2019-2020 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

ASH IMPOUNDMENT
IATAN GENERATING STATION
Platte County, MISSOURI

Presented To:
Evergy Metro, Inc.

SCS ENGINEERS

27213167.20 | July 2020, 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 2019-2020 Annual Groundwater Monitoring and Corrective Action Report for the Ash Impoundment 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 2019-2020 Annual Groundwater Monitoring and Corrective Action Report for the Ash Impoundment 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	July 29, 2020	NA	Original
1	December 16, 2022	Addendum 1	Added Addendum 1

Table of Contents

Section **Page**

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

Appendices

Appendix A Figures

Figure 1: Site Map

Appendix B Tables

Table 1: Appendix III Detection Monitoring Results

Table 2: Detection Monitoring Field Measurements

Appendix C Alternative Source Demonstration Reports

C.1 Groundwater Monitoring Alternative Source Demonstration Report April 2019 Groundwater Monitoring Event, Ash Impoundment, Iatan Generating Station (November 2019).

C.2 CCR Groundwater Monitoring Alternative Source Demonstration Report November 2019 Groundwater Monitoring Event, Ash Impoundment, Iatan Generating Station (June 2020).

Addendum1 2019-2020 Annual Groundwater Monitoring and Corrective Action Report Addendum 1

1 INTRODUCTION

This 2019-2020 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the "Coal Combustion Residuals (CCR) Final Rule" (Rule) published by the United States Environmental Protection Agency (USEPA) in the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, dated April 17, 2015 (USEPA, 2015) update published August 5, 2016 ("Extension Rule) to provide an extension of compliance deadlines for certain inactive surface impoundments. The Ash Impoundment is classified as an "inactive" CCR unit and is therefore regulated by the August 5, 2016 update to the Rule subject to the new 40 CFR 257.100(e). Owners and operators of inactive CCR surface impoundments subject to the provisions of the new 40 CFR 257.100(e)(5)(ii) are required to prepare an annual groundwater monitoring and corrective action report no later than July 31, 2020 per 40 CFR 257.90(e).

Specifically, this report was prepared for Evergy Metro, Inc. (f/k/a Kansas City Power & Light Company) to fulfill the requirements of 40 CFR 257.90(e). Changes to the text of 40 CFR 257.90(e) to indicate the update subject to the new 40 CFR 257.100(e) are shown in [brackets] and specific references to active CCR unit or expansions have been deleted. The applicable sections of the Rule are provided below in italics, followed by applicable information relative to the 2019-2020 Annual Groundwater Monitoring and Corrective Action Report for the Ash Impoundment at the Iatan Generating Station.

2 § 257.90(E) ANNUAL REPORT REQUIREMENTS

Annual groundwater monitoring and corrective action report. *For [inactive] CCR surface impoundments, no later than [July 31, 2019], and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For [inactive] CCR surface impoundments, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than [July 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 Ash Impoundment and all background (or upgradient) and downgradient monitoring wells with identification numbers for the Ash Impoundment groundwater monitoring program is provided as **Figure 1** in **Appendix A**.

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

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

No new monitoring wells were installed and no wells were decommissioned as part of the CCR groundwater monitoring program for the Ash Impoundment within the 2019-2020 monitoring period.

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

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

Only detection monitoring was conducted during the reporting period (2019-2020). Samples collected in Fall 2019 and Spring of 2020 were collected and analyzed for Appendix III detection monitoring constituents as indicated in Appendix B, Table 1 (Appendix III Detection Monitoring Results, and Table 2 (Detection Monitoring Field Measurements). The dates of sample collection, the monitoring program requiring the sample, and the results of the analyses are also provided in these tables. These tables include Spring 2019 second verification monitoring data, the Fall 2019 semiannual detection monitoring and verification monitoring data, and the Spring 2020 semiannual detection monitoring data with no verification sample data, which was not completed at the time of this report.

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

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

There was no transition between monitoring programs in 2019-2020. Only detection monitoring was conducted in the 2019-2020 annual reporting period.

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 Spring 2019 verification sampling and analyses per the certified statistical method,

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

c. completion of a successful alternative source demonstration for the Spring 2019 semiannual detection monitoring event,

d. completion of the Fall 2019 semiannual detection monitoring sampling and analysis event, and subsequent verification sampling per the certified statistical method,

e. completion of the statistical evaluation of the Fall 2019 semiannual detection monitoring event per the certified statistical method,

f. completion of a successful alternative source demonstration for the Fall 2019 semiannual detection monitoring event,

g. initiation of the Spring 2020 semiannual detection monitoring sampling and analysis event, and

h. completion of the 2019-2020 Annual Groundwater Monitoring and Corrective Action Report.

Description of Any Problems Encountered.

No noteworthy problems were encountered.

Discussion of Actions to Resolve the Problems.

Not applicable because no noteworthy problems were encountered.

Projection of Key Activities for the Upcoming Year (2020-2021).

Completion of verification sampling and data analysis, and the statistical evaluation for the Spring 2020 detection monitoring event, and, if required, alternative source demonstration(s). Fall 2020 semiannual groundwater sampling, analysis, statistical evaluation, and, if required, alternative source demonstration(s). Initiation of the Spring 2021 semiannual detection monitoring sampling and analysis event. Completion of the 2020-2021 Groundwater Monitoring and Corrective Action Report.

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 reports are included as **Appendix C**:

C.1 Groundwater Monitoring Alternative Source Demonstration Report April 2019 Groundwater Monitoring Event, Ash Impoundment, Iatan Generating Station (November 2019).

C.2 CCR Groundwater Monitoring Alternative Source Demonstration Report November 2019 Groundwater Monitoring Event, Ash Impoundment, Iatan Generating Station (June 2020).

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

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

Not applicable because there was no assessment monitoring conducted.

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

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

Not applicable because there was no assessment monitoring conducted.

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

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

Not applicable because there was no assessment monitoring conducted.

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

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

Not applicable because there was no assessment monitoring conducted.

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 Ash Impoundment. No warranties, express or implied, are intended or made.

APPENDIX A

FIGURES

Figure 1: Site Map

LEGEND:

MW-109 MONITORING WELL

NOTES:

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED JUNE 10, 2016.

400 0 400 800

SCALE FEET

REV.	DATE	CK. BY
0	-	-
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-

SHEET TITLE
SITE MAP
COAL ASH IMPOUNDMENT SYSTEM

PROJECT TITLE
2019-2020 GROUNDWATER MONITORING AND CORRECTIVE ACTIVE REPORT

CLIENT
EVERGY METRO, INC
IATAN GENERATING STATION
WESTON, 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/A RVW BY:	PROJ. MGR
27217413.20	MBJ	JRF	JRR	JRF

DSN. BY: JRR

CADD FILE:
27217413.20_FIG 1_ASH IMPOUNDMENT.DWG

DATE:
7/8/2020

DRAWING NO.
1

APPENDIX B

TABLES

Table 1: Appendix III Detection Monitoring Results

Table 2: Detection Monitoring Field Measurements

APPENDIX C

ALTERNATIVE SOURCE DEMONSTRATION

C.1 Groundwater Monitoring Alternative Source Demonstration Report April 2019 Groundwater Monitoring Event, Ash Impoundment, Iatan Generating Station (November 2019)

C.2. CCR Groundwater Monitoring Alternative Source Demonstration Report November 2019 Groundwater Monitoring Event, Ash Impoundment, Iatan Generating Station (June 2020)

C.1 Groundwater Monitoring Alternative Source Demonstration Report April 2019 Groundwater Monitoring Event, Ash Impoundment, Iatan Generating Station (November 2019)

GROUNDWATER MONITORING
ALTERNATIVE SOURCE DEMONSTRATION REPORT
APRIL 2019 GROUNDWATER MONITORING EVENT

ASH IMPOUNDMENT
IATAN GENERATING STATION
PLATTE COUNTY, MISSOURI

Presented To:

Evergy Metro, Inc.

Presented By:

SCS ENGINEERS

8575 West 110th Street, Suite 100

Overland Park, Kansas 66210

November 2019

File No. 27213167.19

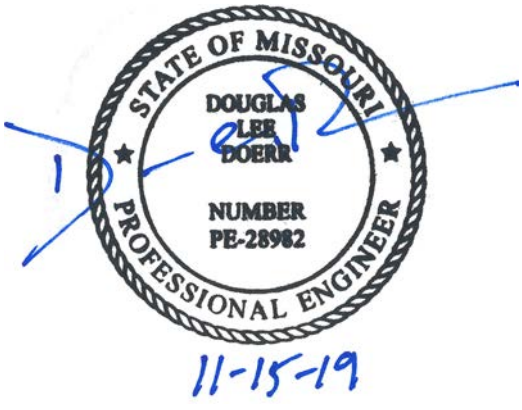
CERTIFICATIONS

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 Ash Impoundment 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 Ash Impoundment 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

Table of Contents

Section **Page**

CERTIFICATIONS ..... **i**
1 Regulatory Framework **1**
2 Statistical Results **1**
3 Alternative Source Demonstration **2**
3.1 Box and Whiskers Plots 2
3.2 Representativeness of Background 2
3.3 Piper Diagram Plots 3
4 Conclusion **3**
5 General Comments **4**

Appendices

Appendix A Box and Whiskers Plots
Appendix B Hydrograph of Missouri River Stage
Appendix C Piper Diagram

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 Ash Impoundment at the Iatan Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated April 16, 2019. The initial detection monitoring sampling event was scheduled for March 2019; however, the historic flooding of the Missouri River in March prevented the sampling event until flood waters receded and the sampling event was performed April 29, 2019. Review and validation of the results from the April 2019 Detection Monitoring Event was completed on June 27, 2019, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on May 20, 2019 and July 23, 2019. The second verification sample was not collected until July because of additional flooding in June 2019.

The completed statistical evaluation identified one Appendix III constituent above its respective prediction limit. The prediction limit for chloride in monitoring well MW-107 is 25.9 mg/L. The detection monitoring sample was reported at 33.3 mg/L. The first verification re-sample was collected on May 20, 2019 with a result of 34.2 mg/L. The second verification re-sample was collected on July 23, 2019 with a result of 34.3 mg/L.

Therefore, in accordance with the Statistical Method Certification, the detection monitoring sample for chloride from monitoring well MW-107 exceeds its prediction limit and is a confirmed statistically significant increase (SSI) over background.

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified an SSI above the background prediction limit for chloride in monitoring well MW-107.

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 Ash Impoundment at the Iatan Generating Station, there are multiple lines of supporting evidence to indicate the above SSI was not caused by a release from the Ash Impoundment. 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.

Although an SSI was only identified in monitoring well MW-107, box and whiskers plots for chloride were prepared for monitoring wells MW-107 and MW-109, the collector well, and a stormwater sample to allow comparison of the concentrations. The comparison between wells indicates the chloride concentrations are similar between the three wells and stormwater with greater variability in MW-107 than MW-109 and a concentration in the stormwater nearly as high as the highest level in MW-107. The samples collected that exceed the prediction limit for chloride were all collected shortly after significant flooding and inundation of the well. This demonstrates that a source other than the Ash Impoundment could have caused the SSI over background levels, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Box and whisker plots are provided in **Appendix A**.

3.2 REPRESENTATIVENESS OF BACKGROUND

Representativeness is defined as the level of how well or how accurately a sample set reflects actual or natural conditions. If the upper and lower prediction limits for the background concentration of chloride for MW-107 represents the entire population of historical concentrations of chloride for MW-107 under all natural conditions, including low river stages, high river stages, flooding, drought, etc., the background data set would have good representativeness. However, due to the inherent constraints of the CCR Final Rule, and the limited number of background data points over a limited period of time, the background data set for chloride for MW-107 does not exhibit good representativeness. The background data set does not include data collected under the full spectrum of natural conditions such as those experienced

during and after the historic Missouri River flooding in the spring and fall of 2019 in which MW-107 was inundated three times during parts of March-April, May-June, and September-October. A hydrograph of the Missouri River stage at St. Joseph, Missouri, showing the river stage during the time period in which background data was collected and the time period when compliance data points were collected is provided in **Appendix B**. The upper and lower prediction limits for chloride in MW-107 were calculated from eight data points between February 28, 2018 and February 15, 2019 and is not believed to be representative of the entire population of chloride concentrations in MW-107 under naturally occurring conditions, such as flooding. This demonstrates that a source other than the Ash Impoundment could have caused the SSI over background levels, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

3.3 PIPER DIAGRAM PLOTS

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

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

A piper diagram generated for MW-107 and leachate from the nearby ash landfill is provided in **Appendix C** and indicates the groundwater from this well does not exhibit the same geochemical characteristics as the leachate. The groundwater plots in a different area than the leachate indicating the waters are different. This demonstrates that a source other than the Ash Impoundment caused the SSI over background levels for chloride or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

4 CONCLUSION

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

5 GENERAL COMMENTS

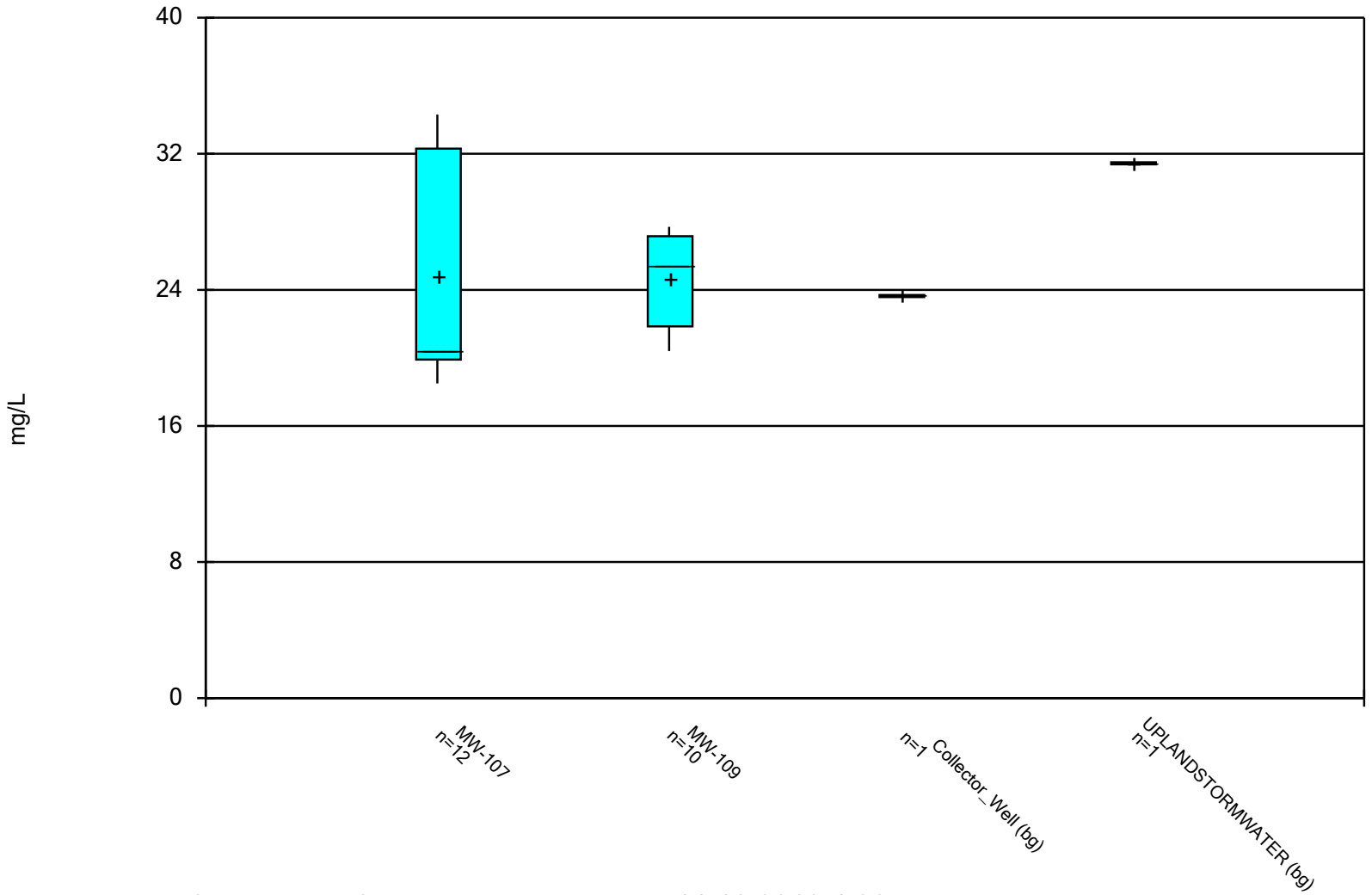
This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of Evergy Metro, Inc. for specific application to the 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: Chloride Analysis Run 11/12/2019 4:30 PM View: Ash Impound III

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

Box & Whiskers Plot

Constituent: Chloride (mg/L) Analysis Run 11/12/2019 4:31 PM View: Ash Impound III

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

	MW-107	MW-109	Collector_Wel...	UPLANDSTORMWA...
6/17/2016			23.7	
2/27/2018		25.2		
2/28/2018	18.5			
4/16/2018	19.7	23.1		
5/21/2018	20.6	25.7		
7/19/2018	20.1	27.7		
9/10/2018		27.2		
9/11/2018	19			
10/29/2018	20.2	27.1		
12/19/2018		26.5		
12/20/2018	20.2			
2/15/2019	25.9	21.2		
4/29/2019	33.3	22.5		
5/20/2019	34.2			
7/23/2019	34.3			
11/4/2019	31.3	20.4		31.5
Median	20.4	25.45	23.7	31.5
LowerQ.	19.9	21.85	23.7	31.5
UpperQ.	32.3	27.15	23.7	31.5
Min	18.5	20.4	23.7	31.5
Max	34.3	27.7	23.7	31.5
Mean	24.78	24.66	23.7	31.5

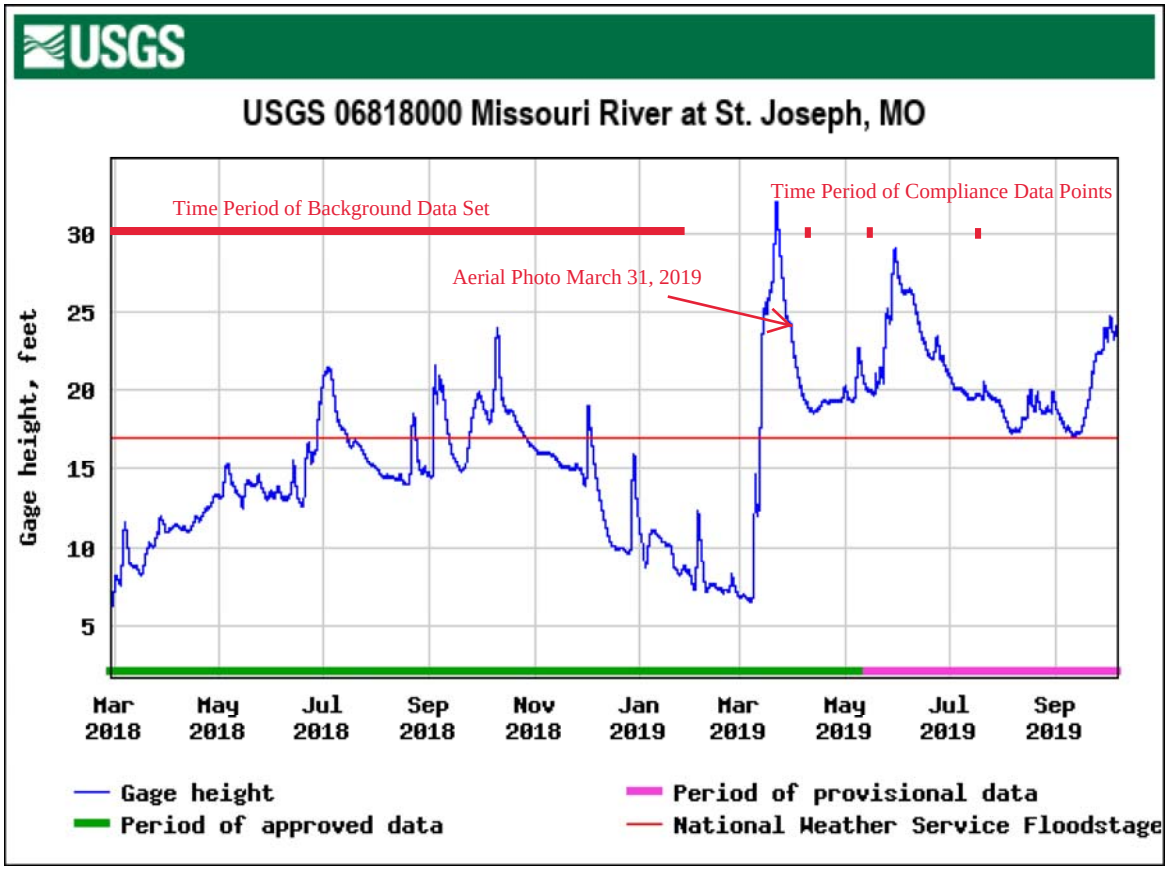
Box & Whiskers Plot

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr Printed 11/12/2019, 4:31 PM

Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Chloride (mg/L)	MW-107	12	24.78	6.576	1.898	20.4	18.5	34.3	0
Chloride (mg/L)	MW-109	10	24.66	2.659	0.8408	25.45	20.4	27.7	0
Chloride (mg/L)	Collector...	1	23.7	0	0	23.7	23.7	23.7	0
Chloride (mg/L)	UPLANDSTO...	1	31.5	0	0	31.5	31.5	31.5	0

Appendix B

Missouri River Stage Hydrograph

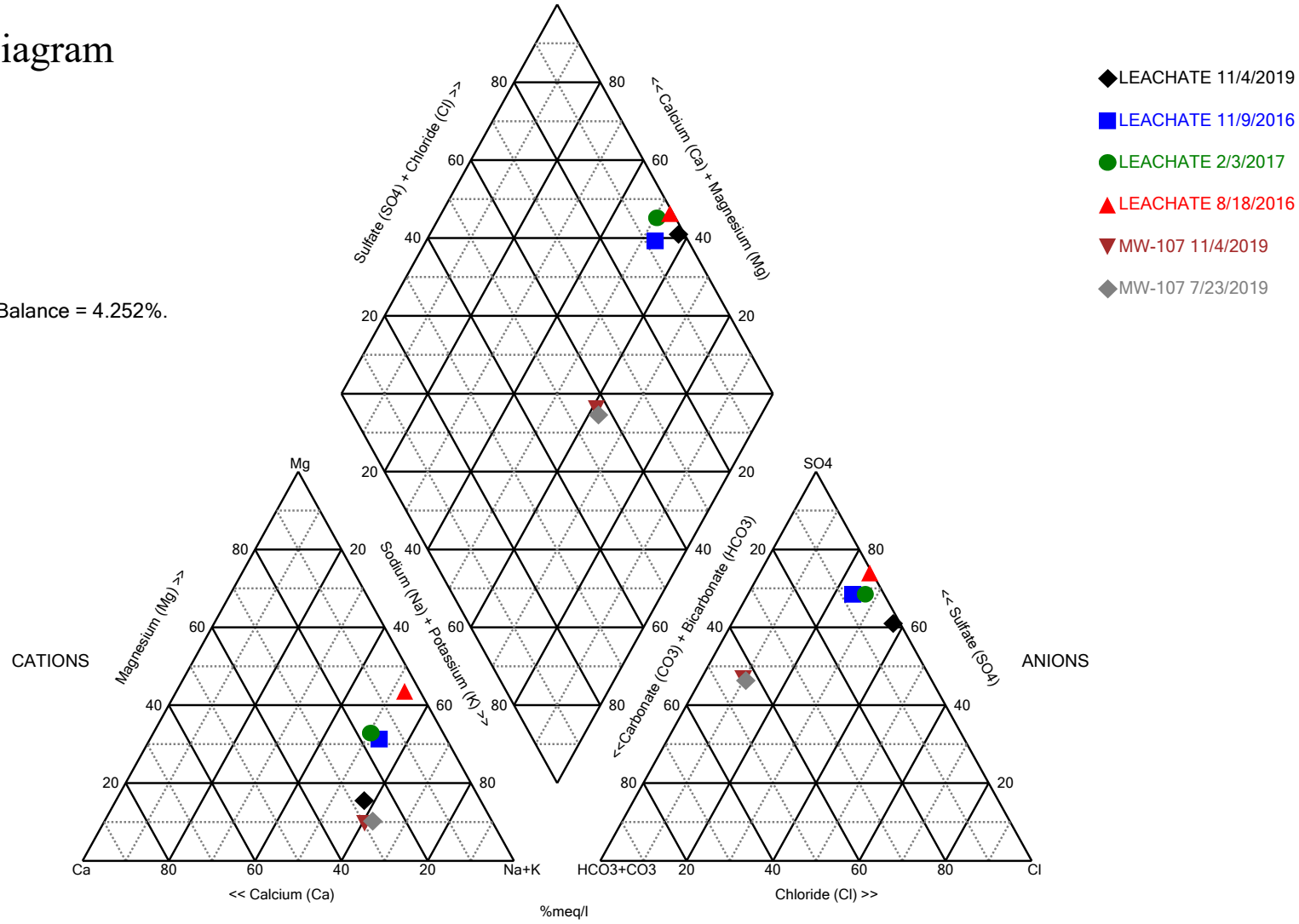

USGS
USGS 06818000 Missouri River at St. Joseph, MO
Time Period of Background Data Set
Time Period of Compliance Data Points
Aerial Photo March 31, 2019
Gage height, feet
30
25
20
15
10
5
Mar 2018
May 2018
Jul 2018
Sep 2018
Nov 2018
Jan 2019
Mar 2019
May 2019
Jul 2019
Sep 2019
Gage height
Period of approved data
Period of provisional data
National Weather Service Floodstage

Appendix C

Piper Diagram

Piper Diagram

Cation-Anion Balance = 4.252%.



Analysis Run 11/12/2019 4:46 PM View: Ash Impound III

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

Piper Diagram

Analysis Run 11/12/2019 4:47 PM View: Ash Impound III

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

Totals (ppm)	Na	K	Ca	Mg	Cl	SO4	HCO3	CO3
LEACHATE 8/18/2016	9250	689	573	4240	6990	28000	644	20
LEACHATE 11/9/2016	1230	90.7	334	398	876	3460	480	20
LEACHATE 2/3/2017	1880	121	560	671	1760	6070	505	20
LEACHATE 11/4/2019	1110	51.7	460	163	2340	5230	206	20
MW-107 7/23/2019	139	7.31	54.8	12	34.3	220	227	20
MW-107 11/4/2019	131	7.13	57.5	10.9	31.3	221	223	20

C.2. CCR Groundwater Monitoring Alternative Source Demonstration Report November 2019 Groundwater Monitoring Event, Ash Impoundment, Iatan Generating Station (June 2020)

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

ASH IMPOUNDMENT
IATAN GENERATING STATION
PLATTE COUNTY, MISSOURI

Presented To:

Evergy Metro, Inc.

Presented By:

SCS ENGINEERS

8575 West 110th Street, Suite 100

Overland Park, Kansas 66210

June 2020

File No. 27213167.20

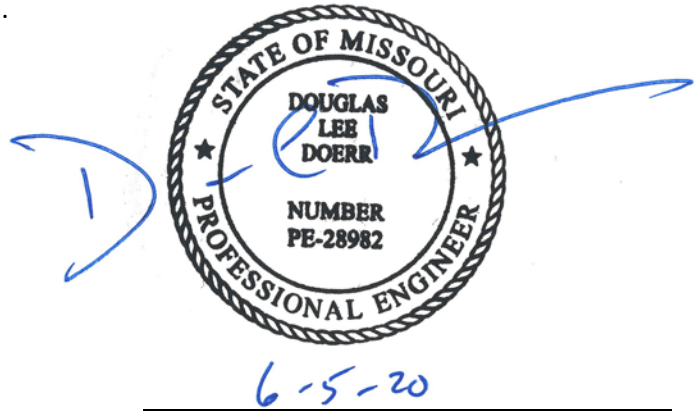
CERTIFICATIONS

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 Ash Impoundment 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 Ash Impoundment 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

Table of Contents

Section Page

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

Appendices

Appendix A Box and Whiskers Plots
Appendix B Hydrograph of Missouri River Stage
Appendix C Piper Diagram Plots and Analytical Results
Appendix D Time Series Plots

1 REGULATORY FRAMEWORK

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

2 STATISTICAL RESULTS

Statistical analysis of monitoring data from the groundwater monitoring system for the Ash Impoundment at the Iatan Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated April 16, 2019. Groundwater samples were collected on November 4, 2019. Review and validation of the results from the November 2019 Detection Monitoring Event was completed on December 12, 2019, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on January 16, 2020 and February 4, 2020.

