0.2	n/a	5/20/2021	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-6	0.2	n/a	5/20/2021	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-7	0.2	n/a	5/20/2021	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-8	0.2	n/a	5/20/2021	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-9	0.2	n/a	5/20/2021	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Calcium (mg/L)	MW-1	141.9	n/a	5/20/2021	137	No	13	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-10	154.2	n/a	5/20/2021	148	No	17	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-2	178.2	n/a	5/20/2021	167	No	14	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-6	156.3	n/a	7/20/2021	147	No	14	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-7	193.1	n/a	5/20/2021	148	No	17	0	sqrt(x)	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-8	158.5	n/a	5/20/2021	127	No	15	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-9	122.1	n/a	5/20/2021	98.4	No	13	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-1	6.697	n/a	5/20/2021	5.59	No	14	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-10	23.19	n/a	5/20/2021	16.5	No	16	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-2	10.03	n/a	5/20/2021	6.45	No	14	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-6	1.945	n/a	7/20/2021	1.56	No	15	0	sqrt(x)	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-7	31.35	n/a	5/20/2021	6.03	No	17	0	sqrt(x)	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-8	8.265	n/a	5/20/2021	1.34	No	15	0	sqrt(x)	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-9	2.881	n/a	5/20/2021	0.5ND	No	13	30.77	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-1	511.5	n/a	5/20/2021	500	No	12	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-10	1760	n/a	5/20/2021	628	No	12	0	n/a	0.002173	NP Intra (normality) ...
Dissolved Solids (mg/l)	MW-2	720.7	n/a	5/20/2021	611	No	12	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-6	556.1	n/a	7/20/2021	550	No	12	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-7	761	n/a	5/20/2021	513	No	16	0	n/a	0.001026	NP Intra (normality) ...
Dissolved Solids (mg/l)	MW-8	548.8	n/a	5/20/2021	426	No	13	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-9	478.8	n/a	5/20/2021	384	No	12	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-1	0.3201	n/a	5/20/2021	0.257	No	13	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-10	0.7252	n/a	5/20/2021	0.457	No	12	0	x^2	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-2	0.3818	n/a	5/20/2021	0.316	No	15	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-6	0.37	n/a	5/20/2021	0.274	No	14	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-7	0.4235	n/a	5/20/2021	0.342	No	12	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-8	0.4612	n/a	5/20/2021	0.364	No	12	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-9	0.4678	n/a	5/20/2021	0.367	No	12	0	No	0.001075	Param Intra 1 of 3
pH (S.U.)	MW-1	7.54	6.74	5/20/2021	7.34	No	15	0	n/a	0.002625	NP Intra (normality) ...
pH (S.U.)	MW-10	7.438	6.876	7/20/2021	6.93	No	17	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-2	7.379	6.717	5/20/2021	7.05	No	16	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-6	7.586	6.899	7/20/2021	6.93	No	16	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-7	7.666	6.822	7/20/2021	7.54	No	17	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-8	8.24	7.1	7/20/2021	7.87	No	15	0	n/a	0.002625	NP Intra (normality) ...
pH (S.U.)	MW-9	7.487	6.883	7/20/2021	7.33	No	13	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	MW-1	39.1	n/a	5/20/2021	33.3	No	12	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-10	39.5	n/a	7/20/2021	38.6	No	16	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-2	181.2	n/a	5/20/2021	126	No	13	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-6	39.39	n/a	7/20/2021	31.6	No	13	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-7	188.2	n/a	5/20/2021	57.2	No	16	0	sqrt(x)	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-8	69.33	n/a	5/20/2021	17.3	No	13	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-9	27.26	n/a	5/20/2021	19.7	No	12	0	No	0.001075	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

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...
- [ ] 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... 0.02

☑ 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 > 90

Transformation

- ◉ Use Ladder of Powers
- ○ Natural Log or No Transformation
- ○ Never Transform
- ○ Use Specific Transformation: Natural Log

☐ Use Best W Statistic

☐ Plot Transformed Values

Deseasonalize (Intra- and InterWell)

- ◉ If Seasonality Is Detected
- ○ If Seasonality Is Detected Or Insufficient to Test
- ○ Always (When Sufficient Data)
- ○ Never

☐ Always Use Non-Parametric

Facility α

Statistical Evaluations per Year: 2

Constituents Analyzed: 7

Downgradient (Compliance) Wells: 7

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 [ ] 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...