The completed statistical evaluation identified one Appendix III constituent above the prediction limit established for monitoring wells MW-105 and MW-107.

Constituent/Monitoring Well	*UPL	Observation November 4, 2019	1st Verification January 16, 2020	2nd Verification February 4, 2020
Chloride				
MW-105	19.3	20.2	20.4	20.9
MW-107	25.9	31.3	34.3	27.5

*UPL – Upper Prediction Limit

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified an SSI above the background prediction limit for chloride in monitoring wells MW-105 and MW-107.

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 Ash Impoundment at the Iatan Generating Station, there are multiple lines of supporting evidence to indicate the above SSI was not caused by a release from the Ash Impoundment. 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.

Chloride SSIs were identified in monitoring wells MW-105 and MW-107. Box and whiskers plots for chloride were prepared for monitoring wells MW-105 and MW-107, collector well, and a stormwater sample to allow comparison of the concentrations. The comparison between wells indicates the chloride concentrations are a little higher with more variability in MW-107. The chloride concentration in the collector well is higher than MW-105 and about equal to the average concentration in MW-107. The chloride concentration in the stormwater sample is higher than any of the concentrations in MW-105 and similar to the post-flooding concentrations in MW-107. The samples collected that exceed the prediction limit for chloride were collected shortly after significant flooding and inundation of the wells. The flooding and well inundation likely affected the groundwater in the some of the wells. This demonstrates that a source other than the Ash Impoundment could have caused the SSIs over background levels, or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Box and whisker plots are provided in **Appendix A**.

3.2 REPRESENTATIVENESS OF BACKGROUND

Representativeness is defined as the level of how well or how accurately a sample set reflects actual or natural conditions. If the upper and lower prediction limits for the background concentration of chloride for MW-105 and MW-107 represents the entire population of historical concentrations of chloride for MW-105 and MW-107 under all natural conditions, including low river stages, high river stages, flooding, drought, etc., the background data set would have good representativeness. However, due to the inherent constraints of the CCR Final Rule, and the limited number of background data points over a limited period of time, the background data set for chloride for MW-105 and MW-107 does not exhibit good representativeness. The background data set does not include data collected under the full spectrum of natural conditions such as those experienced during and after the historic Missouri River flooding in the spring and fall of 2019 in which MW-105 and MW-107 were inundated three times during parts of March-April, May-June, and September-October. A hydrograph of the Missouri River stage at St.

Joseph, Missouri, showing the river stage during the time period in which background data was collected and the time period when compliance data points were collected is provided in **Appendix B**. The upper and lower prediction limits for chloride in MW-105 and MW-107 were calculated from eight data points between February 28, 2018 and February 15, 2019 and are not believed to be representative of the entire population of chloride concentrations in MW-105 and MW-107 under naturally occurring conditions, such as during and following flooding. This demonstrates that a source other than the Ash Impoundment could have caused the SSIs over background levels, or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

3.3 PIPER DIAGRAM PLOTS

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

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

A piper diagram generated for MW-105, MW-107 and leachate from the nearby ash landfill is provided along with analytical results in **Appendix C** and indicates the groundwater from this well does not exhibit the same geochemical characteristics as the leachate. The groundwater plots in a different area than the leachate indicating the waters are different. This demonstrates that a source other than the Ash Impoundment could have caused the SSIs over background levels for chloride or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

3.4 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.

Time series plots for chloride were prepared for monitoring wells MW-105 and MW-107 and a stormwater sample to allow comparison of the concentrations. The comparison between wells indicates MW-107 responded to the flooding with an increase of chloride concentrations and the MW-105 response was delayed and subdued relative to MW-107. Additionally, the chloride concentration in the stormwater

sample is higher than any of the concentrations in MW-105 and similar to the post-flooding concentrations in MW-107. The samples collected that exceed the prediction limit for chloride were collected shortly after significant flooding and inundation of the wells. This demonstrates that a source other than the Ash Impoundment could have caused the SSIs over background levels, or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or 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 Ash Impoundment caused the SSI over background levels, or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Based on the successful ASD, the owner or operator of the Ash Impoundment may continue with the detection monitoring program under § 257.94.

5 GENERAL COMMENTS

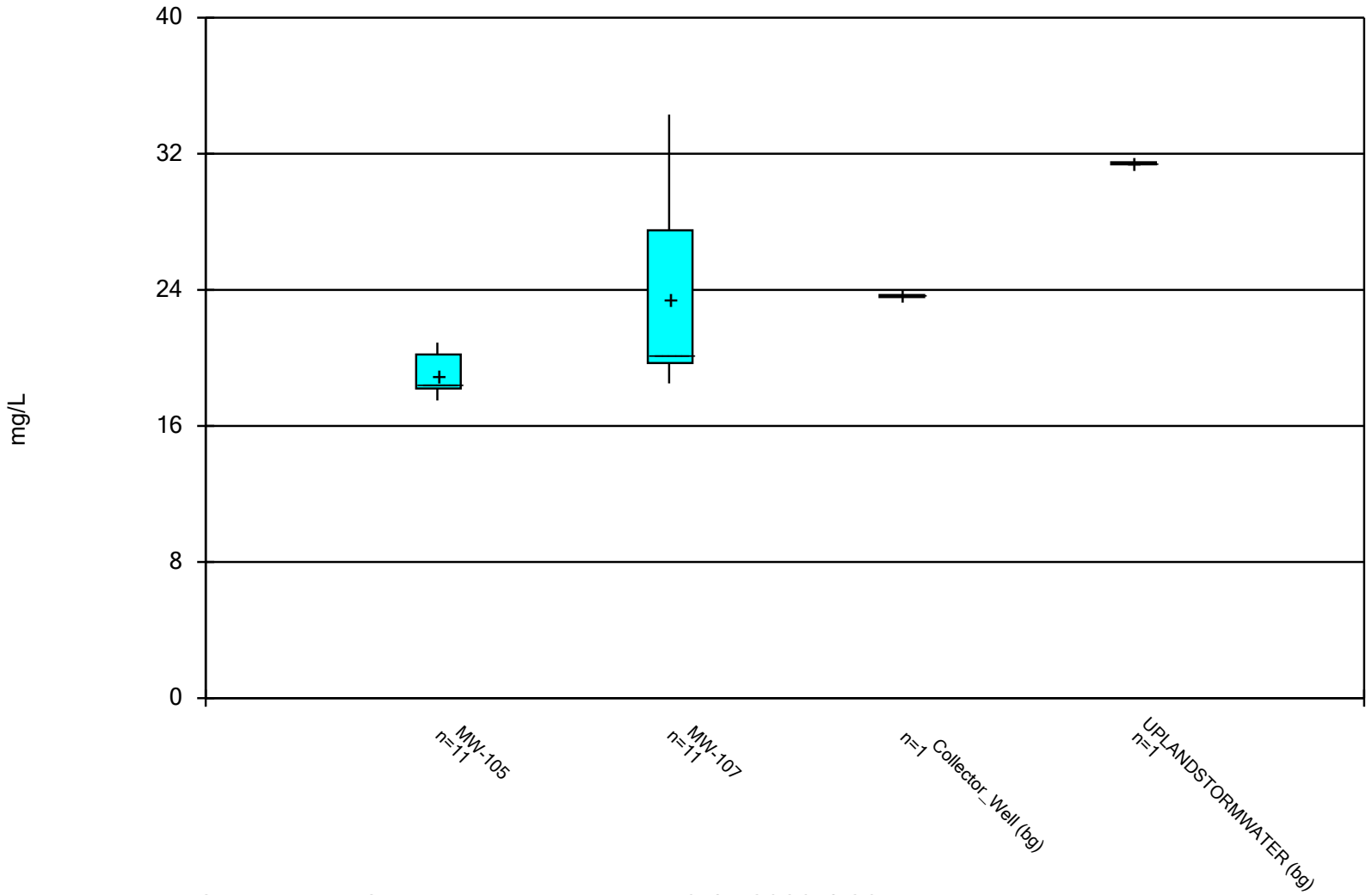
This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of Evergy Metro, Inc. for specific application to the 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: Chloride Analysis Run 3/17/2020 4:26 PM View: Ash Impound III

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

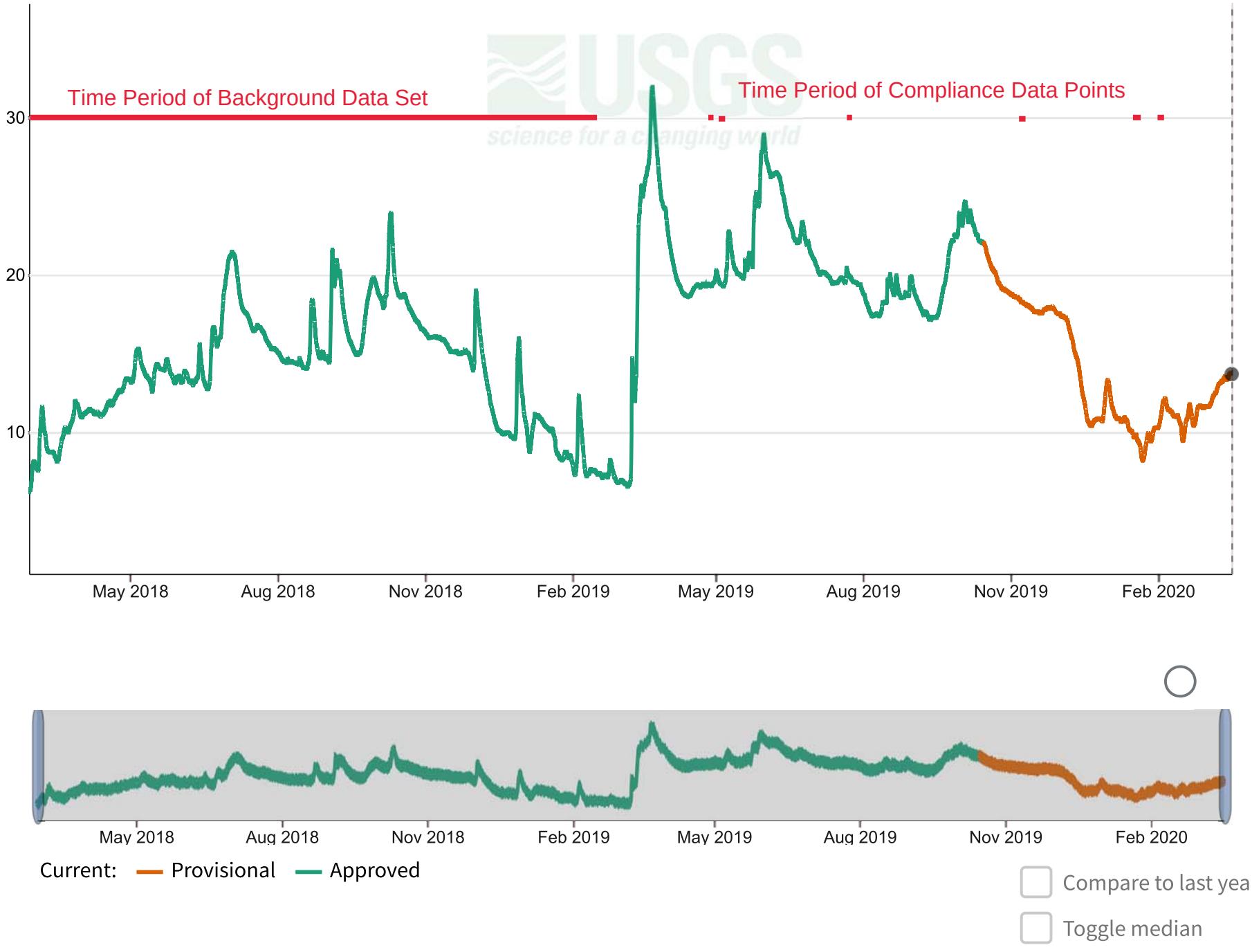
Box & Whiskers Plot

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr Printed 3/17/2020, 4:28 PM

Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Chloride (mg/L)	MW-105	11	18.9	1.107	0.3338	18.5	17.5	20.9	0
Chloride (mg/L)	MW-107	11	23.39	5.482	1.653	20.2	18.5	34.3	0
Chloride (mg/L)	Collector...	1	23.7	0	0	23.7	23.7	23.7	0
Chloride (mg/L)	UPLANDSTO...	1	31.5	0	0	31.5	31.5	31.5	0

Appendix B

Missouri River Stage Hydrograph

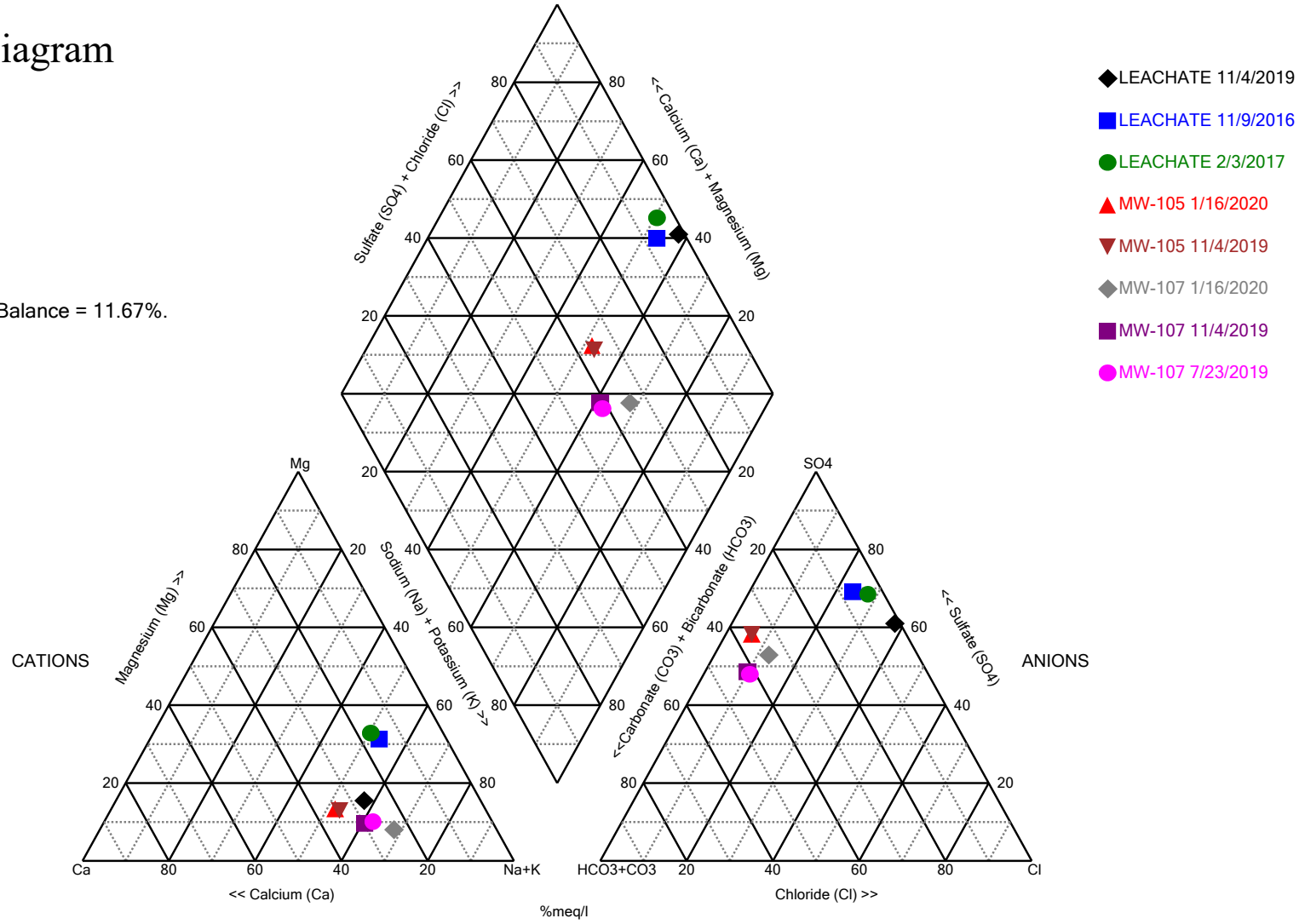

Time Period of Background Data Set
Time Period of Compliance Data Points
30
20
10
May 2018
Aug 2018
Nov 2018
Feb 2019
May 2019
Aug 2019
Nov 2019
Feb 2020
Current: Provisional Approved
Compare to last year
Toggle median

Appendix C

Piper Diagram Plots and Analytical Results

Piper Diagram

Cation-Anion Balance = 11.67%.



Analysis Run 3/17/2020 4:34 PM View: Ash Impound III

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

Piper Diagram

Analysis Run 3/17/2020 4:36 PM View: Ash Impound III

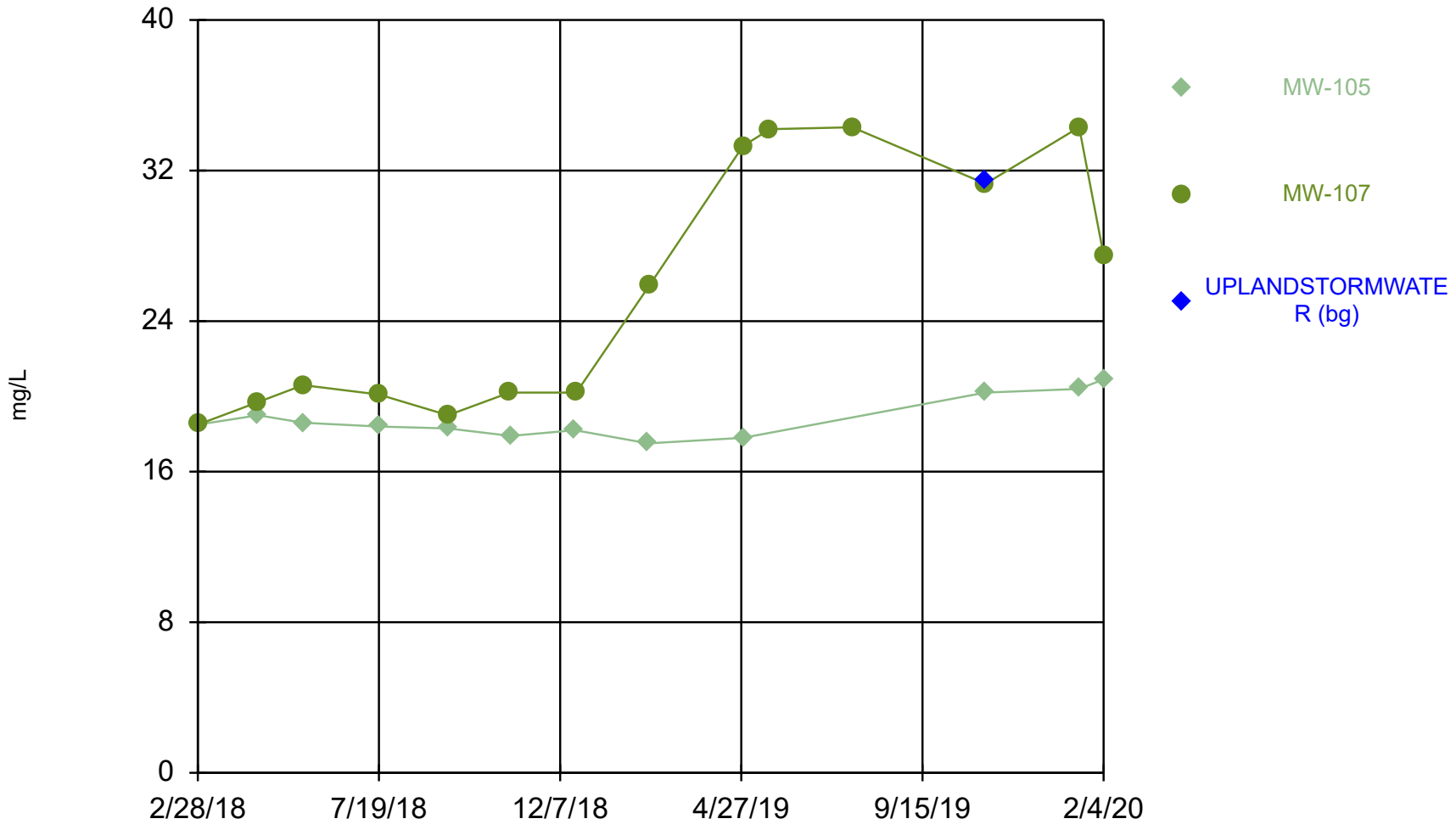
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Totals (ppm)	Na	K	Ca	Mg	Cl	SO4	HCO3	CO3
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
MW-105 11/4/2019	134	4.71	76.4	16.9	20.2	299	218	10
MW-105 1/16/2020	130	4.53	77.9	18.1	20.4	308	226	10
MW-107 7/23/2019	139	7.31	54.8	12	34.3	220	227	10
MW-107 11/4/2019	131	7.13	57.5	10.9	31.3	221	223	10
MW-107 1/16/2020	122	5.81	38.3	7.69	34.3	206	154	10

Appendix D

Time Series Plots

Time Series



Constituent: Chloride Analysis Run 3/18/2020 3:05 PM View: Ash Impound III

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

Time Series

Constituent: Chloride (mg/L) Analysis Run 3/18/2020 3:06 PM View: Ash Impound III

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

	MW-105	MW-107	UPLANDSTORMWA...
2/28/2018	18.5	18.5	
4/16/2018	19	19.7	
5/21/2018	18.6	20.6	
7/19/2018	18.4	20.1	
9/11/2018	18.3	19	
10/29/2018		20.2	
10/30/2018	17.9		
12/19/2018	18.2		
12/20/2018		20.2	
2/14/2019	17.5		
2/15/2019		25.9	
4/29/2019	17.8	33.3	
5/20/2019		34.2	
7/23/2019		34.3	
11/4/2019	20.2	31.3	31.5
1/16/2020	20.4	34.3	
2/4/2020	20.9	27.5	

ADDENDUM 1

2019-2020 Annual Groundwater Monitoring and Corrective Action Addendum 1

December 16, 2022
File No. 27213167.20

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

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

Subject: 2019-2020 Annual Groundwater Monitoring and Corrective Action Report Addendum 1
Evergy Metro, Inc.
Ash Impoundment
Iatan Generating Station – Platte County, Missouri

The Ash Impoundment 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 40 257.100. An Annual Groundwater Monitoring and Corrective Action (GWMCA) Report documenting activities completed from July 2019 through June 2020 for the Ash Impoundment was completed and placed in the facility's operating record on July 29, 2020, as required by the Rule. The Annual GWMCA report was to fulfill the requirements specified in 40 CFR 257.90(e).

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

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

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

The attachments to this addendum are as follows:

- Attachment 1 – Laboratory Analytical Reports:

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

  - July 2019 – Second verification sampling for Spring 2019 detection monitoring sampling event.
  - November 2019 – Fall 2019 semiannual detection monitoring sampling event.
  - January 2020 – First verification sampling for the Fall 2019 detection monitoring sampling event.
  - February 2020 – Second verification sampling for the Fall 2019 detection monitoring sampling event.
  - May 2020 – Spring 2020 semiannual detection monitoring sampling event and Appendix IV.

- 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 July 2019 through June 2020 included the following:

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

- Attachment 3 - Groundwater Potentiometric Surface Maps:

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

  - November 2019 - Fall 2019 semiannual detection monitoring sampling event.
  - May 2020 – Spring 2020 semiannual detection monitoring sampling event.

Jared Morrison
December 16, 2022

ATTACHMENT 1

Laboratory Analytical Reports

Jared Morrison
December 16, 2022

ATTACHMENT 1-1

July 2019 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

July 31, 2019

SCS Engineers - KS

Sample Delivery Group:	L1121785
Samples Received:	07/24/2019
Project Number:	27213167.18
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

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

MW-107 L1121785-01 5

DUPLICATE L1121785-03 6

Qc: Quality Control Summary 7

Wet Chemistry by Method 9056A 7

Metals (ICP) by Method 6010B 9

Gl: Glossary of Terms 10

Al: Accreditations & Locations 11

Sc: Sample Chain of Custody 12

MW-107 L1121785-01 GW

Collected by: Whit Martin
Collected date/time: 07/23/19 14:20
Received date/time: 07/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1317997	1	07/26/19 16:43	07/26/19 16:43	LDC	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1319579	1	07/30/19 17:26	07/31/19 07:05	TRB	Mt. Juliet, TN

DUPLICATE L1121785-03 GW

Collected by: Whit Martin
Collected date/time: 07/23/19 14:20
Received date/time: 07/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1317997	1	07/26/19 17:38	07/26/19 17:38	LDC	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1319579	1	07/30/19 17:26	07/31/19 07:40	TRB	Mt. Juliet, TN

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

Jeff Carr
Project Manager

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	34300		1000	1	07/26/2019 16:43	WG1317997

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	54800	V	1000	1	07/31/2019 07:05	WG1319579

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	34600		1000	1	07/26/2019 17:38	WG1317997

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	54400		1000	1	07/31/2019 07:40	WG1319579

Method Blank (MB)

(MB) R3434901-1 07/26/19 10:55

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	273	J	51.9	1000

L1121816-25 Original Sample (OS) • Duplicate (DUP)

(OS) L1121816-25 07/26/19 18:32 • (DUP) R3434901-5 07/26/19 18:43

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	31400	31800	1	1.45		15

L1121816-34 Original Sample (OS) • Duplicate (DUP)

(OS) L1121816-34 07/27/19 11:02 • (DUP) R3434901-8 07/27/19 11:13

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	125000	125000	5	0.215		15

L1121816-34 Original Sample (OS) • Duplicate (DUP)

(OS) L1121816-34 07/26/19 20:42 • (DUP) R3434901-6 07/26/19 20:53

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	128000	127000	1	0.599	E	15

Laboratory Control Sample (LCS)

(LCS) R3434901-2 07/26/19 11:06

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39500	98.7	80.0-120	

L1121785-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1121785-01 07/26/19 16:43 • (MS) R3434901-3 07/26/19 16:54 • (MSD) R3434901-4 07/26/19 17:05

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	34300	83000	83000	97.5	97.5	1	80.0-120			0.0253	15

L1121816-34 Original Sample (OS) • Matrix Spike (MS)

(OS) L1121816-34 07/26/19 20:42 • (MS) R3434901-7 07/26/19 21:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	128000	173000	91.2	1	80.0-120	E

Method Blank (MB)

(MB) R3435978-1 07/31/19 06:58

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

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

(LCS) R3435978-2 07/31/19 07:00 • (LCSD) R3435978-3 07/31/19 07:02

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Calcium	10000	9840	9720	98.4	97.2	80.0-120			1.20	20

L1121785-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1121785-01 07/31/19 07:05 • (MS) R3435978-5 07/31/19 07:10 • (MSD) R3435978-6 07/31/19 07:12

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	54800	69400	69100	146	143	1	75.0-125	V	V	0.402	20

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

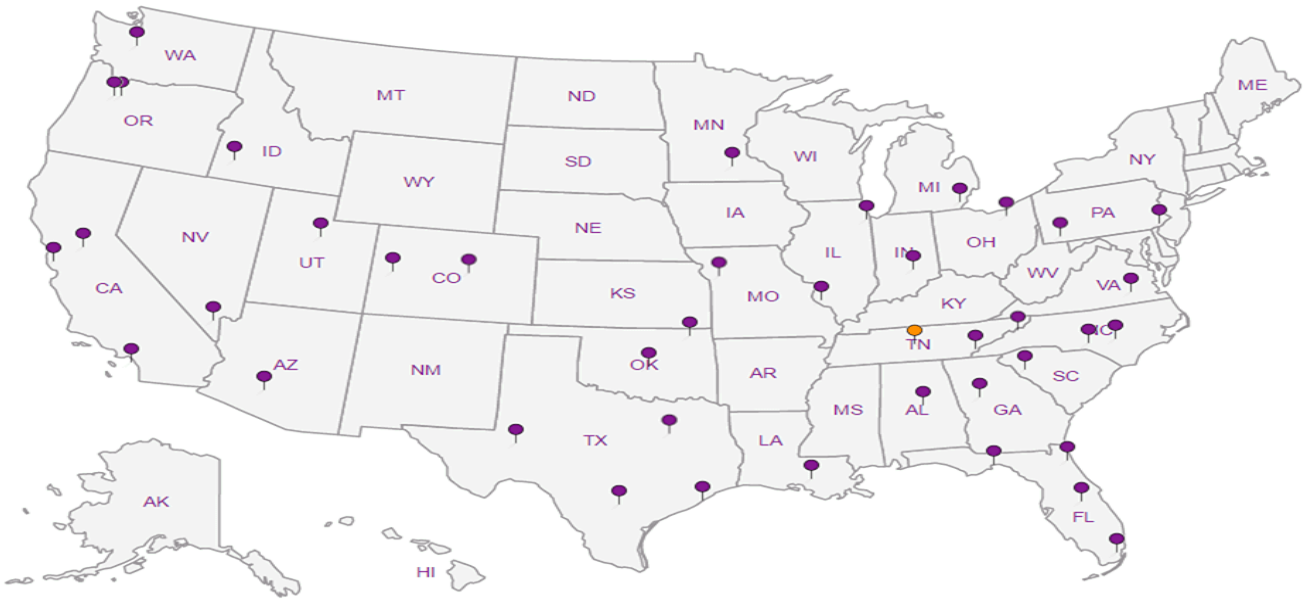
Third Party Federal Accreditations

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

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

Our Locations

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



SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

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

Pres Chk

Report to: **Jason Franks**

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

Project Description: **KCP&L Iatan Generating Station**

City/State Collected:

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

Client Project # **27213167.18**

Lab Project # **AQUAOPKS-IATAN**

Collected by (print): Whit Martin

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed: Std

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Ca - 6010 250mlHDPE-HNO3	Chloride - 9056 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-107	Grab	GW		7/23/19	1420	2	X	X		-1
MW-107 MS/MSD	Grab	GW		7/23/19	1420	2	X	X		-2
DUPLICATE	Grab	GW		7/23/19	1420	2	X	X		

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

National Center for Testing & Innovation

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

L# 1121785

A126

Acctnum: **AQUAOPKS**
Template: **T129786**
Prelogin: **P719258**
TSR: **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 # 4794 8839 2356

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N

RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Whit Martin	7/23/19	1605		No
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
	7/23/19	1800	FedEx	2.8+0.2=3.0°C 6
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
			Hailey Melson	7/24/19 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Jared Morrison
December 16, 2022

ATTACHMENT 1-2

November 2019 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

November 12, 2019

SCS Engineers - KS

Sample Delivery Group:	L1157680
Samples Received:	11/06/2019
Project Number:	27213167.15
Description:	KCPL - Iatan Gen. Station

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

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

MW-101 L1157680-01 6

MW-102 L1157680-02 7

MW-103 L1157680-03 8

MW-104 L1157680-04 9

MW-105 L1157680-05 10

MW-107 L1157680-06 11

MW-108 L1157680-07 12

MW-109 L1157680-08 13

MW-110 L1157680-09 14

MW-111 L1157680-10 15

DUPLICATE L1157680-11 16

Qc: Quality Control Summary 17

Gravimetric Analysis by Method 2540 C-2011 17

Wet Chemistry by Method 9056A 19

Metals (ICP) by Method 6010B 23

Gl: Glossary of Terms 24

Al: Accreditations & Locations 25

Sc: Sample Chain of Custody 26

MW-101 L1157680-01 GW

Collected by | Collected date/time: 11/04/19 16:15 | Received date/time: 11/06/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1376129	1	11/10/19 07:05	11/10/19 09:09	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1375990	1	11/07/19 06:05	11/07/19 06:05	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1376677	1	11/10/19 13:56	11/11/19 18:07	EL	Mt. Juliet, TN

MW-102 L1157680-02 GW

Collected by | Collected date/time: 11/04/19 16:05 | Received date/time: 11/06/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1376129	1	11/10/19 07:05	11/10/19 09:09	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	1	11/09/19 10:22	11/09/19 10:22	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1376677	1	11/10/19 13:56	11/11/19 18:10	EL	Mt. Juliet, TN

MW-103 L1157680-03 GW

Collected by | Collected date/time: 11/04/19 15:25 | Received date/time: 11/06/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1376129	1	11/10/19 07:05	11/10/19 09:09	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	1	11/09/19 10:54	11/09/19 10:54	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1376677	1	11/10/19 13:56	11/11/19 18:13	EL	Mt. Juliet, TN

MW-104 L1157680-04 GW

Collected by | Collected date/time: 11/04/19 15:30 | Received date/time: 11/06/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1376129	1	11/10/19 07:05	11/10/19 09:09	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	1	11/09/19 11:12	11/09/19 11:12	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	5	11/09/19 11:27	11/09/19 11:27	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1376677	1	11/10/19 13:56	11/11/19 18:15	EL	Mt. Juliet, TN

MW-105 L1157680-05 GW

Collected by | Collected date/time: 11/04/19 14:40 | Received date/time: 11/06/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1376129	1	11/10/19 07:05	11/10/19 09:09	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	1	11/09/19 11:43	11/09/19 11:43	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	5	11/09/19 11:59	11/09/19 11:59	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1376677	1	11/10/19 13:56	11/11/19 18:18	EL	Mt. Juliet, TN

MW-107 L1157680-06 GW

Collected by | Collected date/time: 11/04/19 16:20 | Received date/time: 11/06/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1376129	1	11/10/19 07:05	11/10/19 09:09	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	1	11/09/19 12:15	11/09/19 12:15	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	5	11/09/19 20:44	11/09/19 20:44	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1376677	1	11/10/19 13:56	11/11/19 18:26	EL	Mt. Juliet, TN

MW-108 L1157680-07 GW

Collected by | Collected date/time 11/04/19 17:15 | Received date/time 11/06/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1376129	1	11/10/19 07:05	11/10/19 09:09	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	1	11/09/19 13:18	11/09/19 13:18	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	5	11/09/19 21:16	11/09/19 21:16	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1376677	1	11/10/19 13:56	11/11/19 18:29	EL	Mt. Juliet, TN

MW-109 L1157680-08 GW

Collected by | Collected date/time 11/04/19 17:15 | Received date/time 11/06/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1376129	1	11/10/19 07:05	11/10/19 09:09	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	1	11/09/19 13:34	11/09/19 13:34	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	5	11/09/19 21:32	11/09/19 21:32	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1376677	1	11/10/19 13:56	11/11/19 18:31	EL	Mt. Juliet, TN

MW-110 L1157680-09 GW

Collected by | Collected date/time 11/04/19 14:50 | Received date/time 11/06/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1376129	1	11/10/19 07:05	11/10/19 09:09	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	1	11/09/19 13:50	11/09/19 13:50	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	5	11/09/19 14:38	11/09/19 14:38	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1376677	1	11/10/19 13:56	11/11/19 17:31	EL	Mt. Juliet, TN

MW-111 L1157680-10 GW

Collected by | Collected date/time 11/04/19 15:40 | Received date/time 11/06/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1376129	1	11/10/19 07:05	11/10/19 09:09	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	1	11/09/19 14:54	11/09/19 14:54	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1376677	1	11/10/19 13:56	11/11/19 18:34	EL	Mt. Juliet, TN

DUPLICATE L1157680-11 GW

Collected by | Collected date/time 11/04/19 14:55 | Received date/time 11/06/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1376130	1	11/07/19 12:23	11/07/19 13:46	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	1	11/09/19 15:26	11/09/19 15:26	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1376613	5	11/09/19 21:48	11/09/19 21:48	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1376677	1	11/10/19 13:56	11/11/19 18:37	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	504000		10000	1	11/10/2019 09:09	WG1376129

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	7630		1000	1	11/07/2019 06:05	WG1375990
Fluoride	551		100	1	11/07/2019 06:05	WG1375990
Sulfate	ND		5000	1	11/07/2019 06:05	WG1375990

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/11/2019 18:07	WG1376677
Calcium	130000		1000	1	11/11/2019 18:07	WG1376677

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	446000		10000	1	11/10/2019 09:09	WG1376129

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	5060		1000	1	11/09/2019 10:22	WG1376613
Fluoride	254		100	1	11/09/2019 10:22	WG1376613
Sulfate	ND		5000	1	11/09/2019 10:22	WG1376613

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/11/2019 18:10	WG1376677
Calcium	126000		1000	1	11/11/2019 18:10	WG1376677

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	455000		10000	1	11/10/2019 09:09	WG1376129

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	4550		1000	1	11/09/2019 10:54	WG1376613
Fluoride	238		100	1	11/09/2019 10:54	WG1376613
Sulfate	ND		5000	1	11/09/2019 10:54	WG1376613

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/11/2019 18:13	WG1376677
Calcium	130000		1000	1	11/11/2019 18:13	WG1376677

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	418000		10000	1	11/10/2019 09:09	WG1376129

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	24200		1000	1	11/09/2019 11:12	WG1376613
Fluoride	518		100	1	11/09/2019 11:12	WG1376613
Sulfate	130000		25000	5	11/09/2019 11:27	WG1376613

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1190		200	1	11/11/2019 18:15	WG1376677
Calcium	56500		1000	1	11/11/2019 18:15	WG1376677

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	688000		10000	1	11/10/2019 09:09	WG1376129

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	20200		1000	1	11/09/2019 11:43	WG1376613
Fluoride	799		100	1	11/09/2019 11:43	WG1376613
Sulfate	299000		25000	5	11/09/2019 11:59	WG1376613

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1770		200	1	11/11/2019 18:18	WG1376677
Calcium	76400		1000	1	11/11/2019 18:18	WG1376677

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	577000		10000	1	11/10/2019 09:09	WG1376129

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	31300		1000	1	11/09/2019 12:15	WG1376613
Fluoride	683		100	1	11/09/2019 12:15	WG1376613
Sulfate	221000		25000	5	11/09/2019 20:44	WG1376613

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	2100		200	1	11/11/2019 18:26	WG1376677
Calcium	57500		1000	1	11/11/2019 18:26	WG1376677

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	760000	J3	13300	1	11/10/2019 09:09	WG1376129

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	18400		1000	1	11/09/2019 13:18	WG1376613
Fluoride	492		100	1	11/09/2019 13:18	WG1376613
Sulfate	308000		25000	5	11/09/2019 21:16	WG1376613

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1350		200	1	11/11/2019 18:29	WG1376677
Calcium	129000		1000	1	11/11/2019 18:29	WG1376677

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	712000		13300	1	11/10/2019 09:09	WG1376129

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	20400		1000	1	11/09/2019 13:34	WG1376613
Fluoride	477		100	1	11/09/2019 13:34	WG1376613
Sulfate	253000		25000	5	11/09/2019 21:32	WG1376613

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	709		200	1	11/11/2019 18:31	WG1376677
Calcium	123000		1000	1	11/11/2019 18:31	WG1376677

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	717000		13300	1	11/10/2019 09:09	WG1376129

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	20200		1000	1	11/09/2019 13:50	WG1376613
Fluoride	471		100	1	11/09/2019 13:50	WG1376613
Sulfate	347000		25000	5	11/09/2019 14:38	WG1376613

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	2540		200	1	11/11/2019 17:31	WG1376677
Calcium	61400		1000	1	11/11/2019 17:31	WG1376677

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	526000		10000	1	11/10/2019 09:09	WG1376129

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	7850		1000	1	11/09/2019 14:54	WG1376613
Fluoride	492		100	1	11/09/2019 14:54	WG1376613
Sulfate	22800		5000	1	11/09/2019 14:54	WG1376613

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	786		200	1	11/11/2019 18:34	WG1376677
Calcium	98800		1000	1	11/11/2019 18:34	WG1376677

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	763000		13300	1	11/07/2019 13:46	WG1376130

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	20100		1000	1	11/09/2019 15:26	WG1376613
Fluoride	469		100	1	11/09/2019 15:26	WG1376613
Sulfate	347000		25000	5	11/09/2019 21:48	WG1376613

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	2550		200	1	11/11/2019 18:37	WG1376677
Calcium	61400		1000	1	11/11/2019 18:37	WG1376677

Method Blank (MB)

(MB) R3470499-1 11/10/19 09:09

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

L1157680-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1157680-07 11/10/19 09:09 • (DUP) R3470499-3 11/10/19 09:09

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	760000	816000	1	7.11	J3	5

Laboratory Control Sample (LCS)

(LCS) R3470499-2 11/10/19 09:09

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8310000	94.4	85.0-115	

Method Blank (MB)

(MB) R3469996-1 11/07/19 13:46

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

L1157688-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1157688-03 11/07/19 13:46 • (DUP) R3469996-3 11/07/19 13:46

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1030000	1120000	1	8.36	J3	5

Laboratory Control Sample (LCS)

(LCS) R3469996-2 11/07/19 13:46

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8500000	96.6	85.0-115	

Method Blank (MB)

(MB) R3469401-1 11/06/19 21:05

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	125	J	51.9	1000
Fluoride	U		9.90	100
Sulfate	209	J	77.4	5000

L1157549-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1157549-02 11/06/19 23:46 • (DUP) R3469401-3 11/06/19 23:59

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	19700	19800	1	0.394		15
Fluoride	77.2	81.6	1	5.54	J	15
Sulfate	18400	18400	1	0.110		15

L1157657-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1157657-05 11/07/19 05:00 • (DUP) R3469401-8 11/07/19 05:13

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	3990	4000	1	0.310		15
Fluoride	431	436	1	1.20		15
Sulfate	37600	38200	1	1.67		15

Laboratory Control Sample (LCS)

(LCS) R3469401-2 11/06/19 21:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39200	98.0	80.0-120	
Fluoride	8000	7920	99.0	80.0-120	
Sulfate	40000	39400	98.4	80.0-120	

L1157549-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1157549-02 11/06/19 23:46 • (MS) R3469401-4 11/07/19 00:12 • (MSD) R3469401-5 11/07/19 00:51

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	19700	69600	71600	99.7	104	1	80.0-120			2.79	15
Fluoride	5000	77.2	5150	5330	102	105	1	80.0-120			3.40	15
Sulfate	50000	18400	67800	70500	98.6	104	1	80.0-120			3.96	15

L1157657-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1157657-04 11/07/19 04:20 • (MS) R3469401-6 11/07/19 04:33 • (MSD) R3469401-7 11/07/19 04:46

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	29100	74900	77100	91.4	95.9	1	80.0-120			2.96	15
Fluoride	5000	381	5040	5320	93.1	98.9	1	80.0-120			5.59	15
Sulfate	50000	166000	184000	204000	36.6	77.2	1	80.0-120	E J6	E J6	10.5	15

Method Blank (MB)

(MB) R3470353-1 11/09/19 09:20

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	402	J	51.9	1000
Fluoride	U		9.90	100
Sulfate	423	J	77.4	5000

L1157680-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1157680-06 11/09/19 12:15 • (DUP) R3470353-3 11/09/19 13:02

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	31300	31100	1	0.597		15
Fluoride	683	684	1	0.219		15

L1157740-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157740-01 11/09/19 17:33 • (DUP) R3470353-6 11/09/19 17:49

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	59300	59000	1	0.400		15
Fluoride	513	515	1	0.350		15
Sulfate	3750	3740	1	0.433	J	15

L1157680-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1157680-06 11/09/19 20:44 • (DUP) R3470353-8 11/09/19 21:00

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	221000	219000	5	0.517		15

Laboratory Control Sample (LCS)

(LCS) R3470353-2 11/09/19 09:36

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	38400	96.0	80.0-120	
Fluoride	8000	7970	99.6	80.0-120	
Sulfate	40000	38700	96.7	80.0-120	

L1157680-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1157680-09 11/09/19 13:50 • (MS) R3470353-4 11/09/19 14:06 • (MSD) R3470353-5 11/09/19 14:22

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 %
Chloride	50000	20200	69300	69500	98.2	98.6	1	80.0-120			0.243	15
Fluoride	5000	471	5400	5520	98.7	101	1	80.0-120			2.04	15
Sulfate	50000	357000	388000	390000	63.3	65.4	1	80.0-120	E V	E V	0.272	15

L1157838-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1157838-02 11/09/19 19:24 • (MS) R3470353-7 11/09/19 19:40

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	77000	124000	94.2	1	80.0-120	E
Fluoride	5000	321	5190	97.3	1	80.0-120	
Sulfate	50000	210000	253000	84.7	1	80.0-120	E

Method Blank (MB)

(MB) R3470812-1 11/11/19 17:23

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

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

(LCS) R3470812-2 11/11/19 17:25 • (LCSD) R3470812-3 11/11/19 17:28

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Boron	1000	907	906	90.7	90.6	80.0-120			0.0138	20
Calcium	10000	9520	9480	95.2	94.8	80.0-120			0.373	20

L1157680-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1157680-09 11/11/19 17:31 • (MS) R3470812-5 11/11/19 17:36 • (MSD) R3470812-6 11/11/19 17:38

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	2540	3410	3430	87.1	89.2	1	75.0-125			0.627	20
Calcium	10000	61400	70700	70600	93.5	92.1	1	75.0-125			0.195	20

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

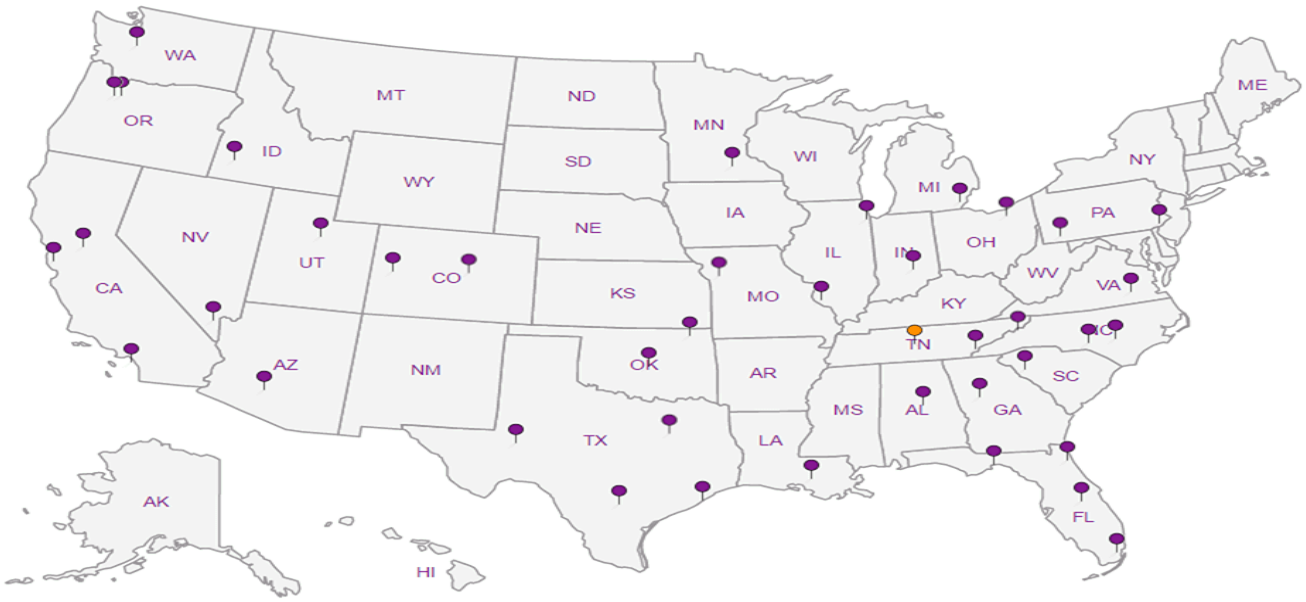
Third Party Federal Accreditations

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

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

Our Locations

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



Chain of Custody Page 1 of 2

National Center for Testing & Innovation

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

SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

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

Pres Chk

Report to: Jason Franks

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

Project Description: KCPL - Iatan Gen. Station

City/State Collected: WESTON MO

Please Circle: PT MT CT ET

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

Client Project # 27213167.15

Lab Project # AQUAOPKS-IATAN

Collected by (print): JASON R. FRANKS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

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

Quote #

Date Results Needed 11/12/19

SDG # 1157680

Table # B110

Acctnum: AQUAOPKS

Template: T128513

Prelogin: P736885

PM: 206 - Jeff Carr

PB:

Shipped Via:

Analysis / Container / Preservative

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-101	GRAB	GW	-	11/4/19	1615	3	X	X	X		-01
MW-102		GW	-		1605	3	X	X	X		-02
MW-103		GW	-		1525	3	X	X	X		-03
MW-104		GW	-		1530	3	X	X	X		-04
MW-105		GW	-		1440	3	X	X	X		-05
MW-107		GW	-		1620	3	X	X	X		-06
MW-108		GW	-		1715	3	X	X	X		-07
MW-109		GW	-		1715	3	X	X	X		-08
MW-110		GW	-		1450	3	X	X	X		-09
MW-111		GW	-		1540	3	X	X	X		-10

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

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

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # SW

Relinquished by: (Signature) — Date: 11/5/19 Time: 1245 — Received by: (Signature) — 11-5-19 1245

Relinquished by: (Signature) — Date: 11/5/19 Time: 1800 — Received by: (Signature)

Relinquished by: (Signature) — Date: Time: — Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: 3.1 °C 3.1 °C Bottles Received: 36

Date: 11/6 Time: 0800

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Chain of Custody Page 2 of 2

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@kcpl.com;

Project Description: KCPL - Iatan Gen. Station
City/State Collected: WESTON, MO
Please Circle: PT MT CT ET

Phone: 913-681-0030
Fax: 913-681-0012
Client Project # 27213167.15
Lab Project # AQUAOPKS-IATAN

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

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓
Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day
Quote #
Date Results Needed 11/12/19

National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # 115766G
Table #
Acctnum: AQUAOPKS
Template: T128513
Prelogin: P736885
PM: 206 - Jeff Carr
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions - Cld, F, SO4 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres									Remarks	Sample # (lab only)
DUPLICATE #2	GRAB	GW	—	11/4/19	1455	3	X	X	X										-11
MS/MSD	↓	GW	—	↓	1500	3 PM	X	X	X	RM									-12

Analysis / Container / Preservative

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

Remarks:

pH ____ Temp ____
Flow ____ Other ____

Samples returned via: ___ UPS ___ FedEx ___ Courier ____
Tracking #

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

	Date:	Time:	
Relinquished by: (Signature)	11/5/19	1245	Received by: (Signature) 11-5-19 1245
Relinquished by: (Signature)	11/5/19	1800	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: 3.7 +3.1=6.8 °C Bottles Received: 36
Date: 11/6 Time: 0800
If preservation required by Login: Date/Time
Hold:
Condition: NCF / OK

Jared Morrison
December 16, 2022

ATTACHMENT 1-3

January 2020 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 24, 2020

SCS Engineers - KS

Sample Delivery Group:	L1180951
Samples Received:	01/18/2020
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

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

- MW-1 L1180951-01 6
- MW-2 L1180951-02 7
- MW-9 L1180951-03 8
- MW-10 L1180951-04 9
- MW-101 L1180951-05 10
- MW-104 L1180951-06 11
- MW-105 L1180951-07 12
- MW-107 L1180951-08 13

Qc: Quality Control Summary 14

- Wet Chemistry by Method 2320 B-2011 14
- Wet Chemistry by Method 9056A 15
- Metals (ICP) by Method 6010B 17

Gl: Glossary of Terms 18

Al: Accreditations & Locations 19

Sc: Sample Chain of Custody 20

MW-1 L1180951-01 GW

Collected by: Jason R Franks | Collected date/time: 01/15/20 14:05 | Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1414276	1	01/21/20 14:49	01/21/20 14:49	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	1	01/22/20 22:33	01/22/20 22:33	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1414408	1	01/22/20 09:57	01/23/20 15:28	EL	Mt. Juliet, TN

MW-2 L1180951-02 GW

Collected by: Jason R Franks | Collected date/time: 01/15/20 13:30 | Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1414276	1	01/21/20 14:58	01/21/20 14:58	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	1	01/22/20 23:26	01/22/20 23:26	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	5	01/23/20 05:41	01/23/20 05:41	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1414408	1	01/22/20 09:57	01/23/20 15:31	EL	Mt. Juliet, TN

MW-9 L1180951-03 GW

Collected by: Jason R Franks | Collected date/time: 01/15/20 14:50 | Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1414276	1	01/21/20 15:16	01/21/20 15:16	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	1	01/22/20 23:39	01/22/20 23:39	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1414408	1	01/22/20 09:57	01/23/20 15:34	EL	Mt. Juliet, TN

MW-10 L1180951-04 GW

Collected by: Jason R Franks | Collected date/time: 01/15/20 12:50 | Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1414276	1	01/21/20 15:24	01/21/20 15:24	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	1	01/22/20 23:52	01/22/20 23:52	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1414408	1	01/22/20 09:57	01/23/20 15:36	EL	Mt. Juliet, TN

MW-101 L1180951-05 GW

Collected by: Jason R Franks | Collected date/time: 01/16/20 11:00 | Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1414276	1	01/21/20 15:32	01/21/20 15:32	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	1	01/23/20 00:05	01/23/20 00:05	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1414408	1	01/22/20 09:57	01/23/20 15:44	EL	Mt. Juliet, TN

MW-104 L1180951-06 GW

Collected by: Jason R Franks | Collected date/time: 01/16/20 11:50 | Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1414276	1	01/21/20 15:49	01/21/20 15:49	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	5	01/23/20 05:54	01/23/20 05:54	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1414408	1	01/22/20 09:57	01/23/20 15:47	EL	Mt. Juliet, TN

MW-105 L1180951-07 GW

Collected by: Jason R Franks
Collected date/time: 01/16/20 12:50
Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1414276	1	01/21/20 15:57	01/21/20 15:57	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	5	01/23/20 06:08	01/23/20 06:08	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1414408	1	01/22/20 09:57	01/23/20 15:50	EL	Mt. Juliet, TN

MW-107 L1180951-08 GW

Collected by: Jason R Franks
Collected date/time: 01/16/20 13:45
Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1414276	1	01/21/20 16:05	01/21/20 16:05	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	5	01/23/20 06:21	01/23/20 06:21	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1414408	1	01/22/20 09:57	01/23/20 15:52	EL	Mt. Juliet, TN

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

Jeff Carr
Project Manager

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity,Bicarbonate	406000		20000	1	01/21/2020 14:49	WG1414276
Alkalinity,Carbonate	ND		20000	1	01/21/2020 14:49	WG1414276

Sample Narrative:

L1180951-01 WG1414276: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	5320		1000	1	01/22/2020 22:33	WG1415117
Sulfate	27300		5000	1	01/22/2020 22:33	WG1415117

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	129000		1000	1	01/23/2020 15:28	WG1414408
Magnesium	26700		1000	1	01/23/2020 15:28	WG1414408
Potassium	6170		1000	1	01/23/2020 15:28	WG1414408
Sodium	11600		1000	1	01/23/2020 15:28	WG1414408

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	427000		20000	1	01/21/2020 14:58	WG1414276
Alkalinity,Carbonate	ND		20000	1	01/21/2020 14:58	WG1414276

Sample Narrative:

L1180951-02 WG1414276: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	6840		1000	1	01/22/2020 23:26	WG1415117
Sulfate	125000		25000	5	01/23/2020 05:41	WG1415117

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	165000		1000	1	01/23/2020 15:31	WG1414408
Magnesium	33800		1000	1	01/23/2020 15:31	WG1414408
Potassium	5710		1000	1	01/23/2020 15:31	WG1414408
Sodium	12400		1000	1	01/23/2020 15:31	WG1414408

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	350000		20000	1	01/21/2020 15:16	WG1414276
Alkalinity,Carbonate	ND		20000	1	01/21/2020 15:16	WG1414276

Sample Narrative:

L1180951-03 WG1414276: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	23400		5000	1	01/22/2020 23:39	WG1415117

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	104000		1000	1	01/23/2020 15:34	WG1414408
Magnesium	28400		1000	1	01/23/2020 15:34	WG1414408
Potassium	4940		1000	1	01/23/2020 15:34	WG1414408
Sodium	6440		1000	1	01/23/2020 15:34	WG1414408

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	496000		20000	1	01/21/2020 15:24	WG1414276
Alkalinity,Carbonate	ND		20000	1	01/21/2020 15:24	WG1414276

Sample Narrative:

L1180951-04 WG1414276: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	18100		1000	1	01/22/2020 23:52	WG1415117
Sulfate	28500		5000	1	01/22/2020 23:52	WG1415117

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	134000		1000	1	01/23/2020 15:36	WG1414408
Magnesium	52800		1000	1	01/23/2020 15:36	WG1414408
Potassium	4390		1000	1	01/23/2020 15:36	WG1414408
Sodium	7650		1000	1	01/23/2020 15:36	WG1414408

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	513000		20000	1	01/21/2020 15:32	WG1414276
Alkalinity,Carbonate	ND		20000	1	01/21/2020 15:32	WG1414276

Sample Narrative:

L1180951-05 WG1414276: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	ND		5000	1	01/23/2020 00:05	WG1415117

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	131000		1000	1	01/23/2020 15:44	WG1414408
Magnesium	33900		1000	1	01/23/2020 15:44	WG1414408
Potassium	5540		1000	1	01/23/2020 15:44	WG1414408
Sodium	36600		1000	1	01/23/2020 15:44	WG1414408

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	178000		20000	1	01/21/2020 15:49	WG1414276
Alkalinity,Carbonate	ND		20000	1	01/21/2020 15:49	WG1414276