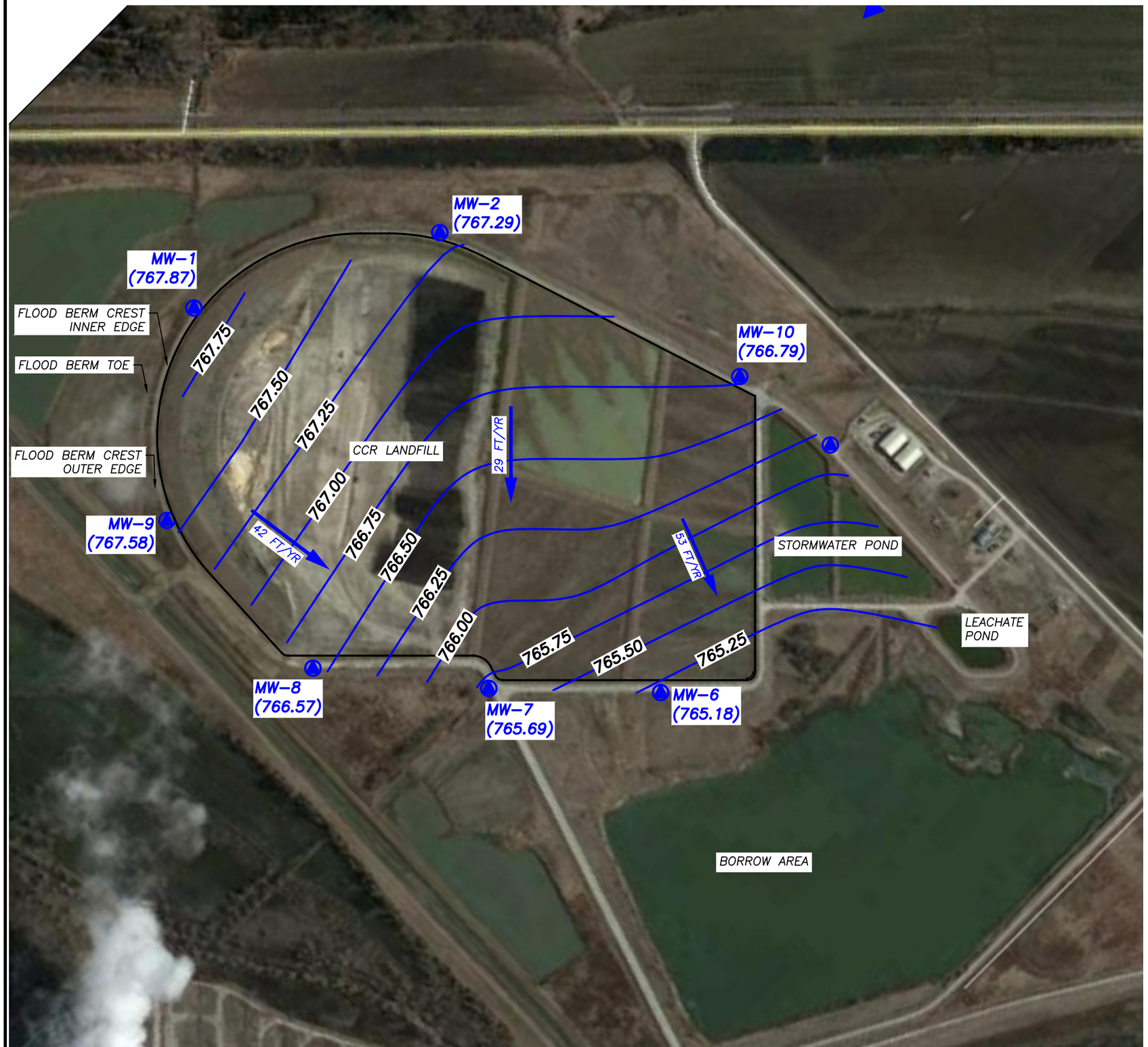
Piper, Stiff Diagram

- [ ] 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)

Jared Morrison
December 16, 2022

ATTACHMENT 3

Groundwater Potentiometric Surface Maps

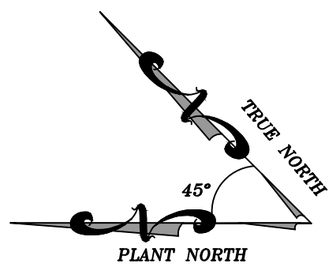


LEGEND

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS)
- MW-704 (869.52) CCR GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
- -875- GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS
- 16 FT/YR DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

NOTES:

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED MARCH 27, 2017
4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN
6. WATER LEVEL MEASUREMENTS COMPLETED ON MAY 20, 2021