Sample Narrative:

L1180951-06 WG1414276: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	23500		5000	5	01/23/2020 05:54	WG1415117
Sulfate	145000		25000	5	01/23/2020 05:54	WG1415117

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Magnesium	11600		1000	1	01/23/2020 15:47	WG1414408
Potassium	3680		1000	1	01/23/2020 15:47	WG1414408
Sodium	78000		1000	1	01/23/2020 15:47	WG1414408

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity,Bicarbonate	226000		20000	1	01/21/2020 15:57	WG1414276
Alkalinity,Carbonate	ND		20000	1	01/21/2020 15:57	WG1414276

Sample Narrative:

L1180951-07 WG1414276: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	308000		25000	5	01/23/2020 06:08	WG1415117

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	77900		1000	1	01/23/2020 15:50	WG1414408
Magnesium	18100		1000	1	01/23/2020 15:50	WG1414408
Potassium	4530		1000	1	01/23/2020 15:50	WG1414408
Sodium	130000		1000	1	01/23/2020 15:50	WG1414408

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	154000		20000	1	01/21/2020 16:05	WG1414276
Alkalinity,Carbonate	ND		20000	1	01/21/2020 16:05	WG1414276

Sample Narrative:

L1180951-08 WG1414276: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	206000		25000	5	01/23/2020 06:21	WG1415117

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	38300		1000	1	01/23/2020 15:52	WG1414408
Magnesium	7690		1000	1	01/23/2020 15:52	WG1414408
Potassium	5810		1000	1	01/23/2020 15:52	WG1414408
Sodium	122000		1000	1	01/23/2020 15:52	WG1414408

Method Blank (MB)

(MB) R3492737-1 01/21/20 13:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity,Bicarbonate	3930	J	2710	20000
Alkalinity,Carbonate	U		2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1180372-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1180372-01 01/21/20 13:52 • (DUP) R3492737-2 01/21/20 14:00

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	108000	108000	1	0.0384		20
Alkalinity,Carbonate	ND	0.000	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

L1180951-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1180951-05 01/21/20 15:32 • (DUP) R3492737-4 01/21/20 15:40

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	513000	514000	1	0.209		20
Alkalinity,Carbonate	ND	0.000	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Method Blank (MB)

(MB) R3493466-1 01/22/20 19:54

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	418	J	51.9	1000
Sulfate	564	J	77.4	5000

L1180951-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1180951-01 01/22/20 22:33 • (DUP) R3493466-3 01/22/20 22:47

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	5320	5210	1	2.19		15
Sulfate	27300	27000	1	1.21		15

L1181246-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1181246-01 01/23/20 04:36 • (DUP) R3493466-6 01/23/20 04:49

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	68300	69900	1	2.38		15
Sulfate	23200	23900	1	3.34		15

Laboratory Control Sample (LCS)

(LCS) R3493466-2 01/22/20 20:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39700	99.3	80.0-120	
Sulfate	40000	40100	100	80.0-120	

L1180951-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1180951-01 01/22/20 22:33 • (MS) R3493466-4 01/22/20 23:00 • (MSD) R3493466-5 01/22/20 23:13

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 %
Chloride	50000	5320	58300	58100	106	105	1	80.0-120			0.346	15
Sulfate	50000	27300	80300	80100	106	106	1	80.0-120			0.244	15

L1181246-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1181246-01 01/23/20 04:36 • (MS) R3493466-7 01/23/20 05:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	68300	116000	96.3	1	80.0-120	E
Sulfate	50000	23200	75400	105	1	80.0-120	

Method Blank (MB)

(MB) R3493571-1 01/23/20 14:39

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		46.3	1000
Magnesium	45.8	J	11.1	1000
Potassium	U		102	1000
Sodium	U		98.5	1000

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

(LCS) R3493571-2 01/23/20 14:41 • (LCSD) R3493571-3 01/23/20 14:44

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Calcium	10000	9550	9860	95.5	98.6	80.0-120			3.16	20
Magnesium	10000	9390	9690	93.9	96.9	80.0-120			3.12	20
Potassium	10000	9100	9340	91.0	93.4	80.0-120			2.67	20
Sodium	10000	9610	9930	96.1	99.3	80.0-120			3.24	20

L1180954-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1180954-07 01/23/20 14:47 • (MS) R3493571-5 01/23/20 14:52 • (MSD) R3493571-6 01/23/20 14:54

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	55400	64000	64000	85.4	86.3	1	75.0-125			0.145	20
Magnesium	10000	11500	20800	20800	92.4	92.7	1	75.0-125			0.141	20
Potassium	10000	3680	13100	13000	94.0	93.0	1	75.0-125			0.821	20
Sodium	10000	78000	85800	85800	77.9	78.3	1	75.0-125			0.0424	20

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

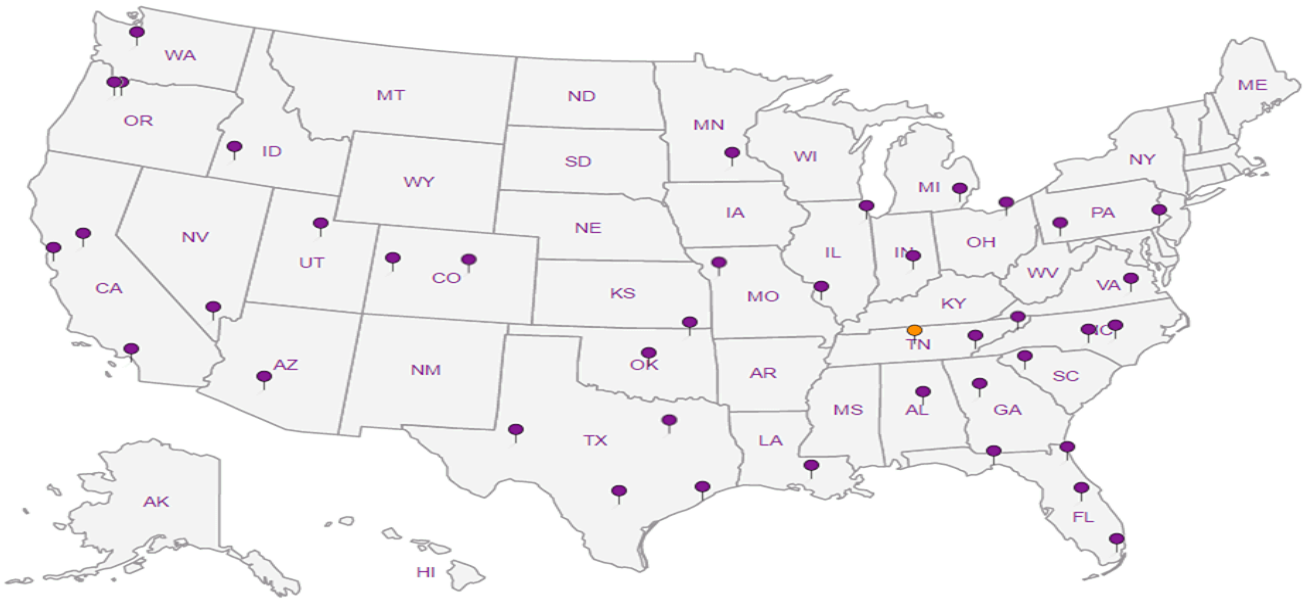
Third Party Federal Accreditations

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

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

Our Locations

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



SCS Engineers - KS
8575 W. 110th Street
Overland Park, KS 66210

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

Pres Chk

Report to: Jason Franks

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

Project Description: Evergy Iatan Generating Statio

City/State Collected: WESTON/MO

Please Circle: PT MT CT ET

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

Client Project # 27213167.19

Lab Project # AQUAOPKS-IATAN

Collected by (print): JASON B. FRANKS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

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

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALKBI, ALKCA 125mlHDPE-NoPres	Ca, K, Mg, Na - 6010 250mlHDPE-HNO3	K, Mg, Na - 6010 250mlHDPE-HNO3	SO4 - 9056 125mlHDPE-NoPres	SO4, Chloride - 9056 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-1	GRAB	GW	—	1/15/2020	1405	3	X	X			X		-01
MW-2		GW	—		1330	3	X	X			X		02
MW-9		GW	—		1450	3	X	X		X			03
MW-10		GW	—		1250	3	X	X			X		04
MW-101		GW	—	1/16/2020	1100	3	X	X		X			05
MW-104		GW	—		1150	3	X		X		X		06
MW-105		GW	—		1250	3	X	X		X			07
MW-107		GW	—		1345	3	X	X		X			08

Chain of Custody Page 1 of 1

Pace Analytical® National Center for Testing & Innovation

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

SDG # L1180951

Ta M164

Acc AQUAOPKS

Template: T152879

Prelogin: P750293

PM: 206 - Jeff Carr

PB:

Shipped Via:

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: ___ UPS ___ FedEx ___ Courier SWA

Tracking #

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	1/16/2020	1521			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 1.9 1.0.2 2.1 24	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1-18-20 Time: 800	Hold: Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 24, 2020

SCS Engineers - KS

Sample Delivery Group:	L1180954
Samples Received:	01/18/2020
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

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

- MW-1 L1180954-01 6
- MW-2 L1180954-02 7
- MW-9 L1180954-03 8
- DUPLICATE 1 L1180954-04 9
- MW-10 L1180954-05 10
- MW-101 L1180954-06 11
- MW-104 L1180954-07 12
- DUPLICATE 2 L1180954-08 13
- MW-105 L1180954-09 14
- MW-107 L1180954-10 15

Qc: Quality Control Summary 16

- Wet Chemistry by Method 9056A 16
- Metals (ICP) by Method 6010B 17

Gl: Glossary of Terms 18

Al: Accreditations & Locations 19

Sc: Sample Chain of Custody 20

MW-1 L1180954-01 GW

Collected by: Jason R Franks | Collected date/time: 01/15/20 14:05 | Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1414370	1	01/22/20 21:27	01/22/20 21:27	ELN	Mt. Juliet, TN

MW-2 L1180954-02 GW

Collected by: Jason R Franks | Collected date/time: 01/15/20 13:30 | Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1414370	1	01/22/20 21:43	01/22/20 21:43	ELN	Mt. Juliet, TN

MW-9 L1180954-03 GW

Collected by: Jason R Franks | Collected date/time: 01/15/20 14:50 | Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1414370	1	01/22/20 21:59	01/22/20 21:59	ELN	Mt. Juliet, TN

DUPLICATE 1 L1180954-04 GW

Collected by: Jason R Franks | Collected date/time: 01/15/20 14:50 | Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1414370	1	01/22/20 23:38	01/22/20 23:38	ELN	Mt. Juliet, TN

MW-10 L1180954-05 GW

Collected by: Jason R Franks | Collected date/time: 01/15/20 12:50 | Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1414370	1	01/22/20 23:54	01/22/20 23:54	ELN	Mt. Juliet, TN

MW-101 L1180954-06 GW

Collected by: Jason R Franks | Collected date/time: 01/16/20 11:00 | Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1414370	1	01/23/20 00:11	01/23/20 00:11	ELN	Mt. Juliet, TN

MW-104 L1180954-07 GW

Collected by: Jason R Franks | Collected date/time: 01/15/20 11:50 | Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1414408	1	01/22/20 09:57	01/23/20 14:47	EL	Mt. Juliet, TN

DUPLICATE 2 L1180954-08 GW

Collected by: Jason R Franks | Collected date/time: 01/15/20 11:50 | Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1414408	1	01/22/20 09:57	01/23/20 15:55	EL	Mt. Juliet, TN

MW-105 L1180954-09 GW

Collected by: Jason R Franks
Collected date/time: 01/16/20 12:50
Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1414370	1	01/23/20 00:27	01/23/20 00:27	ELN	Mt. Juliet, TN

MW-107 L1180954-10 GW

Collected by: Jason R Franks
Collected date/time: 01/16/20 13:45
Received date/time: 01/18/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1414370	1	01/23/20 00:44	01/23/20 00:44	ELN	Mt. Juliet, TN

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

Jeff Carr
Project Manager

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	326		100	1	01/22/2020 21:27	WG1414370

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	374		100	1	01/22/2020 21:43	WG1414370

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	ND		1000	1	01/22/2020 21:59	WG1414370
Fluoride	445		100	1	01/22/2020 21:59	WG1414370

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	ND		1000	1	01/22/2020 23:38	WG1414370
Fluoride	438		100	1	01/22/2020 23:38	WG1414370

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	637		100	1	01/22/2020 23:54	WG1414370

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6380		1000	1	01/23/2020 00:11	WG1414370
Fluoride	380		100	1	01/23/2020 00:11	WG1414370

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	55400		1000	1	01/23/2020 14:47	WG1414408

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	55900		1000	1	01/23/2020 15:55	WG1414408

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	20400		1000	1	01/23/2020 00:27	WG1414370

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	34300		1000	1	01/23/2020 00:44	WG1414370

Method Blank (MB)

(MB) R3493292-1 01/22/20 10:15

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

L1180954-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1180954-03 01/22/20 21:59 • (DUP) R3493292-5 01/22/20 22:16

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	ND	821	1	2.33	J	15
Fluoride	445	437	1	1.79		15

Laboratory Control Sample (LCS)

(LCS) R3493292-2 01/22/20 10:31

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	39100	97.7	80.0-120	
Fluoride	8000	7950	99.4	80.0-120	

L1180954-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1180954-03 01/22/20 21:59 • (MS) R3493292-6 01/22/20 22:32 • (MSD) R3493292-7 01/22/20 22:49

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	%	%		%			%	%
Chloride	50000	ND	46900	47200	92.2	92.7	1	80.0-120			0.588	15
Fluoride	5000	445	5030	5080	91.7	92.7	1	80.0-120			0.989	15

Method Blank (MB)

(MB) R3493571-1 01/23/20 14:39

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

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

(LCS) R3493571-2 01/23/20 14:41 • (LCSD) R3493571-3 01/23/20 14:44

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Calcium	10000	9550	9860	95.5	98.6	80.0-120			3.16	20

L1180954-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1180954-07 01/23/20 14:47 • (MS) R3493571-5 01/23/20 14:52 • (MSD) R3493571-6 01/23/20 14:54

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Calcium	10000	55400	64000	64000	85.4	86.3	1	75.0-125			0.145	20

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

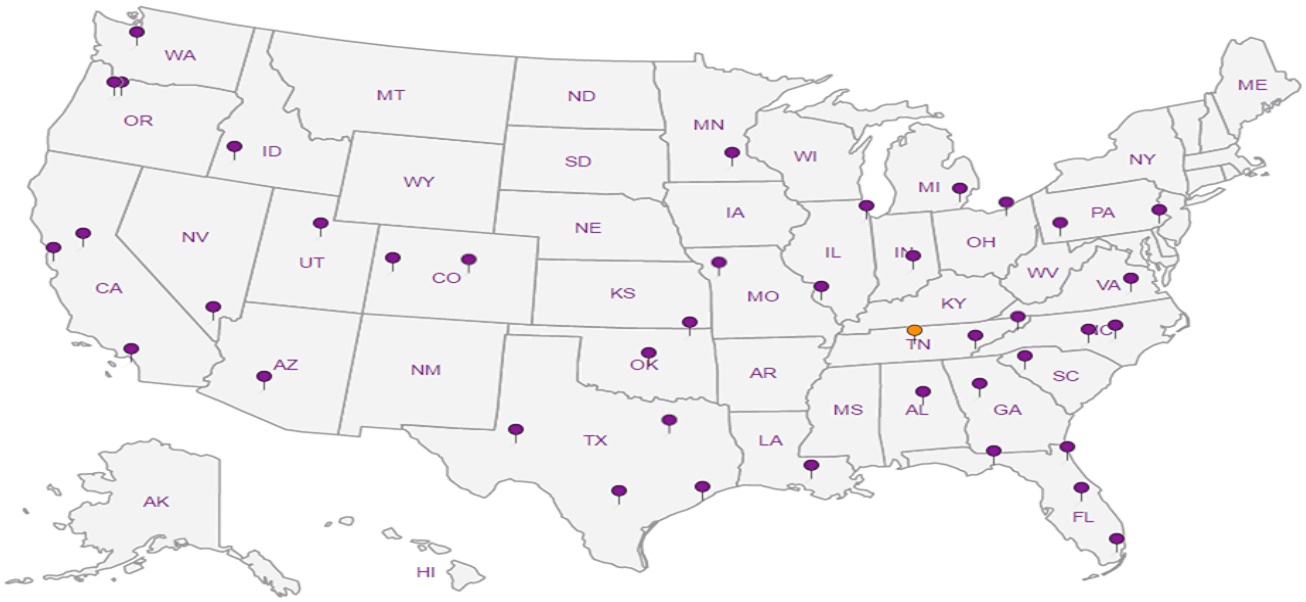
Third Party Federal Accreditations

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

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

Our Locations

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



1 2

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@kcpl.com;

Project Description: Evergy Iatan Generating Statio

City/State Collected: WESTON, MO

Please Circle: PT MT CT ET

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

Client Project # 27213167.19

Lab Project # AQUAOPKS-IATAN

Collected by (print): JASON R. FRANKS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

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

Quote #

Date Results Needed

Analysis / Container / Preservative

Pres Chk

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Calcium 250mlHDPE-HNO3	Chloride 125mlHDPE-NoPres	Chloride, Fluoride 125mlHDPE-NoPres	Fluoride 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-1	GRAB	GW	—	1/15/2020	1405	1				X		-01
MW-2		GW	—		1330	1				X		02
MW-9		GW	—		1450	1			X			03
DUPLICATE 1		GW	—		1450	1			X			04
MW-9 MS/MSD		GW	—		1450	1			X			-05
MW-10		GW	—		1250	1				X	-05	-06
MW-101		GW	—	1/10/2020	1100	1			X		-06	-07
MW-104		GW	—		1150	1	X				-07	-08
DUPLICATE 2		GW	—		1150	1	X				-08	-09
MW-104 MS/MSD		GW	—		1150	1	X					-10

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier SWA

Tracking #

Chain of Custody Page 1 of 2

Pace Analytical® National Center for Testing & Innovation

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

SDG # L1180954

M165

Template: T136056
Prelogin: P750295
PM: 206 - Jeff Carr
PB:
Shipped Via:

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)
	1/16/20	1521	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: 1.9+0.2=2.1 °C Bottles Received: 12

Date: 1-18-20 Time: 800

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

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

Report to: Jason Franks

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

Project Description: Evergy Iatan Generating Statio

City/State Collected: WESTON, MO

Please Circle: PT MT CT ET

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

Client Project # 27213167.19

Lab Project # AQUAOPKS-IATAN

Collected by (print): JASON K. FRANKS

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

Site/Facility ID #

P.O. #

Quote #

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

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Calcium 250mlHDPE-HNO3	Chloride 125mlHDPE-NoPres	Chloride, Fluoride 125mlHDPE-NoPres	Fluoride 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-105	GRAB	GW	-	1/16/2020	1250	1		X			-09	-11
MW-107	"	GW	-	↓	1345	1		X			-10	-12

Analysis / Container / Preservative

Pres Chk

Chain of Custody Page 2 of 2

Pace Analytical®
National Center for Testing & Innovation

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

SDG # L1180954

Table #

Acctnum: AQUAOPKS

Template: T136056

Prelogin: P750295

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 SHA

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
	1/16/20	1521			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.9+0.2=2.1 °C Bottles Received: 2	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1-18-20 Time: 800	Hold: / Condition: NCF / OK

Jared Morrison
December 16, 2022

ATTACHMENT 1-4

February 2020 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

February 10, 2020

SCS Engineers - KS

Sample Delivery Group:	L1186248
Samples Received:	02/05/2020
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

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

MW-1 L1186248-01 5

DUPLICATE 1 L1186248-02 6

MW-104 L1186248-03 7

DUPLICATE 2 L1186248-04 8

MW-105 L1186248-05 9

MW-107 L1186248-06 10

DUPLICATE 3 L1186248-07 11

Qc: Quality Control Summary 12

Wet Chemistry by Method 9056A 12

Metals (ICP) by Method 6010B 15

Gl: Glossary of Terms 16

Al: Accreditations & Locations 17

Sc: Sample Chain of Custody 18

MW-1 L1186248-01 GW

Collected by: Jason R. Franks | Collected date/time: 02/04/20 10:00 | Received date/time: 02/05/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1423103	1	02/06/20 05:48	02/06/20 05:48	ELN	Mt. Juliet, TN

DUPLICATE 1 L1186248-02 GW

Collected by: Jason R. Franks | Collected date/time: 02/04/20 10:00 | Received date/time: 02/05/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1423103	1	02/06/20 06:31	02/06/20 06:31	ELN	Mt. Juliet, TN

MW-104 L1186248-03 GW

Collected by: Jason R. Franks | Collected date/time: 02/04/20 10:05 | Received date/time: 02/05/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1423537	1	02/06/20 17:16	02/07/20 11:39	TRB	Mt. Juliet, TN

DUPLICATE 2 L1186248-04 GW

Collected by: Jason R. Franks | Collected date/time: 02/04/20 10:05 | Received date/time: 02/05/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1423537	1	02/06/20 17:16	02/07/20 11:54	TRB	Mt. Juliet, TN

MW-105 L1186248-05 GW

Collected by: Jason R. Franks | Collected date/time: 02/04/20 10:40 | Received date/time: 02/05/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1423103	1	02/06/20 06:46	02/06/20 06:46	ELN	Mt. Juliet, TN

MW-107 L1186248-06 GW

Collected by: Jason R. Franks | Collected date/time: 02/04/20 11:05 | Received date/time: 02/05/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1423103	1	02/06/20 07:00	02/06/20 07:00	ELN	Mt. Juliet, TN

DUPLICATE 3 L1186248-07 GW

Collected by: Jason R. Franks | Collected date/time: 02/04/20 11:05 | Received date/time: 02/05/20 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1423103	1	02/06/20 08:12	02/06/20 08:12	ELN	Mt. Juliet, TN

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

Jeff Carr
Project Manager

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	329		100	1	02/06/2020 05:48	WG1423103

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	331		100	1	02/06/2020 06:31	WG1423103

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	51300	V	1000	1	02/07/2020 11:39	WG1423537

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	50800		1000	1	02/07/2020 11:54	WG1423537

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	20900		1000	1	02/06/2020 06:46	WG1423103

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	27500		1000	1	02/06/2020 07:00	WG1423103

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	27400		1000	1	02/06/2020 08:12	WG1423103

Method Blank (MB)

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

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

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

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

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	11400	11300	1	0.369		15
Fluoride	744	745	1	0.188		15

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

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

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	11400	11400	1	0.176		15
Fluoride	845	852	1	0.837		15

Laboratory Control Sample (LCS)

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

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39700	99.3	80.0-120	
Fluoride	8000	8070	101	80.0-120	

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

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

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	6360	51200	51300	89.6	89.9	1	80.0-120			0.334	15
Fluoride	5000	323	4730	4780	88.1	89.1	1	80.0-120			0.981	15

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

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

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	20300	65700	66100	90.7	91.5	1	80.0-120			0.595	15
Fluoride	5000	337	4800	4890	89.2	91.0	1	80.0-120			1.82	15

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

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

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	59800	103000	104000	86.4	88.5	1	80.0-120	E	E	1.02	15
Fluoride	5000	209	4350	4470	82.8	85.3	1	80.0-120			2.83	15

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

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

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	227000	261000	261000	68.4	68.6	1	80.0-120	E V	E V	0.0293	15
Fluoride	5000	1050	5500	5530	89.0	89.6	1	80.0-120			0.493	15

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

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

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	25300	71900	72400	93.3	94.2	1	80.0-120			0.642	15
Fluoride	5000	130	4630	4690	90.1	91.2	1	80.0-120			1.17	15

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

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

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	5610	51800	52200	92.4	93.3	1	80.0-120			0.805	15
Fluoride	5000	329	4880	4940	90.9	92.1	1	80.0-120			1.24	15

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

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

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	27500	72500	72700	89.9	90.5	1	80.0-120			0.373	15
Fluoride	5000	792	5410	5420	92.3	92.6	1	80.0-120			0.272	15

Method Blank (MB)

(MB) R3497928-1 02/07/20 11:34

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

Laboratory Control Sample (LCS)

(LCS) R3497928-2 02/07/20 11:36

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Calcium	10000	9810	98.1	80.0-120	

L1186248-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1186248-03 02/07/20 11:39 • (MS) R3497928-4 02/07/20 11:44 • (MSD) R3497928-5 02/07/20 11:46

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	51300	57900	57800	65.5	64.5	1	75.0-125	V	V	0.171	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.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

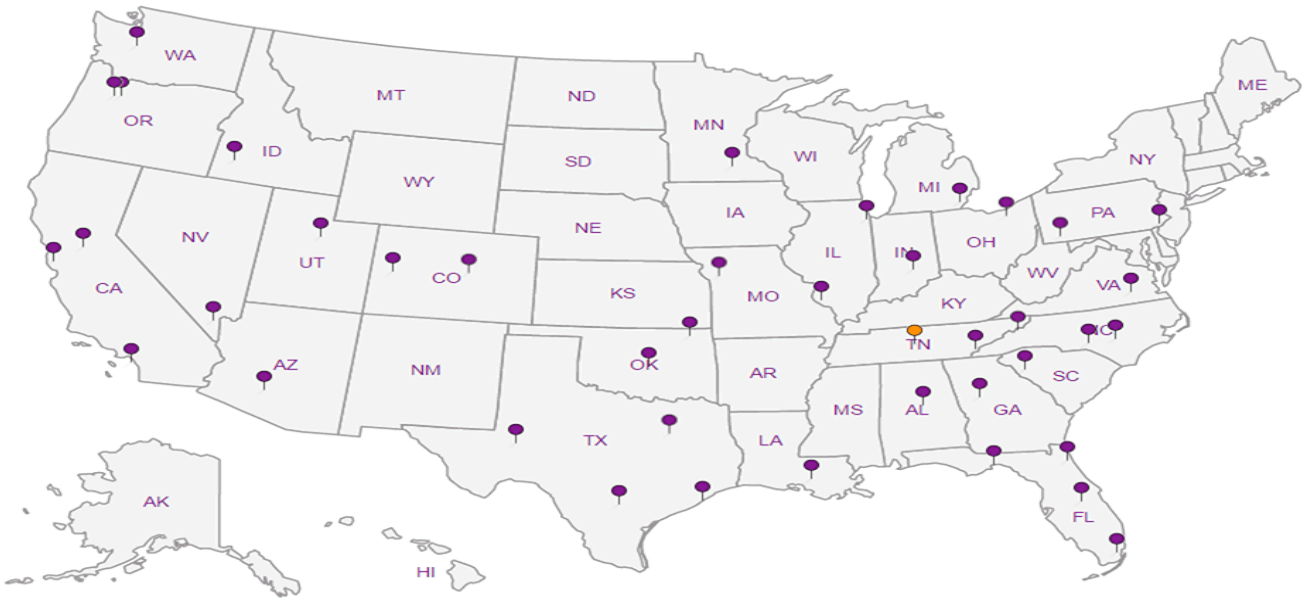
Third Party Federal Accreditations

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

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

Our Locations

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



SCS Engineers - KS

8575 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@kcpl.com;

Project Description: Evergy Iatan Generating Statio

City/State Collected: WESTON, MO

Please Circle: PT MT CT ET

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

Client Project # 27213167.19

Lab Project # AQUAOPKS-IATAN

Collected by (print): JASON R. FRANKS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

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

Quote #

Date Results Needed

Chain of Custody Page 1 of 1

Pace Analytical® National Center for Testing & Innovation

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

SDG # L1186248

Table #

Acctnum: AQUAOPKS

Template: T136056

Prelogin: P753038

PM: 206 - Jeff Carr

PB:

Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Pres Chk	Calcium 250mlHDPE-HNO3	Chloride 125mlHDPE-NoPres	Fluoride 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-1	GRAB	GW		02/4/20	1000	1				X		-01
MW-1 MS/MSD		GW			1000	1				X		01
DUPLICATE 1		GW			1005	1				X		02
MW-104		GW			1005	1		X				03
MW-104 MS/MSD		GW			1005	1		X				03
DUPLICATE 2		GW			1005	1		X				04
MW-105		GW			1040	1			X			05
MW-107		GW			1105	1			X			06
MW-107 MS/MSD		GW			1105	1			X			06
DUPLICATE 3		GW			1105	1			X			07

* 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

	Date:	Time:		
Relinquished by : (Signature)	02/4/20	1235	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	2/4/20	1850	Received by: (Signature) FedEx	Temp: 4.3 °C Bottles Received: 10
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 2-5-20 Time: 800

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Jared Morrison
December 16, 2022

ATTACHMENT 1-5

May 2020 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

May 31, 2020

SCS Engineers - KS

Sample Delivery Group:	L1221445
Samples Received:	05/22/2020
Project Number:	27213167.15
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

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

- MW-101 L1221445-01 6
- MW-102 L1221445-02 7
- MW-103 L1221445-03 8
- MW-104 L1221445-04 9
- MW-105 L1221445-05 10
- MW-107 L1221445-06 11
- MW-108 L1221445-07 12
- MW-109 L1221445-08 13
- MW-110 L1221445-09 14
- MW-111 L1221445-10 15
- DUPLICATE L1221445-11 16

Qc: Quality Control Summary 17

- Gravimetric Analysis by Method 2540 C-2011 17
- Wet Chemistry by Method 9056A 19
- Metals (ICP) by Method 6010B 21

Gl: Glossary of Terms 22

Al: Accreditations & Locations 23

Sc: Sample Chain of Custody 24

MW-101 L1221445-01 GW

Collected by: Jason R. Franks | Collected date/time: 05/20/20 13:50 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1482633	1	05/27/20 18:45	05/27/20 22:58	AEC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	1	05/27/20 06:05	05/27/20 06:05	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481517	1	05/27/20 23:36	05/29/20 11:39	TRB	Mt. Juliet, TN

MW-102 L1221445-02 GW

Collected by: Jason R. Franks | Collected date/time: 05/20/20 14:25 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1482633	1	05/27/20 18:45	05/27/20 22:58	AEC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	1	05/27/20 06:20	05/27/20 06:20	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481517	1	05/27/20 23:36	05/29/20 11:42	TRB	Mt. Juliet, TN

MW-103 L1221445-03 GW

Collected by: Jason R. Franks | Collected date/time: 05/20/20 15:15 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1482633	1	05/27/20 18:45	05/27/20 22:58	AEC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	1	05/27/20 06:35	05/27/20 06:35	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481517	1	05/27/20 23:36	05/29/20 11:44	TRB	Mt. Juliet, TN

MW-104 L1221445-04 GW

Collected by: Jason R. Franks | Collected date/time: 05/20/20 16:30 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1482633	1	05/27/20 18:45	05/27/20 22:58	AEC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	1	05/27/20 06:50	05/27/20 06:50	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	5	05/27/20 11:33	05/27/20 11:33	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481517	1	05/27/20 23:36	05/29/20 11:47	TRB	Mt. Juliet, TN

MW-105 L1221445-05 GW

Collected by: Jason R. Franks | Collected date/time: 05/20/20 15:15 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1482633	1	05/27/20 18:45	05/27/20 22:58	AEC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	1	05/27/20 07:19	05/27/20 07:19	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	5	05/27/20 07:34	05/27/20 07:34	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481517	1	05/27/20 23:36	05/29/20 11:50	TRB	Mt. Juliet, TN

MW-107 L1221445-06 GW

Collected by: Jason R. Franks | Collected date/time: 05/20/20 16:25 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1482633	1	05/27/20 18:45	05/27/20 22:58	AEC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	1	05/27/20 08:19	05/27/20 08:19	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	5	05/27/20 12:03	05/27/20 12:03	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481517	1	05/27/20 23:36	05/29/20 11:52	TRB	Mt. Juliet, TN

MW-108 L1221445-07 GW

Collected by: Jason R. Franks | Collected date/time: 05/20/20 12:15 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1482633	1	05/27/20 18:45	05/27/20 22:58	AEC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	1	05/27/20 08:34	05/27/20 08:34	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	10	05/27/20 12:18	05/27/20 12:18	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481517	1	05/27/20 23:36	05/29/20 11:55	TRB	Mt. Juliet, TN

MW-109 L1221445-08 GW

Collected by: Jason R. Franks | Collected date/time: 05/20/20 13:00 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1482633	1	05/27/20 18:45	05/27/20 22:58	AEC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	1	05/27/20 08:49	05/27/20 08:49	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	5	05/27/20 09:04	05/27/20 09:04	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481517	1	05/27/20 23:36	05/29/20 11:58	TRB	Mt. Juliet, TN

MW-110 L1221445-09 GW

Collected by: Jason R. Franks | Collected date/time: 05/20/20 14:20 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1482633	1	05/27/20 18:45	05/27/20 22:58	AEC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	1	05/27/20 09:19	05/27/20 09:19	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	5	05/27/20 12:33	05/27/20 12:33	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481517	1	05/27/20 23:36	05/29/20 11:11	TRB	Mt. Juliet, TN

MW-111 L1221445-10 GW

Collected by: Jason R. Franks | Collected date/time: 05/20/20 15:35 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1482633	1	05/27/20 18:45	05/27/20 22:58	AEC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	1	05/27/20 10:04	05/27/20 10:04	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481517	1	05/27/20 23:36	05/29/20 12:00	TRB	Mt. Juliet, TN

DUPLICATE L1221445-11 GW

Collected by: Jason R. Franks | Collected date/time: 05/20/20 14:20 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1482636	1	05/27/20 18:24	05/27/20 23:25	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	1	05/27/20 10:34	05/27/20 10:34	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1482430	5	05/27/20 11:18	05/27/20 11:18	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481517	1	05/27/20 23:36	05/29/20 12:08	TRB	Mt. Juliet, TN

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

Jeff Carr
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	546000		10000	1	05/27/2020 22:58	WG1482633

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	5890		1000	1	05/27/2020 06:05	WG1482430
Fluoride	350		150	1	05/27/2020 06:05	WG1482430
Sulfate	ND		5000	1	05/27/2020 06:05	WG1482430

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/29/2020 11:39	WG1481517
Calcium	130000		1000	1	05/29/2020 11:39	WG1481517

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	487000		10000	1	05/27/2020 22:58	WG1482633

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	5370		1000	1	05/27/2020 06:20	WG1482430
Fluoride	267		150	1	05/27/2020 06:20	WG1482430
Sulfate	ND		5000	1	05/27/2020 06:20	WG1482430

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/29/2020 11:42	WG1481517
Calcium	125000		1000	1	05/29/2020 11:42	WG1481517

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	482000		10000	1	05/27/2020 22:58	WG1482633

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	4640		1000	1	05/27/2020 06:35	WG1482430
Fluoride	243		150	1	05/27/2020 06:35	WG1482430
Sulfate	ND		5000	1	05/27/2020 06:35	WG1482430

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/29/2020 11:44	WG1481517
Calcium	128000		1000	1	05/29/2020 11:44	WG1481517

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	460000		10000	1	05/27/2020 22:58	WG1482633

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	24100		1000	1	05/27/2020 06:50	WG1482430
Fluoride	539		150	1	05/27/2020 06:50	WG1482430
Sulfate	139000		25000	5	05/27/2020 11:33	WG1482430

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1190		200	1	05/29/2020 11:47	WG1481517
Calcium	55500		1000	1	05/29/2020 11:47	WG1481517

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	795000		13300	1	05/27/2020 22:58	WG1482633

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	16400		1000	1	05/27/2020 07:19	WG1482430
Fluoride	707		150	1	05/27/2020 07:19	WG1482430
Sulfate	302000		25000	5	05/27/2020 07:34	WG1482430

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1660		200	1	05/29/2020 11:50	WG1481517
Calcium	74100		1000	1	05/29/2020 11:50	WG1481517

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	475000		10000	1	05/27/2020 22:58	WG1482633

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	17000		1000	1	05/27/2020 08:19	WG1482430
Fluoride	533		150	1	05/27/2020 08:19	WG1482430
Sulfate	174000		25000	5	05/27/2020 12:03	WG1482430

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	876		200	1	05/29/2020 11:52	WG1481517
Calcium	40300		1000	1	05/29/2020 11:52	WG1481517

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	813000		13300	1	05/27/2020 22:58	WG1482633

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	20800		1000	1	05/27/2020 08:34	WG1482430
Fluoride	509		150	1	05/27/2020 08:34	WG1482430
Sulfate	359000		50000	10	05/27/2020 12:18	WG1482430

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1600		200	1	05/29/2020 11:55	WG1481517
Calcium	117000		1000	1	05/29/2020 11:55	WG1481517

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	691000		13300	1	05/27/2020 22:58	WG1482633

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	25600		1000	1	05/27/2020 08:49	WG1482430
Fluoride	525		150	1	05/27/2020 08:49	WG1482430
Sulfate	296000		25000	5	05/27/2020 09:04	WG1482430

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	1350		200	1	05/29/2020 11:58	WG1481517
Calcium	92200		1000	1	05/29/2020 11:58	WG1481517

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	684000		13300	1	05/27/2020 22:58	WG1482633

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	29400		1000	1	05/27/2020 09:19	WG1482430
Fluoride	583		150	1	05/27/2020 09:19	WG1482430
Sulfate	207000		25000	5	05/27/2020 12:33	WG1482430

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	3960		200	1	05/29/2020 11:11	WG1481517
Calcium	43300		1000	1	05/29/2020 11:11	WG1481517

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	564000		10000	1	05/27/2020 22:58	WG1482633

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	9260		1000	1	05/27/2020 10:04	WG1482430
Fluoride	517		150	1	05/27/2020 10:04	WG1482430
Sulfate	29000		5000	1	05/27/2020 10:04	WG1482430

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	827		200	1	05/29/2020 12:00	WG1481517
Calcium	93300		1000	1	05/29/2020 12:00	WG1481517

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	685000		13300	1	05/27/2020 23:25	WG1482636

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	29300		1000	1	05/27/2020 10:34	WG1482430
Fluoride	579		150	1	05/27/2020 10:34	WG1482430
Sulfate	201000		25000	5	05/27/2020 11:18	WG1482430

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	3980		200	1	05/29/2020 12:08	WG1481517
Calcium	42700		1000	1	05/29/2020 12:08	WG1481517

Method Blank (MB)

(MB) R3533239-1 05/27/20 22:58

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

L1221445-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1221445-10 05/27/20 22:58 • (DUP) R3533239-3 05/27/20 22:58

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	564000	568000	1	0.707		5

Laboratory Control Sample (LCS)

(LCS) R3533239-2 05/27/20 22:58

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

Method Blank (MB)

(MB) R3533284-1 05/27/20 23:25

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

Laboratory Control Sample (LCS)

(LCS) R3533284-2 05/27/20 23:25

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8620000	98.0	85.0-115	

Method Blank (MB)

(MB) R3532165-1 05/26/20 22:11

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

L1221322-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1221322-01 05/27/20 02:51 • (DUP) R3532165-3 05/27/20 03:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	19800	19700	1	0.150		15
Fluoride	506	508	1	0.335		15
Sulfate	10300	10300	1	0.116		15

L1221445-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1221445-04 05/27/20 06:50 • (DUP) R3532165-5 05/27/20 07:05

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	24100	24100	1	0.0328		15
Fluoride	539	548	1	1.53		15

L1221445-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1221445-04 05/27/20 11:33 • (DUP) R3532165-8 05/27/20 11:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	139000	139000	5	0.299		15

Laboratory Control Sample (LCS)

(LCS) R3532165-2 05/26/20 22:26

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	39600	98.9	80.0-120	
Fluoride	8000	8260	103	80.0-120	
Sulfate	40000	38700	96.7	80.0-120	

L1221322-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1221322-01 05/27/20 02:51 • (MS) R3532165-4 05/27/20 03:20

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	19800	72600	106	1	80.0-120	
Fluoride	5000	506	5580	102	1	80.0-120	
Sulfate	50000	10300	62000	103	1	80.0-120	

L1221445-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221445-09 05/27/20 09:19 • (MS) R3532165-6 05/27/20 09:34 • (MSD) R3532165-7 05/27/20 09:49

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 %
Chloride	50000	29400	76900	77400	94.9	96.0	1	80.0-120			0.676	15
Fluoride	5000	583	5250	5320	93.4	94.8	1	80.0-120			1.33	15

Method Blank (MB)

(MB) R3533271-1 05/29/20 11:06

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

Laboratory Control Sample (LCS)

(LCS) R3533271-2 05/29/20 11:09

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	956	95.6	80.0-120	
Calcium	10000	9590	95.9	80.0-120	

L1221445-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221445-09 05/29/20 11:11 • (MS) R3533271-4 05/29/20 11:16 • (MSD) R3533271-5 05/29/20 11:19

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	3960	4820	4860	86.4	90.4	1	75.0-125			0.829	20
Calcium	10000	43300	51300	51600	79.8	83.4	1	75.0-125			0.688	20

L1221447-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221447-04 05/29/20 11:21 • (MS) R3533271-6 05/29/20 11:24 • (MSD) R3533271-7 05/29/20 11:26

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	ND	1050	1070	95.2	97.0	1	75.0-125			1.71	20
Calcium	10000	140000	148000	149000	83.1	89.5	1	75.0-125			0.430	20

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

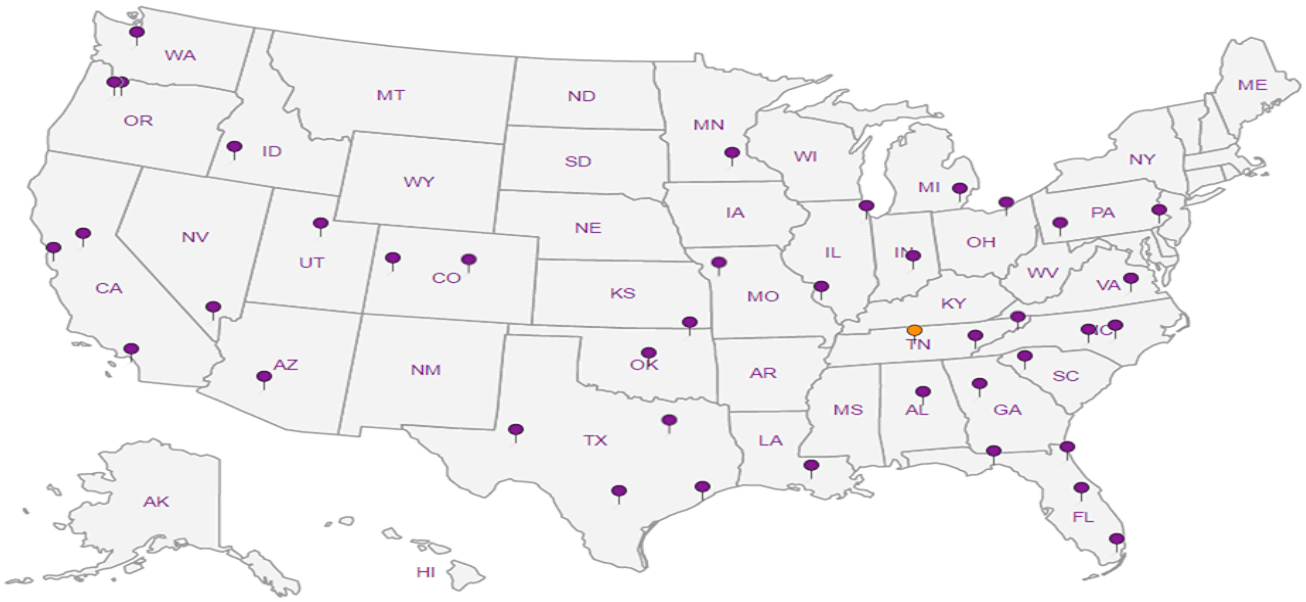
Third Party Federal Accreditations

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

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

Our Locations

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



SCS Engineers - KS

8575 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 3

Pace Analytical® National Center for Testing & Innovation

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

Report to: Jason Franks

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

Project Description: KCPL - Iatan Gen. Station

City/State Collected: Weston, MO

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project #: 27213167.15

Lab Project #: AQUAOPKS-IATAN

SDG # 1221445 G009

Collected by (print): Jason R. Franks

Site/Facility ID #

P.O. #

Acctnum: AQUAOPKS
Template: T128513
Prelogin: P769366
PM: 206 - Jeff Carr
PB:
Shipped Via:

Collected by (signature): Jason R. Franks

Immediately Packed on Ice N____ Y ✓

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

Quote #

Date Results Needed

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-101	Grab	GW	–	5/20/20	1350	3	X	X	X								.01
MW-102	↓	GW	–	↓	1425	3	X	X	X								02
MW-103		GW	–		1515	3	X	X	X								03
MW-104		GW	–		1630	3	X	X	X								04
MW-105		GW	–		1515	3	X	X	X								05
MW-107		GW	–		1625	3	X	X	X								06
MW-108		GW	–		1215	3	X	X	X								07
MW-109		GW	–		1300	3	X	X	X								08
MW-110		GW	–		1420	3	X	X	X								09
MW-111		GW	–		1535	3	X	X	X								10

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

Remarks:

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier ________

Tracking #

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Jason R. Franks	5/21/20	1300	[signature] 5-21-20 1300	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C 4.1+0=4.1 Bottles Received: 36
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 5/22/20 Time: 9:00

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

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

Report to: Jason Franks

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

Project Description: KCPL - Iatan Gen. Station

City/State Collected: WESTON, MO

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project # 27213167.15

Lab Project # AQUAOPKS-IATAN

Collected by (print): JASON R. FRANKS

Site/Facility ID #

P.O. #

Collected by (signature): Jason R. Franks

Immediately Packed on Ice N ___ Y ___

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

Quote #

Date Results Needed

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)
DUPLICATE	GRAB	GW	—	5/20/20	1420	3	X	X	X		11
110 MS/MSD	↓	GW	—	↓	1425	2	X	X			10

Analysis / Container / Preservative — Pres Chk: 12

Chain of Custody Page 2 of 2

Pace Analytical® National Center for Testing & Innovation

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

SDG # 122143

Table #

Acctnum: AQUAOPKS

Template: T128513

Prelogin: P769366

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
Jason R. Franks	5/21/20	1300	5-21-20 1300		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.1 °C Bottles Received: 36	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/22/20 Time: 9:00	Hold: Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

May 31, 2020

SCS Engineers - KS

Sample Delivery Group:	L1221405
Samples Received:	05/22/2020
Project Number:	27213167.20
Description:	Evergy - Iatan Gen. Stat - Ash Wells

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

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

- MW-101 L1221405-01 6
- MW-102 L1221405-02 7
- MW-103 L1221405-03 8
- MW-104 L1221405-04 9
- MW-105 L1221405-05 10
- MW-107 L1221405-06 11
- MW-108 L1221405-07 12
- MW-109 L1221405-08 13
- MW-110 L1221405-09 14
- MW-111 L1221405-10 15
- DUPLICATE L1221405-11 16

Qc: Quality Control Summary 17

- Mercury by Method 7470A 17
- Metals (ICP) by Method 6010B 18
- Metals (ICPMS) by Method 6020 20

Gl: Glossary of Terms 23

Al: Accreditations & Locations 24

Sc: Sample Chain of Custody 25

MW-101 L1221405-01 GW

Collected by	Collected date/time	Received date/time
	05/20/20 13:50	05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1481091	1	05/23/20 21:59	05/26/20 21:34	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481515	1	05/28/20 12:50	05/28/20 19:22	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481527	1	05/27/20 23:04	05/29/20 17:25	JPD	Mt. Juliet, TN

MW-102 L1221405-02 GW

Collected by	Collected date/time	Received date/time
	05/20/20 14:25	05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1481091	1	05/23/20 21:59	05/26/20 21:40	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481515	1	05/28/20 12:50	05/28/20 19:49	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481527	1	05/27/20 23:04	05/29/20 17:28	JPD	Mt. Juliet, TN

MW-103 L1221405-03 GW

Collected by	Collected date/time	Received date/time
	05/20/20 15:15	05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1481091	1	05/23/20 21:59	05/26/20 21:42	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481515	1	05/28/20 12:50	05/28/20 19:52	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481527	1	05/27/20 23:04	05/29/20 17:31	JPD	Mt. Juliet, TN

MW-104 L1221405-04 GW

Collected by	Collected date/time	Received date/time
	05/20/20 16:30	05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1481091	1	05/23/20 21:59	05/26/20 21:44	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481515	1	05/28/20 12:50	05/28/20 19:54	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481527	1	05/27/20 23:04	05/29/20 17:34	JPD	Mt. Juliet, TN

MW-105 L1221405-05 GW

Collected by	Collected date/time	Received date/time
	05/20/20 15:15	05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1481091	1	05/23/20 21:59	05/26/20 21:46	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481515	1	05/28/20 12:50	05/28/20 19:57	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481527	1	05/27/20 23:04	05/29/20 17:38	JPD	Mt. Juliet, TN

MW-107 L1221405-06 GW

Collected by	Collected date/time	Received date/time
	05/20/20 16:25	05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1481091	1	05/23/20 21:59	05/26/20 21:48	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481515	1	05/28/20 12:50	05/28/20 20:00	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481527	1	05/27/20 23:04	05/29/20 17:41	JPD	Mt. Juliet, TN

MW-108 L1221405-07 GW

Collected by	Collected date/time	Received date/time
	05/20/20 13:15	05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1481091	1	05/23/20 21:59	05/26/20 21:50	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481516	1	05/27/20 23:07	05/28/20 20:05	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481528	1	05/28/20 07:49	05/28/20 19:59	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481528	1	05/28/20 07:49	05/29/20 09:15	JPD	Mt. Juliet, TN

MW-109 L1221405-08 GW

Collected by	Collected date/time	Received date/time
	05/20/20 13:00	05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1481091	1	05/23/20 21:59	05/26/20 21:52	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481516	1	05/27/20 23:07	05/28/20 20:13	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481528	1	05/28/20 07:49	05/28/20 20:02	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481528	1	05/28/20 07:49	05/29/20 09:19	JPD	Mt. Juliet, TN

MW-110 L1221405-09 GW

Collected by	Collected date/time	Received date/time
	05/20/20 14:20	05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1481091	1	05/23/20 21:59	05/26/20 20:59	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481516	1	05/27/20 23:07	05/28/20 19:47	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481528	1	05/28/20 07:49	05/28/20 16:19	LD	Mt. Juliet, TN

MW-111 L1221405-10 GW

Collected by	Collected date/time	Received date/time
	05/20/20 15:35	05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1481091	1	05/23/20 21:59	05/26/20 21:54	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481516	1	05/27/20 23:07	05/28/20 20:15	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481528	1	05/28/20 07:49	05/28/20 20:05	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481528	1	05/28/20 07:49	05/29/20 09:22	JPD	Mt. Juliet, TN

DUPLICATE L1221405-11 GW

Collected by	Collected date/time	Received date/time
	05/20/20 14:20	05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1481091	1	05/23/20 21:59	05/26/20 21:56	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1481516	1	05/27/20 23:07	05/28/20 20:18	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481528	1	05/28/20 07:49	05/28/20 20:09	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1481528	1	05/28/20 07:49	05/29/20 09:26	JPD	Mt. Juliet, TN

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

Jeff Carr
Project Manager

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/26/2020 21:34	WG1481091

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	639		5.00	1	05/28/2020 19:22	WG1481515
Chromium	ND		10.0	1	05/28/2020 19:22	WG1481515
Cobalt	ND		10.0	1	05/28/2020 19:22	WG1481515
Lithium	36.2	B	15.0	1	05/28/2020 19:22	WG1481515
Molybdenum	ND		5.00	1	05/28/2020 19:22	WG1481515

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/29/2020 17:25	WG1481527
Arsenic	ND		2.00	1	05/29/2020 17:25	WG1481527
Beryllium	ND		2.00	1	05/29/2020 17:25	WG1481527
Cadmium	ND		1.00	1	05/29/2020 17:25	WG1481527
Lead	ND		5.00	1	05/29/2020 17:25	WG1481527
Selenium	ND		2.00	1	05/29/2020 17:25	WG1481527
Thallium	ND		2.00	1	05/29/2020 17:25	WG1481527

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	05/26/2020 21:40	WG1481091

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Barium	602		5.00	1	05/28/2020 19:49	WG1481515
Chromium	ND		10.0	1	05/28/2020 19:49	WG1481515
Cobalt	ND		10.0	1	05/28/2020 19:49	WG1481515
Lithium	36.3	B	15.0	1	05/28/2020 19:49	WG1481515
Molybdenum	ND		5.00	1	05/28/2020 19:49	WG1481515

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	ND		4.00	1	05/29/2020 17:28	WG1481527
Arsenic	18.6		2.00	1	05/29/2020 17:28	WG1481527
Beryllium	ND		2.00	1	05/29/2020 17:28	WG1481527
Cadmium	ND		1.00	1	05/29/2020 17:28	WG1481527
Lead	ND		5.00	1	05/29/2020 17:28	WG1481527
Selenium	ND		2.00	1	05/29/2020 17:28	WG1481527
Thallium	ND		2.00	1	05/29/2020 17:28	WG1481527

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/26/2020 21:42	WG1481091

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	658		5.00	1	05/28/2020 19:52	WG1481515
Chromium	ND		10.0	1	05/28/2020 19:52	WG1481515
Cobalt	ND		10.0	1	05/28/2020 19:52	WG1481515
Lithium	50.9	B	15.0	1	05/28/2020 19:52	WG1481515
Molybdenum	ND		5.00	1	05/28/2020 19:52	WG1481515

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/29/2020 17:31	WG1481527
Arsenic	ND		2.00	1	05/29/2020 17:31	WG1481527
Beryllium	ND		2.00	1	05/29/2020 17:31	WG1481527
Cadmium	ND		1.00	1	05/29/2020 17:31	WG1481527
Lead	ND		5.00	1	05/29/2020 17:31	WG1481527
Selenium	ND		2.00	1	05/29/2020 17:31	WG1481527
Thallium	ND		2.00	1	05/29/2020 17:31	WG1481527

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/26/2020 21:44	WG1481091

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	207		5.00	1	05/28/2020 19:54	WG1481515
Chromium	ND		10.0	1	05/28/2020 19:54	WG1481515
Cobalt	ND		10.0	1	05/28/2020 19:54	WG1481515
Lithium	21.5	B	15.0	1	05/28/2020 19:54	WG1481515
Molybdenum	18.3		5.00	1	05/28/2020 19:54	WG1481515

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/29/2020 17:34	WG1481527
Arsenic	ND		2.00	1	05/29/2020 17:34	WG1481527
Beryllium	ND		2.00	1	05/29/2020 17:34	WG1481527
Cadmium	ND		1.00	1	05/29/2020 17:34	WG1481527
Lead	ND		5.00	1	05/29/2020 17:34	WG1481527
Selenium	ND		2.00	1	05/29/2020 17:34	WG1481527
Thallium	ND		2.00	1	05/29/2020 17:34	WG1481527

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	05/26/2020 21:46	WG1481091

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Barium	308		5.00	1	05/28/2020 19:57	WG1481515
Chromium	ND		10.0	1	05/28/2020 19:57	WG1481515
Cobalt	ND		10.0	1	05/28/2020 19:57	WG1481515
Lithium	28.9	B	15.0	1	05/28/2020 19:57	WG1481515
Molybdenum	33.8		5.00	1	05/28/2020 19:57	WG1481515

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	ND		4.00	1	05/29/2020 17:38	WG1481527
Arsenic	ND		2.00	1	05/29/2020 17:38	WG1481527
Beryllium	ND		2.00	1	05/29/2020 17:38	WG1481527
Cadmium	ND		1.00	1	05/29/2020 17:38	WG1481527
Lead	ND		5.00	1	05/29/2020 17:38	WG1481527
Selenium	ND		2.00	1	05/29/2020 17:38	WG1481527
Thallium	ND		2.00	1	05/29/2020 17:38	WG1481527

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/26/2020 21:48	WG1481091

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	73.2		5.00	1	05/28/2020 20:00	WG1481515
Chromium	ND		10.0	1	05/28/2020 20:00	WG1481515
Cobalt	ND		10.0	1	05/28/2020 20:00	WG1481515
Lithium	16.2	B	15.0	1	05/28/2020 20:00	WG1481515
Molybdenum	43.6		5.00	1	05/28/2020 20:00	WG1481515

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/29/2020 17:41	WG1481527
Arsenic	ND		2.00	1	05/29/2020 17:41	WG1481527
Beryllium	ND		2.00	1	05/29/2020 17:41	WG1481527
Cadmium	ND		1.00	1	05/29/2020 17:41	WG1481527
Lead	ND		5.00	1	05/29/2020 17:41	WG1481527
Selenium	ND		2.00	1	05/29/2020 17:41	WG1481527
Thallium	ND		2.00	1	05/29/2020 17:41	WG1481527

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/26/2020 21:50	WG1481091

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	110		5.00	1	05/28/2020 20:05	WG1481516
Chromium	ND		10.0	1	05/28/2020 20:05	WG1481516
Cobalt	ND		10.0	1	05/28/2020 20:05	WG1481516
Lithium	29.6		15.0	1	05/28/2020 20:05	WG1481516
Molybdenum	10.7		5.00	1	05/28/2020 20:05	WG1481516