500 0 500 1000
SCALE FEET

REV.	DATE	CK. BY
0	-	-
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-

SHEET TITLE
POTENTIOMETRIC SURFACE MAP (MAY 2021)
CCR LANDFILL

PROJECT TITLE
2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM

CLIENT
EVERGY METRO, INC.
IATAN GENERATING STATION
IATAN, MISSOURI

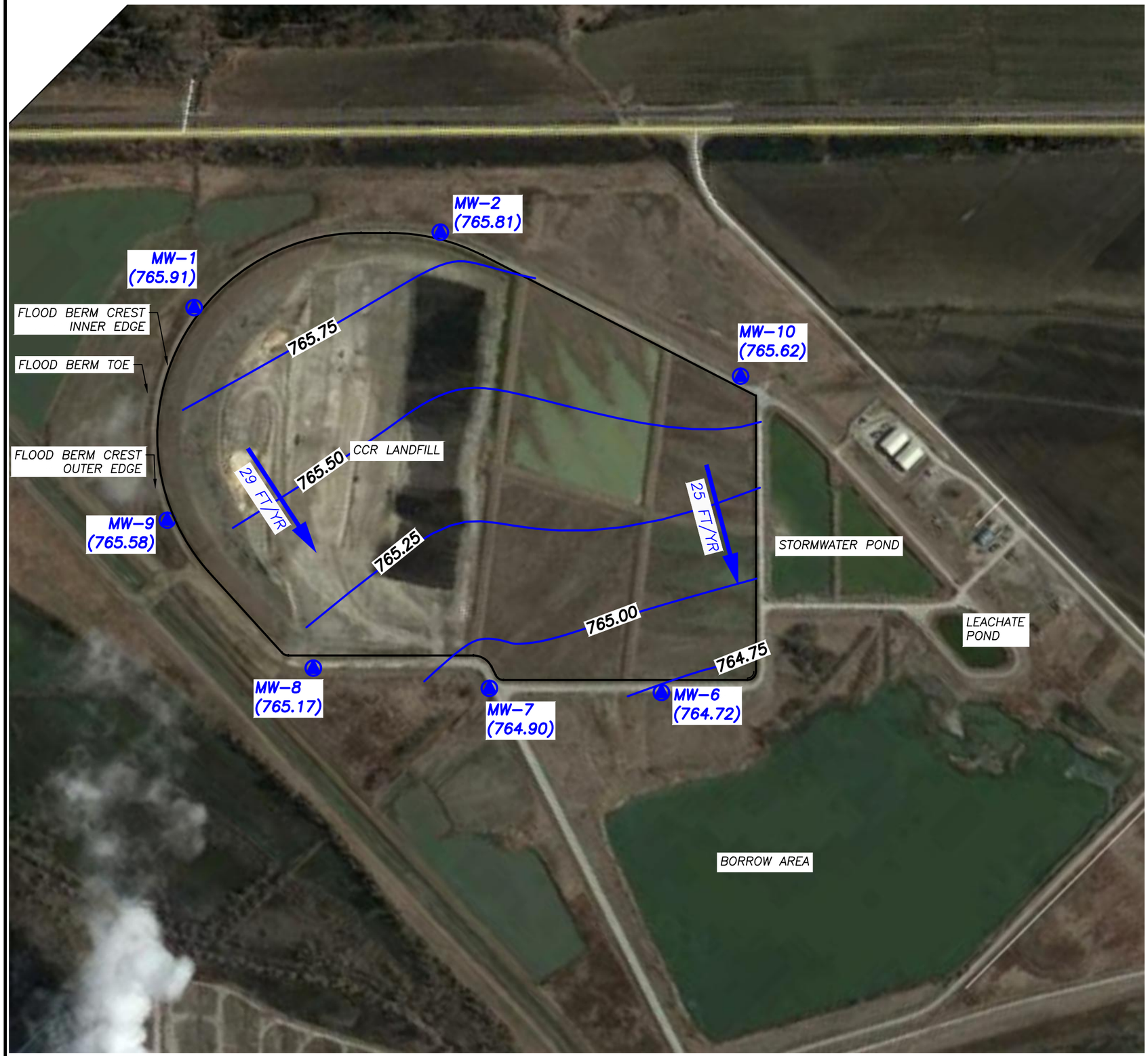
SCS ENGINEERS
8575 W. 110th St, Ste. 100
Overland Park, Kansas 66210
PH. (913) 681-0030 FAX: (913) 681-0012

PROJ. NO.	DWN. BY:	CHK. BY:	QA/QC BY:	PROJ. MGR
27213167.21	ALR	JRR	JRR	JRR
DSN. BY: TGW				

CADD FILE:
IATAN LF FIG 2 MAY 2021 V.5.DWG

DATE:
12/2/22

FIGURE NO.
2



LEGEND

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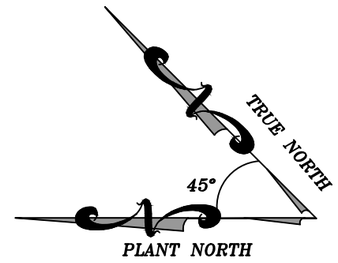
4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN
6. WATER LEVEL MEASUREMENTS COMPLETED ON NOVEMBER 17, 2021



500 0 500 1000
SCALE FEET

REV.	DATE	CK. BY
0	-	-
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-

SHEET TITLE
POTENTIOMETRIC SURFACE MAP (NOVEMBER 2021)
CCR LANDFILL

PROJECT TITLE
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QA/A RVW BY: JRR
PROJ. MGR: JRR

CADD FILE:
IATAN LF FIG 2 NOVEMBER 2021.DWG

DATE: 12/2/22

FIGURE NO.
3