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/28/2020 19:59	WG1481528
Arsenic	ND		2.00	1	05/28/2020 19:59	WG1481528
Beryllium	ND		2.00	1	05/29/2020 09:15	WG1481528
Cadmium	ND		1.00	1	05/28/2020 19:59	WG1481528
Lead	ND		5.00	1	05/28/2020 19:59	WG1481528
Selenium	ND		2.00	1	05/28/2020 19:59	WG1481528
Thallium	ND		2.00	1	05/28/2020 19:59	WG1481528

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/26/2020 21:52	WG1481091

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	187		5.00	1	05/28/2020 20:13	WG1481516
Chromium	ND		10.0	1	05/28/2020 20:13	WG1481516
Cobalt	ND		10.0	1	05/28/2020 20:13	WG1481516
Lithium	21.7		15.0	1	05/28/2020 20:13	WG1481516
Molybdenum	24.6		5.00	1	05/28/2020 20:13	WG1481516

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/28/2020 20:02	WG1481528
Arsenic	ND		2.00	1	05/28/2020 20:02	WG1481528
Beryllium	ND		2.00	1	05/29/2020 09:19	WG1481528
Cadmium	ND		1.00	1	05/28/2020 20:02	WG1481528
Lead	ND		5.00	1	05/28/2020 20:02	WG1481528
Selenium	ND		2.00	1	05/28/2020 20:02	WG1481528
Thallium	ND		2.00	1	05/28/2020 20:02	WG1481528

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	05/26/2020 20:59	WG1481091

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Barium	88.7	O1	5.00	1	05/28/2020 19:47	WG1481516
Chromium	ND		10.0	1	05/28/2020 19:47	WG1481516
Cobalt	ND		10.0	1	05/28/2020 19:47	WG1481516
Lithium	ND		15.0	1	05/28/2020 19:47	WG1481516
Molybdenum	184		5.00	1	05/28/2020 19:47	WG1481516

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	ND		4.00	1	05/28/2020 16:19	WG1481528
Arsenic	ND		2.00	1	05/28/2020 16:19	WG1481528
Beryllium	ND		2.00	1	05/28/2020 16:19	WG1481528
Cadmium	ND		1.00	1	05/28/2020 16:19	WG1481528
Lead	ND		5.00	1	05/28/2020 16:19	WG1481528
Selenium	ND		2.00	1	05/28/2020 16:19	WG1481528
Thallium	ND		2.00	1	05/28/2020 16:19	WG1481528

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/26/2020 21:54	WG1481091

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	380		5.00	1	05/28/2020 20:15	WG1481516
Chromium	ND		10.0	1	05/28/2020 20:15	WG1481516
Cobalt	ND		10.0	1	05/28/2020 20:15	WG1481516
Lithium	24.6		15.0	1	05/28/2020 20:15	WG1481516
Molybdenum	11.5		5.00	1	05/28/2020 20:15	WG1481516

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/28/2020 20:05	WG1481528
Arsenic	ND		2.00	1	05/28/2020 20:05	WG1481528
Beryllium	ND		2.00	1	05/29/2020 09:22	WG1481528
Cadmium	ND		1.00	1	05/28/2020 20:05	WG1481528
Lead	ND		5.00	1	05/28/2020 20:05	WG1481528
Selenium	ND		2.00	1	05/28/2020 20:05	WG1481528
Thallium	ND		2.00	1	05/28/2020 20:05	WG1481528

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/26/2020 21:56	WG1481091

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	87.5		5.00	1	05/28/2020 20:18	WG1481516
Chromium	ND		10.0	1	05/28/2020 20:18	WG1481516
Cobalt	ND		10.0	1	05/28/2020 20:18	WG1481516
Lithium	ND		15.0	1	05/28/2020 20:18	WG1481516
Molybdenum	183		5.00	1	05/28/2020 20:18	WG1481516

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	05/28/2020 20:09	WG1481528
Arsenic	ND		2.00	1	05/28/2020 20:09	WG1481528
Beryllium	ND		2.00	1	05/29/2020 09:26	WG1481528
Cadmium	ND		1.00	1	05/28/2020 20:09	WG1481528
Lead	ND		5.00	1	05/28/2020 20:09	WG1481528
Selenium	ND		2.00	1	05/28/2020 20:09	WG1481528
Thallium	ND		2.00	1	05/28/2020 20:09	WG1481528

Method Blank (MB)

(MB) R3531924-1 05/26/20 20:55

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

Laboratory Control Sample (LCS)

(LCS) R3531924-4 05/26/20 21:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	3.00	2.80	93.3	80.0-120	

L1221405-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221405-09 05/26/20 20:59 • (MS) R3531924-2 05/26/20 21:01 • (MSD) R3531924-3 05/26/20 21:02

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 %
Mercury	3.00	ND	2.28	2.25	75.9	75.2	1	75.0-125			1.02	20

Method Blank (MB)

(MB) R3532807-1 05/28/20 18:27

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Barium	U		0.895	5.00
Chromium	U		5.00	10.0
Cobalt	U		0.807	10.0
Lithium	6.36	J	5.74	15.0
Molybdenum	U		1.04	5.00

Laboratory Control Sample (LCS)

(LCS) R3532807-2 05/28/20 18:30

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	1000	990	99.0	80.0-120	
Chromium	1000	983	98.3	80.0-120	
Cobalt	1000	1010	101	80.0-120	
Lithium	1000	962	96.2	80.0-120	
Molybdenum	1000	997	99.7	80.0-120	

Method Blank (MB)

(MB) R3532814-1 05/28/20 19:42

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

Laboratory Control Sample (LCS)

(LCS) R3532814-2 05/28/20 19:44

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Barium	1000	973	97.3	80.0-120	
Chromium	1000	932	93.2	80.0-120	
Cobalt	1000	954	95.4	80.0-120	
Lithium	1000	924	92.4	80.0-120	
Molybdenum	1000	958	95.8	80.0-120	

L1221405-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221405-09 05/28/20 19:47 • (MS) R3532814-4 05/28/20 19:52 • (MSD) R3532814-5 05/28/20 19:55

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	%	%		%			%	%
Barium	1000	88.7	1070	1040	97.7	94.8	1	75.0-125			2.79	20
Chromium	1000	ND	948	921	94.8	92.1	1	75.0-125			2.88	20
Cobalt	1000	ND	1010	985	101	98.5	1	75.0-125			2.87	20
Lithium	1000	ND	939	908	92.8	89.7	1	75.0-125			3.27	20
Molybdenum	1000	184	1160	1140	98.1	95.8	1	75.0-125			1.99	20

L1221443-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221443-04 05/28/20 19:57 • (MS) R3532814-6 05/28/20 20:00 • (MSD) R3532814-7 05/28/20 20:02

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	223	1190	1200	96.7	97.6	1	75.0-125			0.762	20
Chromium	1000	ND	939	949	93.9	94.9	1	75.0-125			1.01	20
Cobalt	1000	ND	983	993	98.3	99.3	1	75.0-125			1.10	20
Lithium	1000	39.4	986	989	94.6	94.9	1	75.0-125			0.273	20
Molybdenum	1000	ND	974	984	97.2	98.2	1	75.0-125			0.973	20

Method Blank (MB)

(MB) R3533204-1 05/29/20 16:38

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

Laboratory Control Sample (LCS)

(LCS) R3533204-2 05/29/20 16:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	50.0	47.4	94.8	80.0-120	
Arsenic	50.0	46.4	92.8	80.0-120	
Beryllium	50.0	45.9	91.9	80.0-120	
Cadmium	50.0	49.9	99.8	80.0-120	
Lead	50.0	49.1	98.2	80.0-120	
Selenium	50.0	47.2	94.4	80.0-120	
Thallium	50.0	48.0	96.0	80.0-120	

L1221261-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221261-01 05/29/20 16:45 • (MS) R3533204-4 05/29/20 16:51 • (MSD) R3533204-5 05/29/20 16:55

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	50.0	ND	48.3	47.6	96.7	95.3	1	75.0-125			1.49	20
Arsenic	50.0	3.05	51.2	49.4	96.4	92.7	1	75.0-125			3.69	20
Beryllium	50.0	ND	46.9	45.9	93.8	91.8	1	75.0-125			2.13	20
Cadmium	50.0	ND	52.0	50.8	104	102	1	75.0-125			2.41	20
Lead	50.0	ND	51.9	51.1	104	102	1	75.0-125			1.45	20
Selenium	50.0	ND	49.4	48.0	98.8	96.0	1	75.0-125			2.81	20
Thallium	50.0	ND	48.9	47.1	97.7	94.1	1	75.0-125			3.72	20

Method Blank (MB)

(MB) R3532742-1 05/28/20 16:12

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

Laboratory Control Sample (LCS)

(LCS) R3532742-2 05/28/20 16:15

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	50.0	46.9	93.7	80.0-120	
Arsenic	50.0	46.5	93.0	80.0-120	
Beryllium	50.0	46.3	92.7	80.0-120	
Cadmium	50.0	51.9	104	80.0-120	
Lead	50.0	49.3	98.5	80.0-120	
Selenium	50.0	49.5	98.9	80.0-120	
Thallium	50.0	47.3	94.7	80.0-120	

L1221405-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221405-09 05/28/20 16:19 • (MS) R3532742-4 05/28/20 16:25 • (MSD) R3532742-5 05/28/20 16:28

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	50.0	ND	48.4	49.5	96.7	99.0	1	75.0-125			2.33	20
Arsenic	50.0	ND	48.3	48.2	94.8	94.6	1	75.0-125			0.221	20
Beryllium	50.0	ND	46.2	46.8	92.3	93.5	1	75.0-125			1.31	20
Cadmium	50.0	ND	51.1	51.7	102	103	1	75.0-125			1.06	20
Lead	50.0	ND	48.8	50.2	97.5	100	1	75.0-125			2.80	20
Selenium	50.0	ND	50.6	50.7	101	101	1	75.0-125			0.00162	20
Thallium	50.0	ND	46.6	47.8	93.1	95.6	1	75.0-125			2.66	20

L1221510-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221510-07 05/28/20 16:32 • (MS) R3532742-6 05/28/20 16:35 • (MSD) R3532742-7 05/28/20 16:38

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	50.0	ND	47.0	47.9	94.0	95.9	1	75.0-125			2.01	20
Arsenic	50.0	7.68	54.3	54.5	93.3	93.7	1	75.0-125			0.401	20
Beryllium	50.0	ND	45.0	46.6	89.9	93.2	1	75.0-125			3.54	20
Cadmium	50.0	ND	49.5	49.7	99.1	99.4	1	75.0-125			0.348	20
Lead	50.0	ND	48.5	49.5	97.0	99.1	1	75.0-125			2.07	20
Selenium	50.0	ND	49.4	49.6	98.9	99.3	1	75.0-125			0.444	20
Thallium	50.0	ND	46.9	48.2	93.9	96.5	1	75.0-125			2.76	20

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

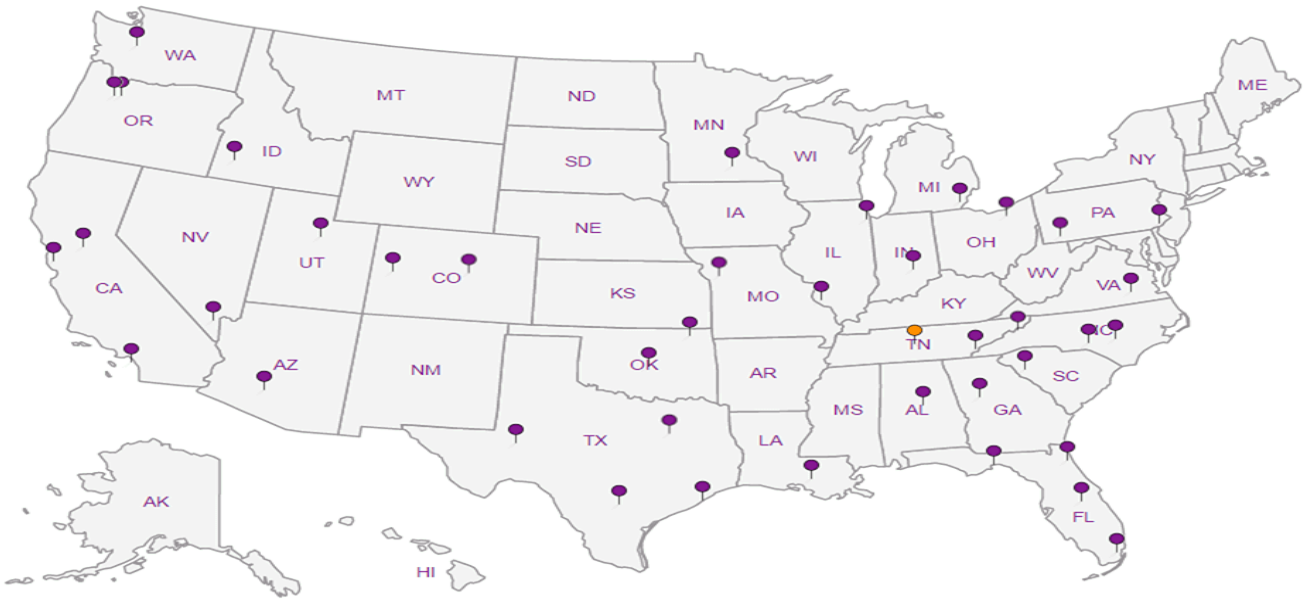
Third Party Federal Accreditations

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

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

Our Locations

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



SCS Engineers - KS 8575 W. 110th Street Overland Park, KS 66210	Billing Information: Accounts Payable 8575 W. 110th Street Overland Park, KS 66210	Pres Chk: LR	Chain of Custody Page 1 of 2 Pace Analytical® National Center for Testing & Innovation 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859
Report to: Jason Franks	Email To: jfranks@scsengineers.com;jay.martin@evergy.c		
Project Description: Evergy - Iatan Gen. Stat - Ash Wells	City/State Collected: Weston, MO	Please Circle: PT MT (CT) ET	SDG # 1221405 G003
Phone: 913-681-0030	Client Project # 27213167.20	Lab Project # AQUAOPKS-IATAN	Acctnum: AQUAOPKS
Collected by (print): Jason R. Franks	Site/Facility ID #	P.O. #	Template: T166952
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	Prelogin: P770299 PM: 206 - Jeff Carr PB:
Immediately Packed on Ice N ___ Y ✓			Shipped Via:

Analysis / Container / Preservative: CCR Metals 250mlHDPE-HNO3

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No of Cntrs	CCR Metals 250mlHDPE-HNO3	Remarks	Sample # (lab only)
MW-101	Grab	GW	–	5/20/20	1350	1	X		-01
MW-102	↓	GW	–	↓	1425	1	X		02
MW-103	↓	GW	–	↓	1515	1	X		03
MW-104	↓	GW	–	↓	1630	1	X		04
MW-105	↓	GW	–	↓	1515	1	X		05
[redacted]									
MW-107	↓	GW	–	↓	1625	1	X		06
MW-108	↓	GW	–	↓	1245	1	X		07
MW-109	↓	GW	–	↓	1300	1	X		08
MW-110	↓	GW	–	↓	1330	1	X		09

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

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

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier __________

Tracking #

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
[signature]	5/21/20	1300	[signature] 5/21/20 1300	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C 4.6+0=4.6 Bottles Received: 12
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 5/22/20 Time: 9:00

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

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

Pres Chk: VC

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

Pace Analytical® National Center for Testing & Innovation

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

Report to: Jason Franks

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

Project Description: Evergy - Iatan Gen. Stat - Ash Wells

City/State Collected: WESTON MO

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project # 27213167.20

Lab Project # AQUAOPKS-IATAN

SDG # 122140S

Table #

Collected by (print): JASON R. FRANKS

Site/Facility ID #

P.O. #

Acctnum: AQUAOPKS

Template: T166952

Prelogin: P770299

PM: 206 - Jeff Carr

PB:

Collected by (signature): Jason R. Franks

Immediately Packed on Ice N ___ Y ___

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

Quote #

Date Results Needed

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CCR Metals 250mlHDPE-HNO3	Remarks	Sample # (lab only)
MW-111	Grab	GW	-	5/20/20	1535	1	X		10
DUPLICATE	↓	GW	-		1420	1	X		11
110 MS/MSD	↓	GW	-	↓	1425	1	X		09

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

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

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist

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

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking #

	Date:	Time:		
Relinquished by : (Signature) Jason R. Franks	5/21/20	1300	Received by: (Signature)	5/21/20 1360
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 4.6 4.6 °C Bottles Received:

If preservation required by Login: Date/Time

Date: 5/22/20 Time: 9:10

Hold:

Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

June 24, 2020

SCS Engineers - KS

Sample Delivery Group:	L1221461
Samples Received:	05/22/2020
Project Number:	27213167.20
Description:	Iantan-Ash Impoundment

Report To:

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

Entire Report Reviewed By:

Jason Romer
Project Manager

Cp: Cover Page 1
Tc: Table of Contents 2
Ss: Sample Summary 3
Cn: Case Narrative 5
Sr: Sample Results 6
MW-101 L1221461-01 6
MW-102 L1221461-02 7
MW-103 L1221461-03 8
MW-104 L1221461-04 9
MW-105 L1221461-05 10
MW-107 L1221461-06 11
MW-108 L1221461-07 12
MW-109 L1221461-08 13
MW-110 L1221461-09 14
MW-111 L1221461-10 15
DUPLICATE L1221461-11 16
Qc: Quality Control Summary 17
Radiochemistry by Method 904 17
Radiochemistry by Method SM7500Ra B M 18
Gl: Glossary of Terms 19
Al: Accreditations & Locations 20
Sc: Sample Chain of Custody 21

MW-101 L1221461-01 Non-Potable Water

Collected by: Jason R. Franks | Collected date/time: 05/20/20 13:50 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1486252	1	06/04/20 15:02	06/10/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1492712	1	06/15/20 14:42	06/16/20 14:55	RGT	Mt. Juliet, TN

MW-102 L1221461-02 Non-Potable Water

Collected by: Jason R. Franks | Collected date/time: 05/20/20 14:25 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1486252	1	06/04/20 15:02	06/10/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1492712	1	06/15/20 14:42	06/16/20 14:55	RGT	Mt. Juliet, TN

MW-103 L1221461-03 Non-Potable Water

Collected by: Jason R. Franks | Collected date/time: 05/20/20 15:15 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1486252	1	06/04/20 15:02	06/10/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1492712	1	06/15/20 14:42	06/16/20 14:41	RGT	Mt. Juliet, TN

MW-104 L1221461-04 Non-Potable Water

Collected by: Jason R. Franks | Collected date/time: 05/20/20 16:30 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1486252	1	06/04/20 15:02	06/10/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1492712	1	06/15/20 14:42	06/16/20 14:41	RGT	Mt. Juliet, TN

MW-105 L1221461-05 Non-Potable Water

Collected by: Jason R. Franks | Collected date/time: 05/20/20 15:15 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1486252	1	06/04/20 15:02	06/10/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1492712	1	06/15/20 14:42	06/16/20 14:41	RGT	Mt. Juliet, TN

MW-107 L1221461-06 Non-Potable Water

Collected by: Jason R. Franks | Collected date/time: 05/20/20 16:25 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1486252	1	06/04/20 15:02	06/10/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1492712	1	06/15/20 14:42	06/16/20 14:41	RGT	Mt. Juliet, TN

MW-108 L1221461-07 Non-Potable Water

Collected by: Jason R. Franks | Collected date/time: 05/20/20 12:15 | Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1486252	1	06/04/20 15:02	06/10/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1492712	1	06/15/20 14:44	06/16/20 14:41	RGT	Mt. Juliet, TN

MW-109 L1221461-08 Non-Potable Water

Collected by: Jason R. Franks
Collected date/time: 05/20/20 13:00
Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1486252	1	06/04/20 15:02	06/10/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1492712	1	06/15/20 14:42	06/16/20 14:41	RGT	Mt. Juliet, TN

MW-110 L1221461-09 Non-Potable Water

Collected by: Jason R. Franks
Collected date/time: 05/20/20 14:20
Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1486252	1	06/04/20 15:02	06/10/20 09:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1492712	1	06/15/20 14:42	06/16/20 14:41	RGT	Mt. Juliet, TN

MW-111 L1221461-10 Non-Potable Water

Collected by: Jason R. Franks
Collected date/time: 05/20/20 15:35
Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1486252	1	06/04/20 15:02	06/11/20 09:38	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1492712	1	06/15/20 14:42	06/16/20 14:41	RGT	Mt. Juliet, TN

DUPLICATE L1221461-11 Non-Potable Water

Collected by: Jason R. Franks
Collected date/time: 05/20/20 14:20
Received date/time: 05/22/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1486252	1	06/04/20 15:02	06/11/20 09:38	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1492712	1	06/15/20 14:42	06/16/20 14:41	RGT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Project Manager

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	6.10		0.712	0.922	06/10/2020 09:40	WG1486252
(T) Barium	*111*			*62.0-143*	*06/10/2020 09:40*	WG1486252
(T) Yttrium	*99.9*			*79.0-136*	*06/10/2020 09:40*	WG1486252

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.561		0.345	0.357	06/16/2020 14:55	WG1492712
(T) Barium-133	*92.9*			*30.0-143*	*06/16/2020 14:55*	WG1492712

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	3.87		0.663	1.35	06/10/2020 09:40	WG1486252
(T) Barium	*72.7*			*62.0-143*	*06/10/2020 09:40*	WG1486252
(T) Yttrium	*103*			*79.0-136*	*06/10/2020 09:40*	WG1486252

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.255		0.256	0.332	06/16/2020 14:55	WG1492712
(T) Barium-133	*91.6*			*30.0-143*	*06/16/2020 14:55*	WG1492712

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.50		0.701	1.1	06/10/2020 09:40	WG1486252
(T) Barium	*111*			*62.0-143*	*06/10/2020 09:40*	WG1486252
(T) Yttrium	*108*			*79.0-136*	*06/10/2020 09:40*	WG1486252

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.635		0.336	0.293	06/16/2020 14:41	WG1492712
(T) Barium-133	*93.8*			*30.0-143*	*06/16/2020 14:41*	WG1492712

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.42		0.582	1.06	06/10/2020 09:40	WG1486252
(T) Barium	*90.1*			*62.0-143*	*06/10/2020 09:40*	WG1486252
(T) Yttrium	*112*			*79.0-136*	*06/10/2020 09:40*	WG1486252

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.389		0.227	0.198	06/16/2020 14:41	WG1492712
(T) Barium-133	*98.0*			*30.0-143*	*06/16/2020 14:41*	WG1492712

Radiochemistry by Method 904

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	-0.118		0.753	0.865	06/10/2020 09:40	WG1486252
(T) Barium	*114*			*62.0-143*	*06/10/2020 09:40*	WG1486252
(T) Yttrium	*105*			*79.0-136*	*06/10/2020 09:40*	WG1486252

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.169		0.240	0.344	06/16/2020 14:41	WG1492712
(T) Barium-133	*91.2*			*30.0-143*	*06/16/2020 14:41*	WG1492712

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.24		0.746	0.84	06/10/2020 09:40	WG1486252
(T) Barium	*97.9*			*62.0-143*	*06/10/2020 09:40*	WG1486252
(T) Yttrium	*100*			*79.0-136*	*06/10/2020 09:40*	WG1486252

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.119		0.173	0.261	06/16/2020 14:41	WG1492712
(T) Barium-133	*89.8*			*30.0-143*	*06/16/2020 14:41*	WG1492712

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.304		0.658	0.76	06/10/2020 09:40	WG1486252
(T) Barium	*108*			*62.0-143*	*06/10/2020 09:40*	WG1486252
(T) Yttrium	*111*			*79.0-136*	*06/10/2020 09:40*	WG1486252

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0334		0.237	0.381	06/16/2020 14:41	WG1492712
(T) Barium-133	*93.3*			*30.0-143*	*06/16/2020 14:41*	WG1492712

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.979		0.707	0.822	06/10/2020 09:40	WG1486252
(T) Barium	*113*			*62.0-143*	*06/10/2020 09:40*	WG1486252
(T) Yttrium	*110*			*79.0-136*	*06/10/2020 09:40*	WG1486252

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.214		0.228	0.3	06/16/2020 14:41	WG1492712
(T) Barium-133	*83.4*			*30.0-143*	*06/16/2020 14:41*	WG1492712

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.35		0.834	1.05	06/10/2020 09:40	WG1486252
(T) Barium	*98.5*			*62.0-143*	*06/10/2020 09:40*	WG1486252
(T) Yttrium	*112*			*79.0-136*	*06/10/2020 09:40*	WG1486252

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0610		0.116	0.201	06/16/2020 14:41	WG1492712
(T) Barium-133	*86.6*			*30.0-143*	*06/16/2020 14:41*	WG1492712

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.692		0.634	0.91	06/11/2020 09:38	WG1486252
(T) Barium	*112*			*62.0-143*	*06/11/2020 09:38*	WG1486252
(T) Yttrium	*109*			*79.0-136*	*06/11/2020 09:38*	WG1486252

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.550		0.302	0.241	06/16/2020 14:41	WG1492712
(T) Barium-133	*89.5*			*30.0-143*	*06/16/2020 14:41*	WG1492712

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.143		0.556	0.759	06/11/2020 09:38	WG1486252
(T) Barium	*112*			*62.0-143*	*06/11/2020 09:38*	WG1486252
(T) Yttrium	*106*			*79.0-136*	*06/11/2020 09:38*	WG1486252

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.327		0.300	0.378	06/16/2020 14:41	WG1492712
(T) Barium-133	*94.4*			*30.0-143*	*06/16/2020 14:41*	WG1492712

Method Blank (MB)

(MB) R3537859-1 06/10/20 09:40

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-228	0.166		0.468
(T) Barium	*123*		
(T) Yttrium	*101*		

L1224651-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1224651-01 06/11/20 09:38 • (DUP) R3537859-5 06/10/20 09:40

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	0.274	1.54	1	140	1.38		20	3
(T) Barium	*95.1*	*92.6*						
(T) Yttrium	*115*	*96.1*						

Laboratory Control Sample (LCS)

(LCS) R3537859-2 06/10/20 09:40

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.74	115	80.0-120	
(T) Barium			*104*		
(T) Yttrium			*106*		

L1221461-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221461-09 06/10/20 09:40 • (MS) R3537859-3 06/10/20 09:40 • (MSD) R3537859-4 06/10/20 09:40

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	10.0	1.35	14.4	12.1	130	107	1	70.0-130			17.4		20
(T) Barium		*98.5*			*115*	*104*							
(T) Yttrium		*112*			*94.6*	*104*							

Method Blank (MB)

(MB) R3541294-1 06/16/20 14:55

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-226	0.0134		0.0555
(T) Barium-133	*87.1*		

L1222911-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1222911-04 06/16/20 14:41 • (DUP) R3541294-5 06/16/20 14:55

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	0.562	0.340	1	49.4	0.521		20	3
(T) Barium-133	*91.2*	*94.7*						

Laboratory Control Sample (LCS)

(LCS) R3541294-2 06/16/20 14:55

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	5.23	104	80.0-120	
(T) Barium-133			*86.4*		

L1221461-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1221461-09 06/16/20 14:41 • (MS) R3541294-3 06/16/20 14:55 • (MSD) R3541294-4 06/16/20 14:55

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.1	0.0610	22.2	21.4	110	106	1	75.0-125			3.85		20
(T) Barium-133		*86.6*			*90.5*	*92.2*							

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description

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

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

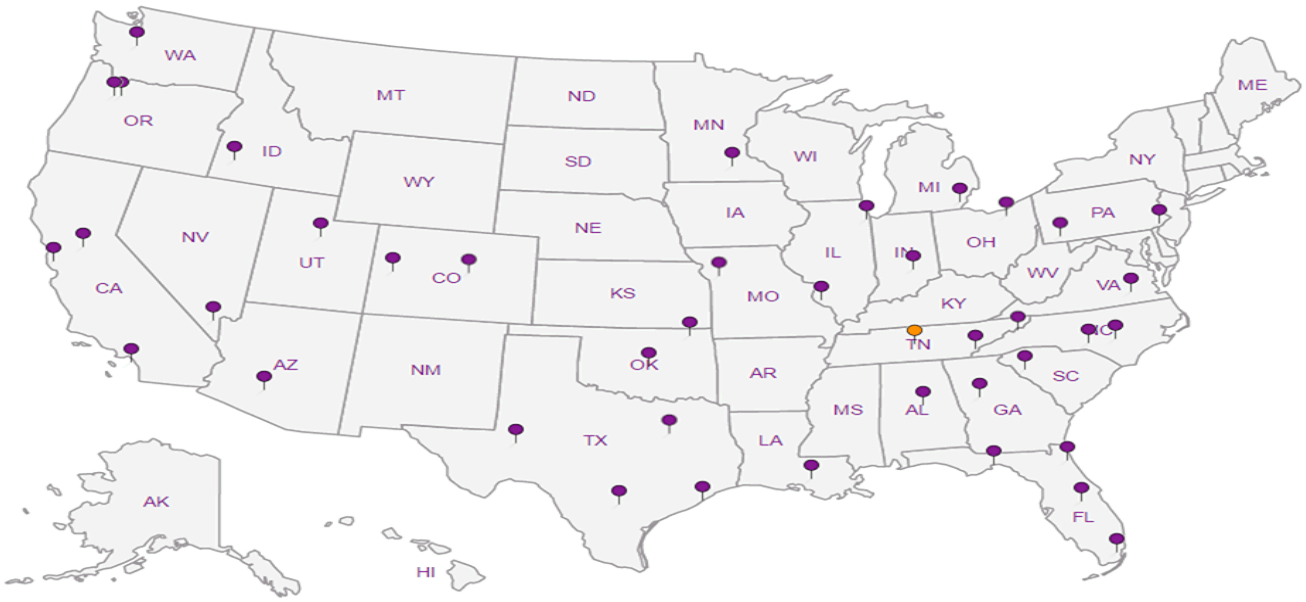
Third Party Federal Accreditations

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

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

Our Locations

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



SCS Engineers
8575 W. 110th Street
Overland Park, KS 66210

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

Report to: **Jason Franks**

Email To: **jfranks@scsengineers.com**

Project Description: **Iatan-Ash Impoundment**

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

Please Circle: PT MT CT ET

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

Client Project # **27213167.20**

Lab Project # **AQUAOPKS-IATAN**

Collected by (print): **Jason R. Franks**

Site/Facility ID #

P.O. #

Collected by (signature): **Jason R. Franks**

Immediately Packed on Ice N ___ Y ___

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

Quote #

Date Results Needed

Analysis / Container / Preservative

Pres Chk

RA226, RA228 1L-HDPE- Add HNO3

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs		Remarks	Sample # (lab only)
MW-101	GRAB	GW	-	5/20/20	1350	2	X		-01
MW-102			-		1425	2	X		02
MW-103			-		1515	2	X		03
MW-104			-		1630	2	X		04
MW-105			-		1515	2	X		05
MW-107			-		1625	2	X		06
MW-108			-		1215	2	X		07
MW-109			-		1300	2	X		08
MW-110			-		1420	2	X		09
MW-111			-		1535	2	X		10

Chain of Custody Page 1 of 2

Pace Analytical® National Center for Testing & Innovation

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

SDG # 122146 1
G011

Acctnum: **AQUAOPKS**
Template:
Prelogin:
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

	Date:	Time:		
Relinquished by : (Signature) Jason R. Franks	5/21/20	1700	Received by: (Signature)	5-21-20 1300
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/22/20 Time: 9:00

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 4.6 to 4.6 °C Bottles Received: 24

If preservation required by Login: Date/Time

Hold: Condition NCF / OK

SCS Engineers
8575 W. 110th Street
Overland Park, KS 66210

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

Report to: **Jason Franks**

Email To: **jfranks@scsengineers.com**

Project Description: **Iatan-Ash Impoundment**

City/State Collected: Weston, MO

Please Circle: PT MT CT ET

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

Client Project # **27213167.20**

Lab Project # **AQUAOPKS-IATAN**

Collected by (print): Jason R. Franks

Collected by (signature): Jason R. Franks

Immediately Packed on Ice N ___ Y ___

Site/Facility ID #

P.O. #

Quote #

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

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	RA226, RA228 1L-HDPE- Add HNO3	Remarks	Sample # (lab only)
Duplicate	Grab	GW	-	5/20/20	1420	2	X		12
110 MS/MSD	1	↓	-	↓	1425	2	X		69

Analysis / Container / Preservative

Pres Chk 12

Chain of Custody Page 2 of 2

Pace Analytical® National Center for Testing & Innovation

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

SDG # 122461

Table #

Acctnum: **AQUAOPKS**

Template:

Prelogin:

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
Jason R. Franks	5/21/20	1300	Alan Hilsa 5/21/20 1300	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.6 +0 =4.6 °C Bottles Received: 24
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Paul C Kemp	Date: 5/22/20 Time: 9:00

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

Spring 2019 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

August 17, 2019

To: Iatan Generating Station
20250 State Route 45 N
Platte County, Missouri
Kansas City Power & Light Company

From: SCS Engineers

RE: Determination of Statistically Significant Increases – Ash Impoundment
Spring 2019 Initial Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the Ash Impoundment at the Iatan Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated April 16, 2019. The initial detection monitoring sampling event was scheduled for March 2019; however, the historic flooding of the Missouri River in March prevented the sampling event until flood waters receded and the sampling event was performed April 29, 2019. Review and validation of the results from the April 2019 Detection Monitoring Event was completed on June 27, 2019, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on May 20, 2019 and July 23, 2019. The second verification sample was not collected until July because of additional flooding in June 2019.

The completed statistical evaluation identified one Appendix III constituents above its respective prediction limit. The prediction limit for chloride in monitoring well MW-107 is 25.9 mg/L. The detection monitoring sample was reported at 33.3 mg/L. The first verification re-sample was collected on May 20, 2019 with a result of 34.2 mg/L. The second verification re-sample was collected on July 23, 2019 with a result of 34.3 mg/L.

Therefore, in accordance with the Statistical Method Certification, the detection monitoring sample for chloride from monitoring well MW-107 exceeds its prediction limit and is a confirmed statistically significant increase (SSI) over background.

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified an SSI above the background prediction limit for chloride in monitoring well MW-107.

Attached to this memorandum are the following backup information:

Attachment 1: Sanitas™ Output:

Statistical evaluation output from Sanitas™ for the prediction limit analysis. This includes prediction limit plots, prediction limit background data, detection sample result, 1st verification re-sample result (when applicable), 2nd verification re-sample result (when applicable), extra sample results for pH because pH is collected as part of the sampling procedure, and a Prediction Limit summary table. Output documentation includes the analytical data used for the statistical analyses.

Attachment 2: Sanitas™ Configuration Settings:

Screen shots of the applicable Sanitas™ configuration settings for the statistical prediction limit analysis. This includes data configuration, output configuration, prediction limit configuration and other tests configuration.

Revision Number	Revision Date	Attachment Revised	Summary of Revisions

Iatan Generating Station
Determination of Statistically Significant Increases
Ash Impoundment
August 17, 2019

ATTACHMENT 1

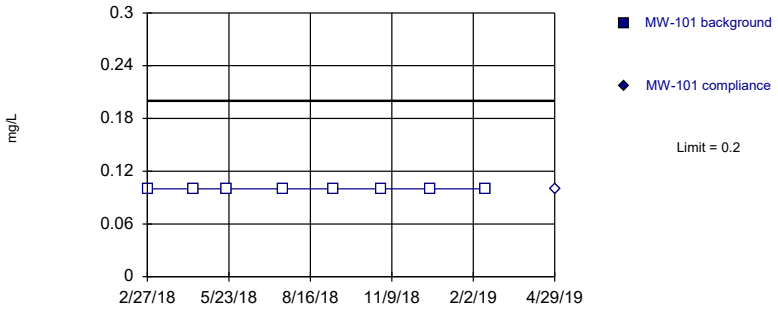
Sanitas™ Output

Sanitas™ v.9.6.18 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 = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

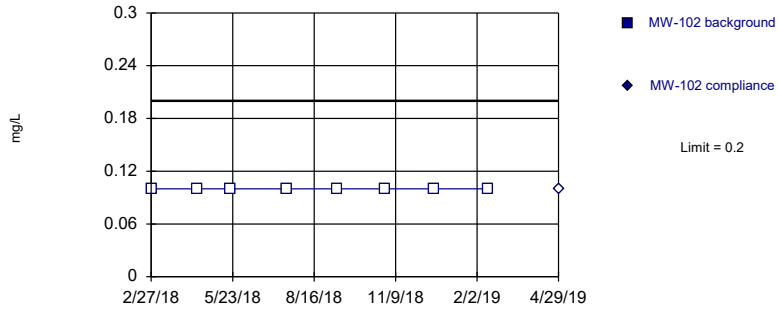
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 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 = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

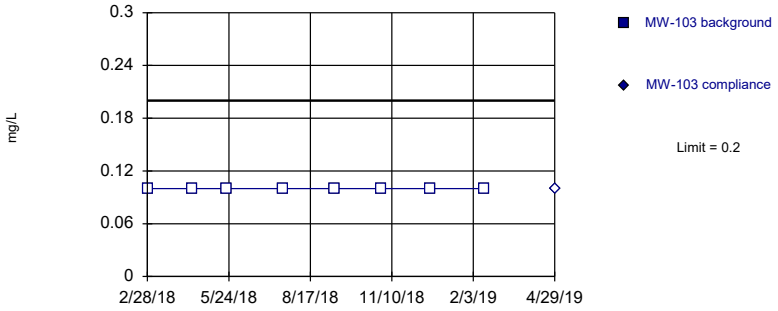
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 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 = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

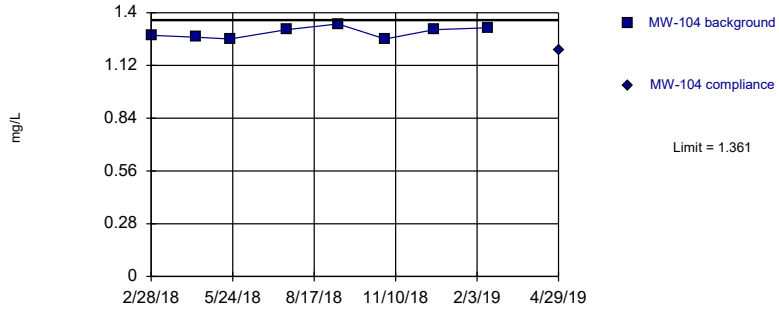
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.294, Std. Dev.=0.03021, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9056, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Boron Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

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

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-101	MW-101
2/27/2018	<0.2	
4/16/2018	<0.2	
5/21/2018	<0.2	
7/19/2018	<0.2	
9/10/2018	<0.2	
10/30/2018	<0.2	
12/20/2018	<0.2	
2/15/2019	<0.2	
4/29/2019		<0.2

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-102	MW-102
2/27/2018	<0.2	
4/16/2018	<0.2	
5/21/2018	<0.2	
7/19/2018	<0.2	
9/10/2018	<0.2	
10/30/2018	<0.2	
12/20/2018	<0.2	
2/14/2019	<0.2	
4/29/2019		<0.2

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-103	MW-103
2/28/2018	<0.2	
4/16/2018	<0.2	
5/21/2018	<0.2	
7/19/2018	<0.2	
9/11/2018	<0.2	
10/30/2018	<0.2	
12/20/2018	<0.2	
2/14/2019	<0.2	
4/29/2019		<0.2

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

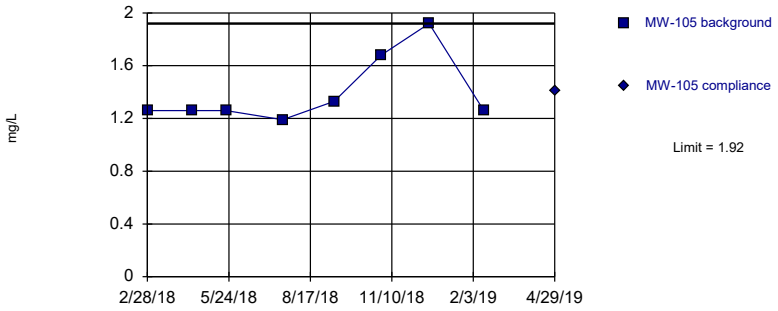
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-104	MW-104
2/28/2018	1.28	
4/16/2018	1.27	
5/21/2018	1.26	
7/19/2018	1.31	
9/11/2018	1.34	
10/30/2018	1.26	
12/20/2018	1.31	
2/14/2019	1.32	
4/29/2019		1.2

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

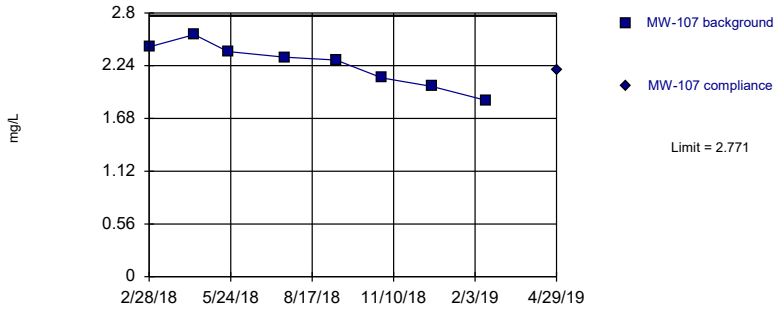
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.254, Std. Dev.=0.2342, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9601, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Boron Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

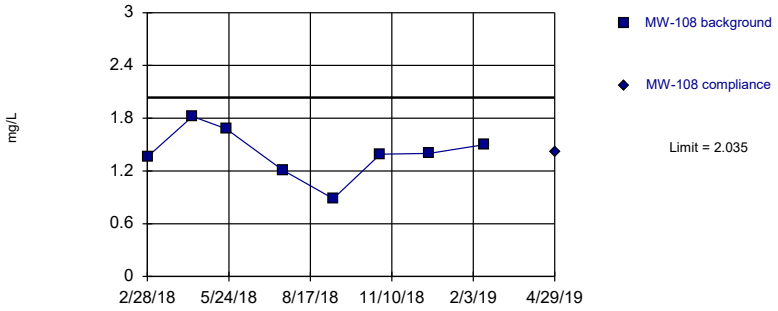
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.406, Std. Dev.=0.2847, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9636, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Boron Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

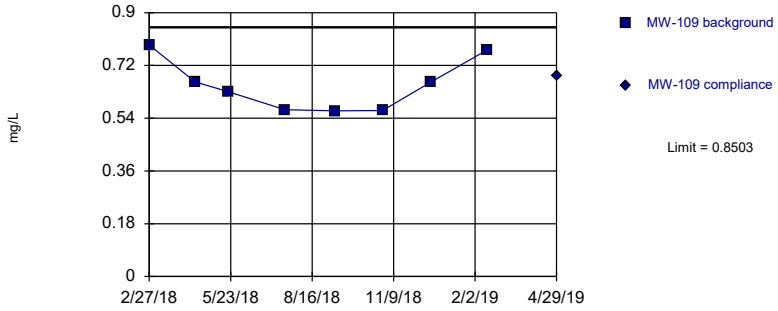
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.6525, Std. Dev.=0.0895, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8618, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Boron Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

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

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-105	MW-105
2/28/2018	1.26	
4/16/2018	1.26	
5/21/2018	1.26	
7/19/2018	1.19	
9/11/2018	1.33	
10/30/2018	1.68	
12/19/2018	1.92	
2/14/2019	1.26	
4/29/2019		1.41

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-107	MW-107
2/28/2018	2.44	
4/16/2018	2.57	
5/21/2018	2.39	
7/19/2018	2.33	
9/11/2018	2.3	
10/29/2018	2.11	
12/20/2018	2.02	
2/15/2019	1.87	
4/29/2019		2.2

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-108	MW-108
2/28/2018	1.36	
4/16/2018	1.82	
5/21/2018	1.68	
7/19/2018	1.21	
9/10/2018	0.885	
10/29/2018	1.39	
12/19/2018	1.4	
2/15/2019	1.5	
4/29/2019		1.41

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

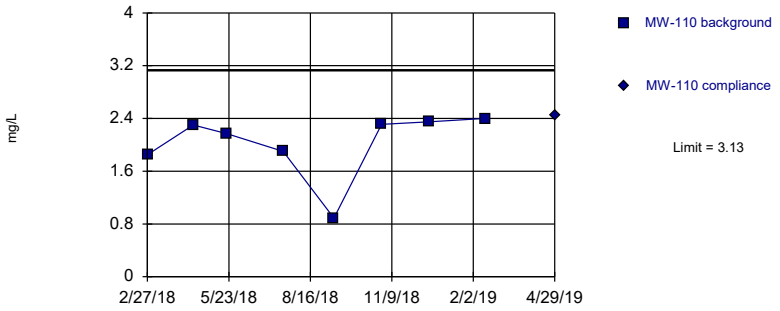
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-109	MW-109
2/27/2018	0.79	
4/16/2018	0.664	
5/21/2018	0.63	
7/19/2018	0.569	
9/10/2018	0.565	
10/29/2018	0.566	
12/19/2018	0.664	
2/15/2019	0.772	
4/29/2019		0.684

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.021, Std. Dev.=0.5019, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7528, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Boron Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

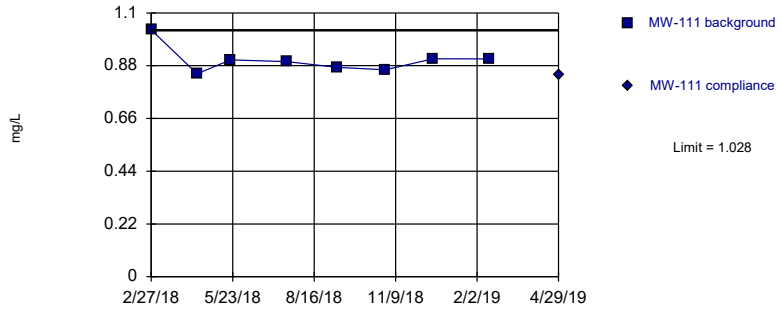
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.9038, Std. Dev.=0.05602, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7979, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Boron Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

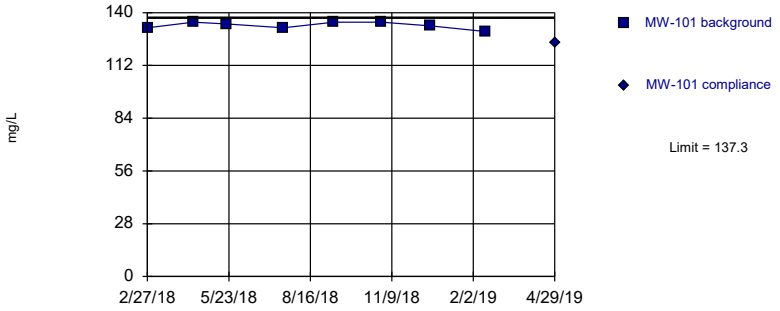
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=133.3, Std. Dev.=1.832, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8826, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

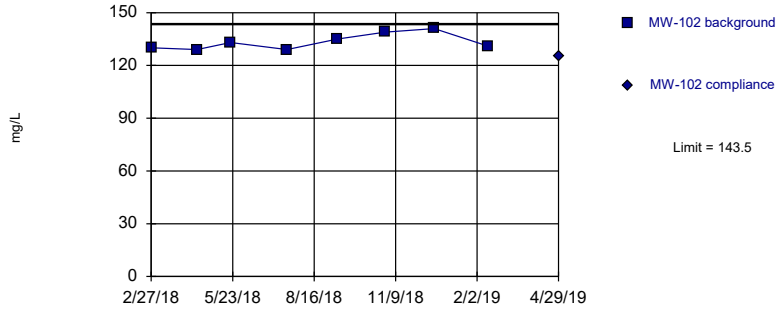
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=133.4, Std. Dev.=4.596, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8804, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

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

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-110	MW-110
2/27/2018	1.85	
4/16/2018	2.3	
5/21/2018	2.17	
7/19/2018	1.9	
9/10/2018	0.888	
10/30/2018	2.31	
12/19/2018	2.35	
2/15/2019	2.4	
4/29/2019		2.45

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-111	MW-111
2/27/2018	1.03	
4/16/2018	0.846	
5/21/2018	0.904	
7/19/2018	0.897	
9/10/2018	0.873	
10/30/2018	0.863	
12/19/2018	0.909	
2/15/2019	0.908	
4/29/2019		0.843

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-101	MW-101
2/27/2018	132	
4/16/2018	135	
5/21/2018	134	
7/19/2018	132	
9/10/2018	135	
10/30/2018	135	
12/20/2018	133	
2/15/2019	130	
4/29/2019		124

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

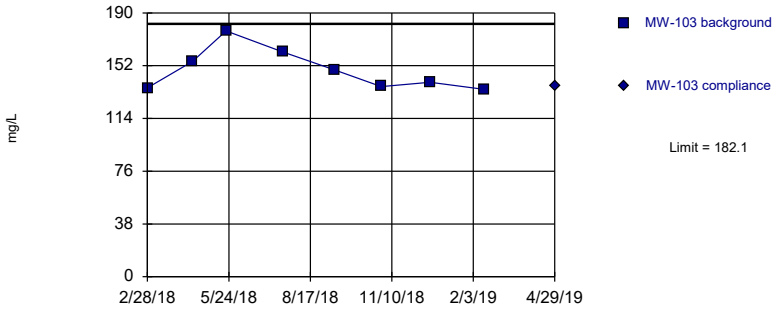
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-102	MW-102
2/27/2018	130	
4/16/2018	129	
5/21/2018	133	
7/19/2018	129	
9/10/2018	135	
10/30/2018	139	
12/20/2018	141	
2/14/2019	131	
4/29/2019		125

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=148.9, Std. Dev.=15.02, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8806, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

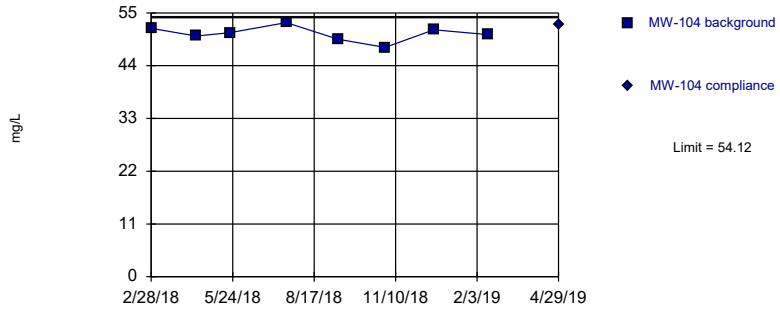
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=50.65, Std. Dev.=1.572, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.983, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

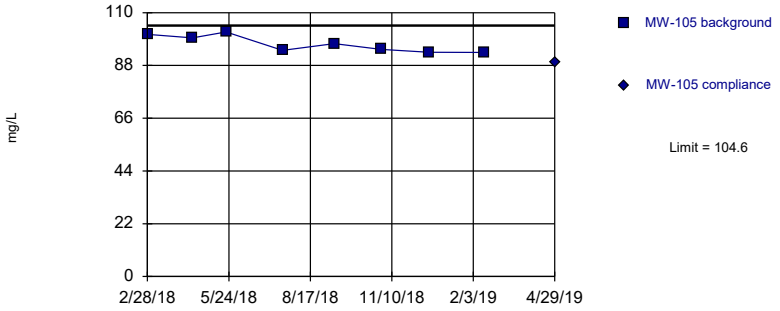
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=96.94, Std. Dev.=3.485, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8737, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

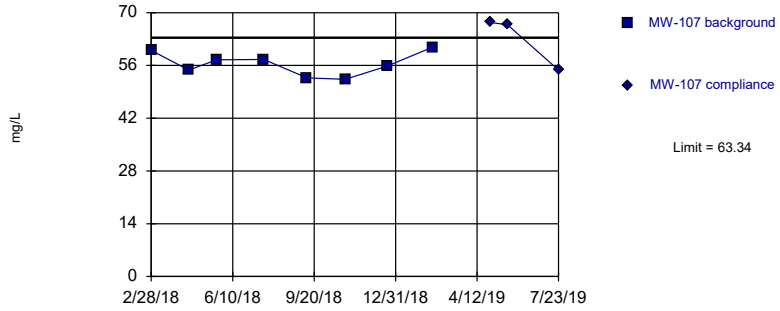
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=56.44, Std. Dev.=3.125, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9447, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

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

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-103	MW-103
2/28/2018	136	
4/16/2018	155	
5/21/2018	177	
7/19/2018	162	
9/11/2018	149	
10/30/2018	137	
12/20/2018	140	
2/14/2019	135	
4/29/2019		137

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-104	MW-104
2/28/2018	51.8	
4/16/2018	50.2	
5/21/2018	50.9	
7/19/2018	53	
9/11/2018	49.5	
10/30/2018	47.8	
12/20/2018	51.5	
2/14/2019	50.5	
4/29/2019		52.6

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-105	MW-105
2/28/2018	101	
4/16/2018	99.5	
5/21/2018	102	
7/19/2018	94.3	
9/11/2018	97.1	
10/30/2018	94.7	
12/19/2018	93.5	
2/14/2019	93.4	
4/29/2019		89.4

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

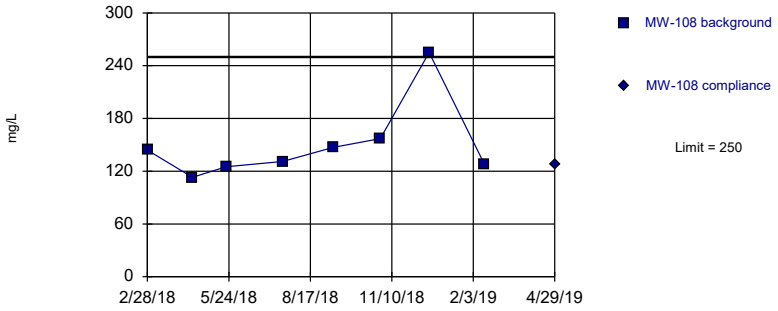
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-107	MW-107	
2/28/2018	60		
4/16/2018	54.8		
5/21/2018	57.5		
7/19/2018	57.6		
9/11/2018	52.7		
10/29/2018	52.3		
12/20/2018	55.8		
2/15/2019	60.8		
4/29/2019		67.4	
5/20/2019		66.8	1st verification sample
7/23/2019		54.8	2nd verification sample

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=12.14, Std. Dev.=1.659, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7644, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

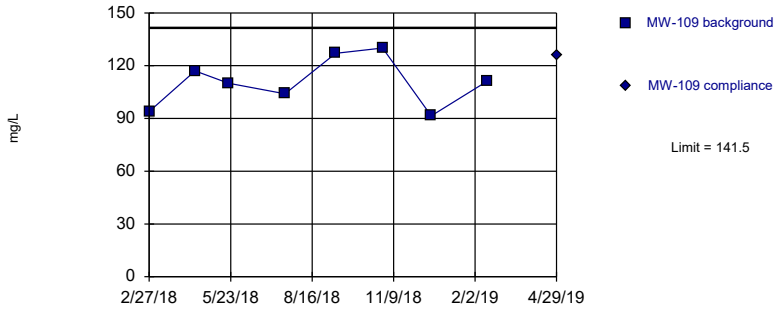
Constituent: Calcium Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

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

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=110.6, Std. Dev.=14.01, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9482, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

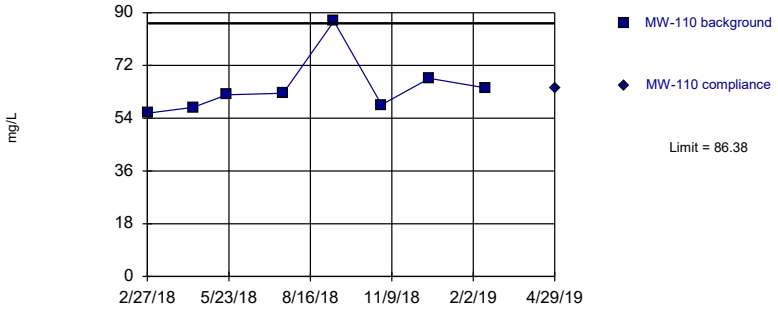
Constituent: Calcium Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

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

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=64.45, Std. Dev.=9.922, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7794, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

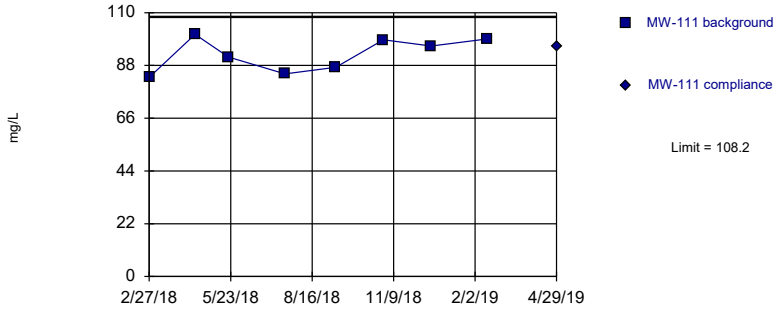
Constituent: Calcium Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

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

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=92.63, Std. Dev.=7.062, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9018, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

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

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-108	MW-108
2/28/2018	144	
4/16/2018	113	
5/21/2018	125	
7/19/2018	131	
9/10/2018	147	
10/29/2018	157	
12/19/2018	255	
2/15/2019	127	
4/29/2019		128

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-109	MW-109
2/27/2018	93.9	
4/16/2018	117	
5/21/2018	110	
7/19/2018	104	
9/10/2018	127	
10/29/2018	130	
12/19/2018	91.5	
2/15/2019	111	
4/29/2019		126

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-110	MW-110
2/27/2018	55.7	
4/16/2018	57.7	
5/21/2018	62	
7/19/2018	62.5	
9/10/2018	87.1	
10/30/2018	58.6	
12/19/2018	67.6	
2/15/2019	64.4	
4/29/2019		64.1

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

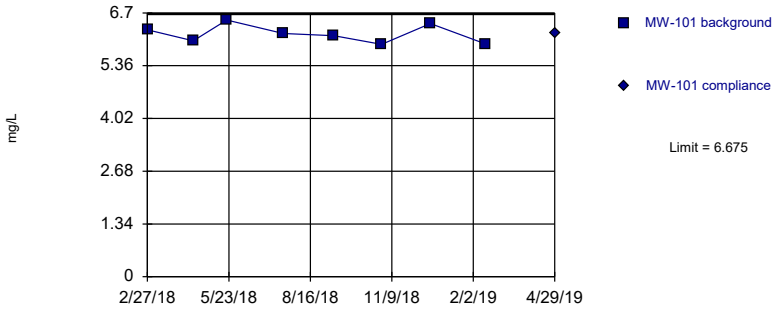
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-111	MW-111
2/27/2018	83	
4/16/2018	101	
5/21/2018	91.5	
7/19/2018	84.5	
9/10/2018	87.2	
10/30/2018	98.7	
12/19/2018	96.1	
2/15/2019	99	
4/29/2019		95.9

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.166, Std. Dev.=0.23, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9359, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Chloride Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

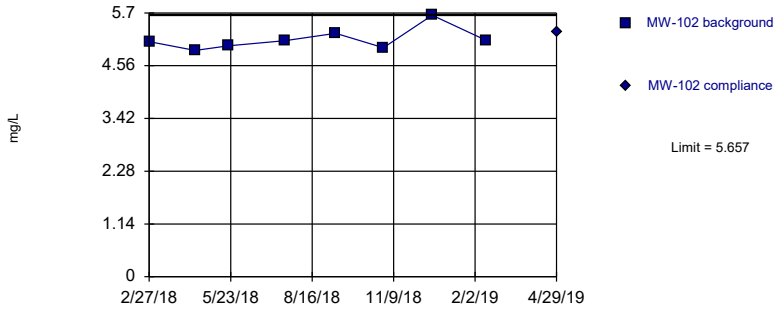
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=5.129, Std. Dev.=0.2393, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8398, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Chloride Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

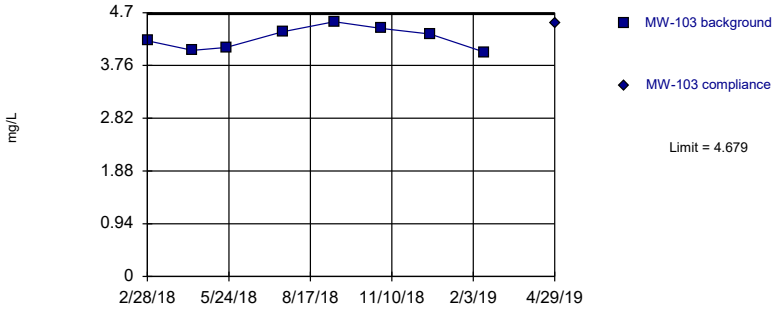
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=4.244, Std. Dev.=0.1971, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9404, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Chloride Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

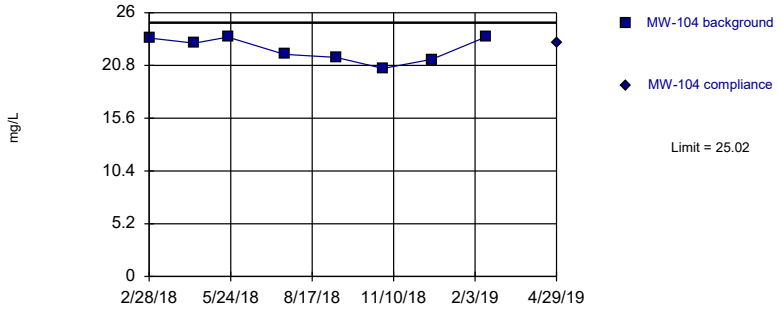
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=22.39, Std. Dev.=1.192, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8837, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Chloride Analysis Run 8/1/2019 8:49 AM View: Ash Impound III

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

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-101	MW-101
2/27/2018	6.27	
4/16/2018	5.99	
5/21/2018	6.52	
7/19/2018	6.18	
9/10/2018	6.12	
10/30/2018	5.9	
12/20/2018	6.43	
2/15/2019	5.92	
4/29/2019		6.19

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-102	MW-102
2/27/2018	5.08	
4/16/2018	4.89	
5/21/2018	4.99	
7/19/2018	5.1	
9/10/2018	5.26	
10/30/2018	4.95	
12/20/2018	5.65	
2/14/2019	5.11	
4/29/2019		5.29

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-103	MW-103
2/28/2018	4.2	
4/16/2018	4.03	
5/21/2018	4.08	
7/19/2018	4.36	
9/11/2018	4.54	
10/30/2018	4.42	
12/20/2018	4.32	
2/14/2019	4	
4/29/2019		4.51

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

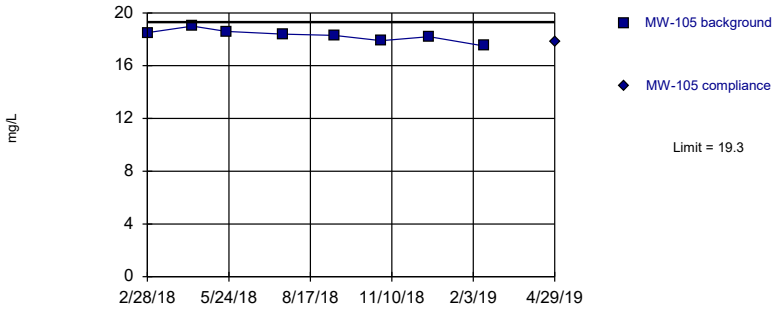
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-104	MW-104
2/28/2018	23.5	
4/16/2018	23	
5/21/2018	23.6	
7/19/2018	21.9	
9/11/2018	21.6	
10/30/2018	20.5	
12/20/2018	21.4	
2/14/2019	23.6	
4/29/2019		23

Within Limit

Prediction Limit

Intrawell Parametric



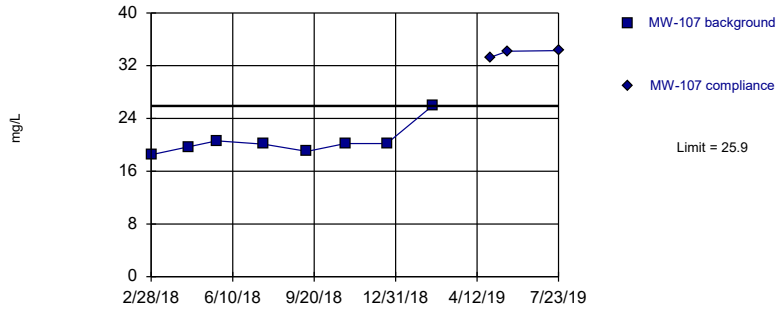
Background Data Summary: Mean=18.3, Std. Dev.=0.4536, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9787, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Chloride Analysis Run 8/1/2019 8:49 AM View: Ash Impound III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Exceeds Limit

Prediction Limit

Intrawell Non-parametric



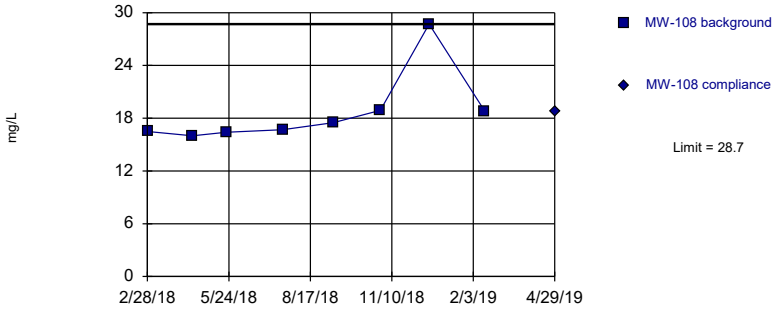
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chloride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Non-parametric



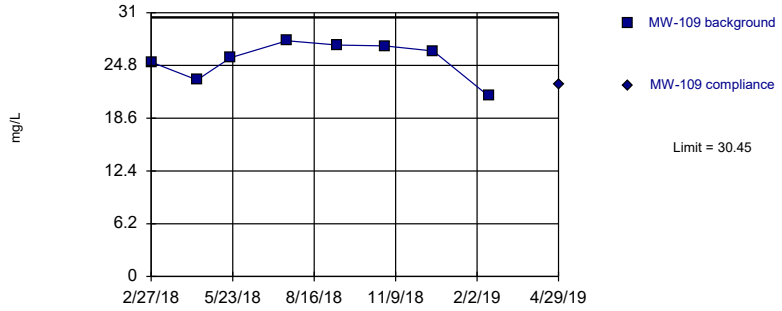
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chloride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=25.46, Std. Dev.=2.257, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8817, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Chloride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-105	MW-105
2/28/2018	18.5	
4/16/2018	19	
5/21/2018	18.6	
7/19/2018	18.4	
9/11/2018	18.3	
10/30/2018	17.9	
12/19/2018	18.2	
2/14/2019	17.5	
4/29/2019		17.8

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-107	MW-107	
2/28/2018	18.5		
4/16/2018	19.7		
5/21/2018	20.6		
7/19/2018	20.1		
9/11/2018	19		
10/29/2018	20.2		
12/20/2018	20.2		
2/15/2019	25.9		
4/29/2019		33.3	
5/20/2019		34.2	1st verification sample
7/23/2019		34.3	2nd verification sample

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-108	MW-108
2/28/2018	16.5	
4/16/2018	16	
5/21/2018	16.4	
7/19/2018	16.7	
9/10/2018	17.5	
10/29/2018	18.9	
12/19/2018	28.7	
2/15/2019	18.8	
4/29/2019		18.7

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

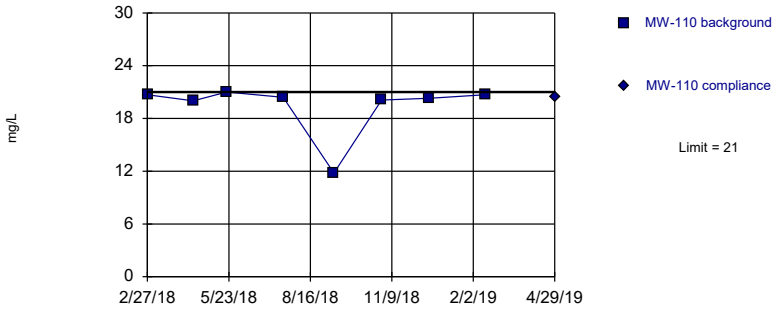
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-109	MW-109
2/27/2018	25.2	
4/16/2018	23.1	
5/21/2018	25.7	
7/19/2018	27.7	
9/10/2018	27.2	
10/29/2018	27.1	
12/19/2018	26.5	
2/15/2019	21.2	
4/29/2019		22.5

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

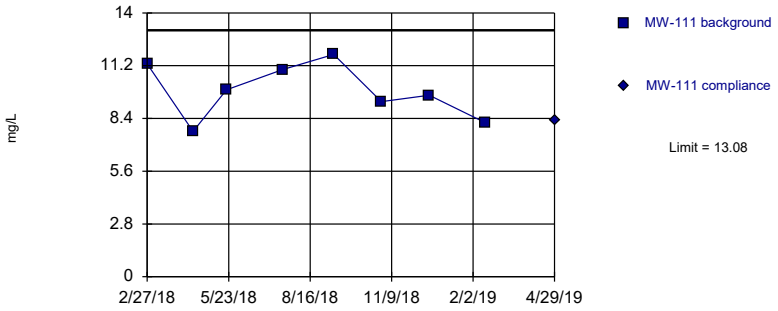
Constituent: Chloride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=9.855, Std. Dev.=1.46, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9538, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

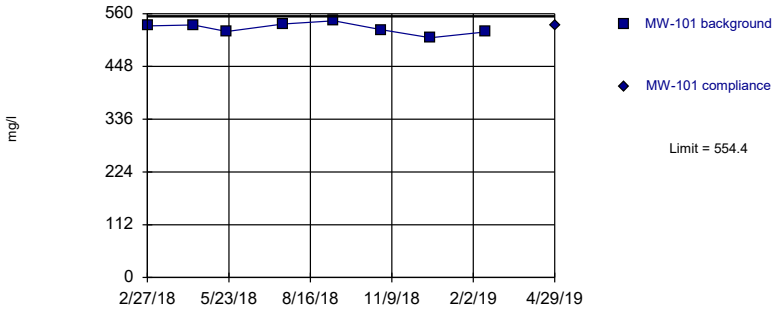
Constituent: Chloride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=528.9, Std. Dev.=11.54, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9683, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

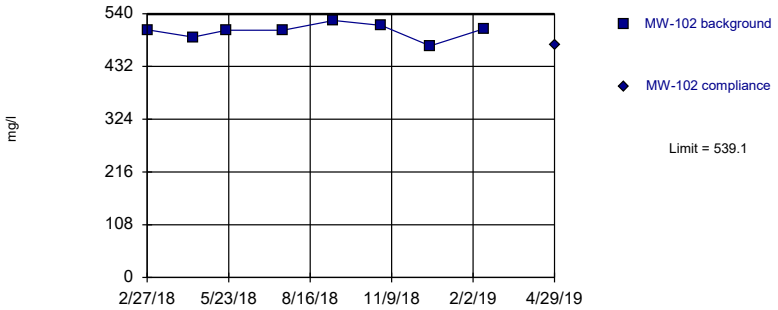
Constituent: Dissolved Solids Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=504.5, Std. Dev.=15.64, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.918, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Dissolved Solids Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-110	MW-110
2/27/2018	20.7	
4/16/2018	20	
5/21/2018	21	
7/19/2018	20.4	
9/10/2018	11.8	
10/30/2018	20.1	
12/19/2018	20.3	
2/15/2019	20.7	
4/29/2019		20.5

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-111	MW-111
2/27/2018	11.3	
4/16/2018	7.71	
5/21/2018	9.92	
7/19/2018	11	
9/10/2018	11.8	
10/30/2018	9.29	
12/19/2018	9.63	
2/15/2019	8.19	
4/29/2019		8.3

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-101	MW-101
2/27/2018	534	
4/16/2018	536	
5/21/2018	522	
7/19/2018	538	
9/10/2018	545	
10/30/2018	526	
12/20/2018	509	
2/15/2019	521	
4/29/2019		536

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

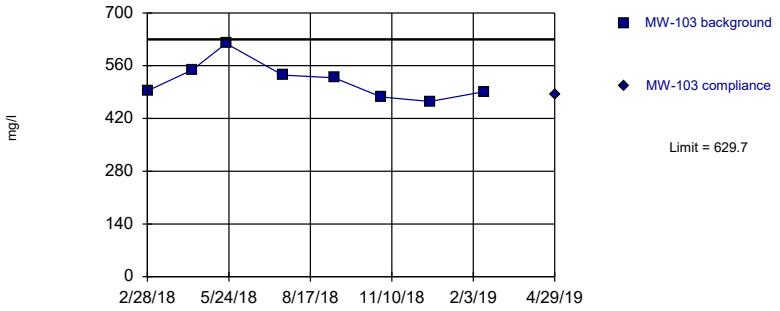
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-102	MW-102
2/27/2018	507	
4/16/2018	492	
5/21/2018	506	
7/19/2018	506	
9/10/2018	526	
10/30/2018	516	
12/20/2018	474	
2/14/2019	509	
4/29/2019		477

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=519.6, Std. Dev.=49.82, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9082, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Dissolved Solids Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

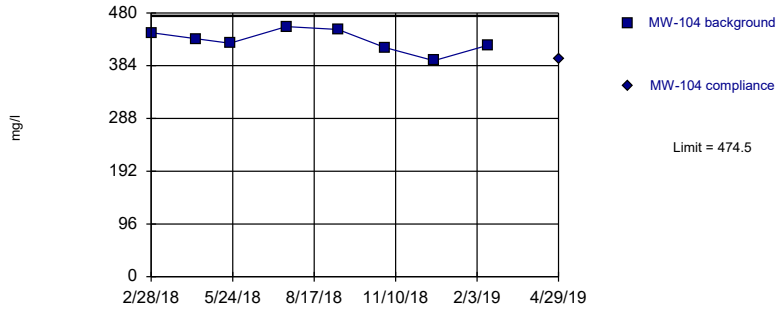
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=429.8, Std. Dev.=20.26, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9563, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Dissolved Solids Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

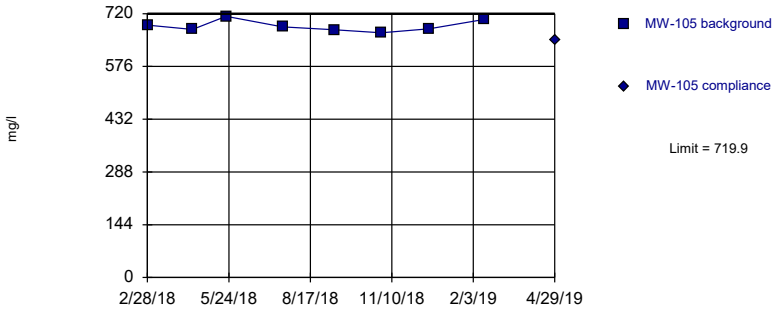
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=686.3, Std. Dev.=15.21, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9136, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Dissolved Solids Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

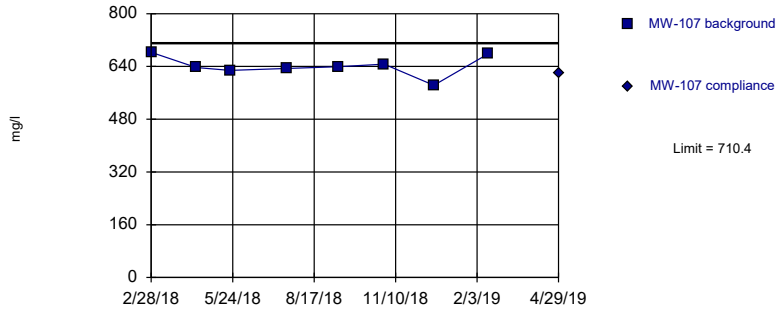
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=641.3, Std. Dev.=31.27, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9125, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Dissolved Solids Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-103	MW-103
2/28/2018	493	
4/16/2018	549	
5/21/2018	619	
7/19/2018	535	
9/11/2018	528	
10/30/2018	477	
12/20/2018	465	
2/14/2019	491	
4/29/2019		485

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-104	MW-104
2/28/2018	444	
4/16/2018	433	
5/21/2018	425	
7/19/2018	455	
9/11/2018	450	
10/30/2018	417	
12/20/2018	393	
2/14/2019	421	
4/29/2019		397

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-105	MW-105
2/28/2018	689	
4/16/2018	677	
5/21/2018	713	
7/19/2018	684	
9/11/2018	676	
10/30/2018	668	
12/19/2018	679	
2/14/2019	704	
4/29/2019		647

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

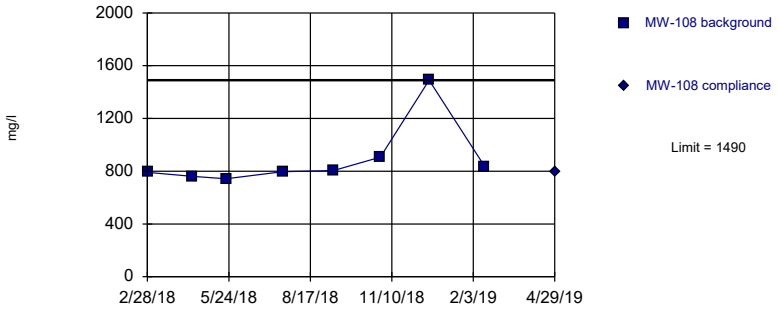
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-107	MW-107
2/28/2018	683	
4/16/2018	637	
5/21/2018	628	
7/19/2018	634	
9/11/2018	639	
10/29/2018	647	
12/20/2018	583	
2/15/2019	679	
4/29/2019		619

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

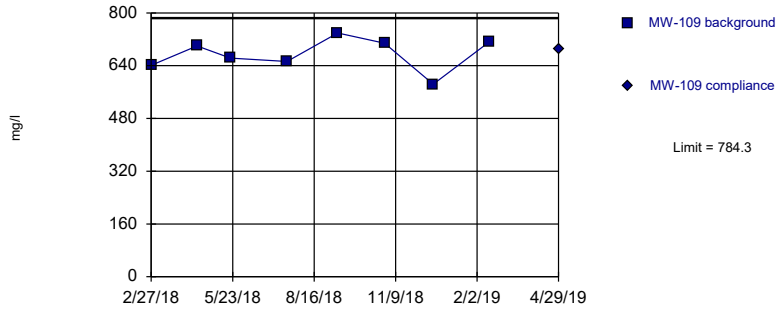
Constituent: Dissolved Solids Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=674.9, Std. Dev.=49.53, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9485, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

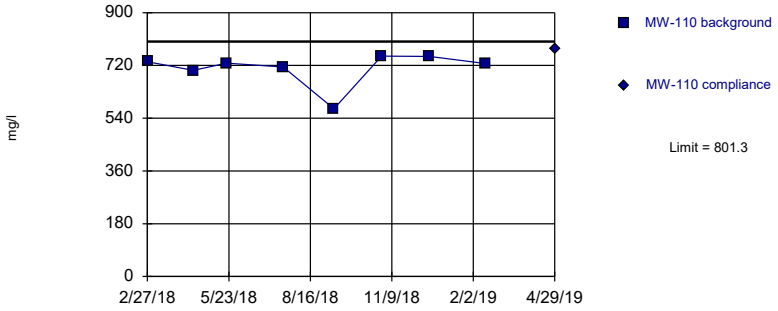
Constituent: Dissolved Solids Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on x^4 transformation): Mean=2.6e11, Std. Dev.=6.8e10, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7657, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

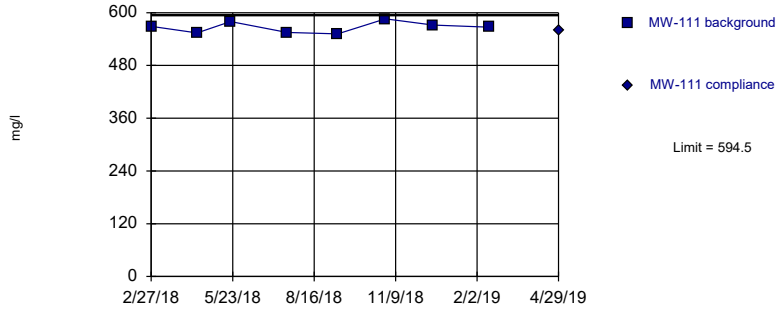
Constituent: Dissolved Solids Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=566.9, Std. Dev.=12.52, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9265, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Dissolved Solids Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-108	MW-108
2/28/2018	791	
4/16/2018	761	
5/21/2018	743	
7/19/2018	796	
9/10/2018	805	
10/29/2018	906	
12/19/2018	1490	
2/15/2019	835	
4/29/2019		799

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-109	MW-109
2/27/2018	641	
4/16/2018	700	
5/21/2018	663	
7/19/2018	653	
9/10/2018	739	
10/29/2018	708	
12/19/2018	584	
2/15/2019	711	
4/29/2019		692

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-110	MW-110
2/27/2018	733	
4/16/2018	703	
5/21/2018	728	
7/19/2018	715	
9/10/2018	572	
10/30/2018	752	
12/19/2018	751	
2/15/2019	727	
4/29/2019		776

Prediction Limit

Constituent: Dissolved Solids (mg/l) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

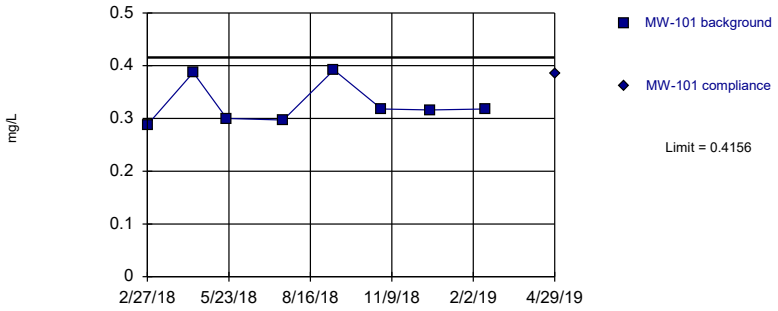
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-111	MW-111
2/27/2018	569	
4/16/2018	554	
5/21/2018	580	
7/19/2018	555	
9/10/2018	552	
10/30/2018	586	
12/19/2018	572	
2/15/2019	567	
4/29/2019		559

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.327, Std. Dev.=0.0401, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.796, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

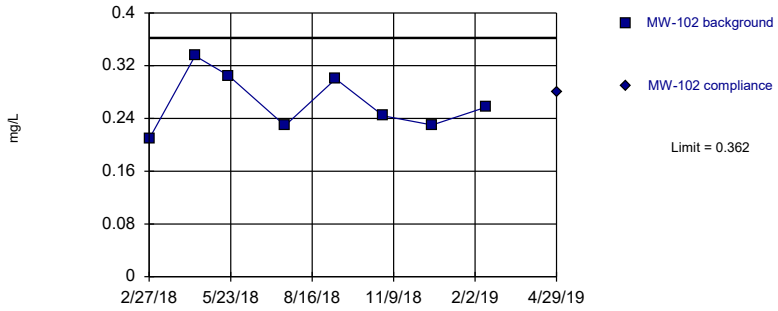
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2636, Std. Dev.=0.04452, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9243, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

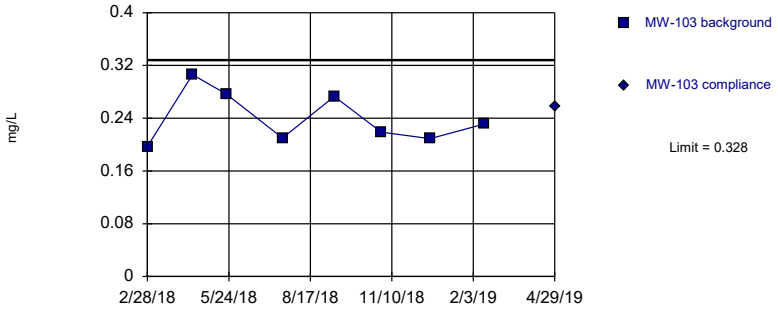
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2403, Std. Dev.=0.03972, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8898, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

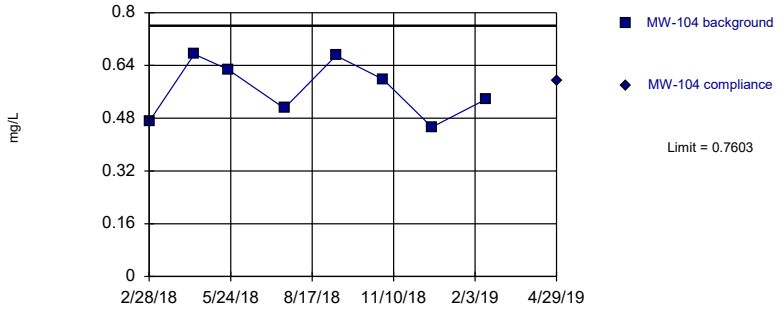
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.5675, Std. Dev.=0.08725, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9166, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-101	MW-101
2/27/2018	0.288	
4/16/2018	0.387	
5/21/2018	0.3	
7/19/2018	0.297	
9/10/2018	0.392	
10/30/2018	0.318	
12/20/2018	0.316	
2/15/2019	0.318	
4/29/2019		0.385

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-102	MW-102
2/27/2018	0.209	
4/16/2018	0.335	
5/21/2018	0.305	
7/19/2018	0.229	
9/10/2018	0.3	
10/30/2018	0.244	
12/20/2018	0.23	
2/14/2019	0.257	
4/29/2019		0.28

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-103	MW-103
2/28/2018	0.197	
4/16/2018	0.306	
5/21/2018	0.277	
7/19/2018	0.21	
9/11/2018	0.273	
10/30/2018	0.219	
12/20/2018	0.209	
2/14/2019	0.231	
4/29/2019		0.257

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

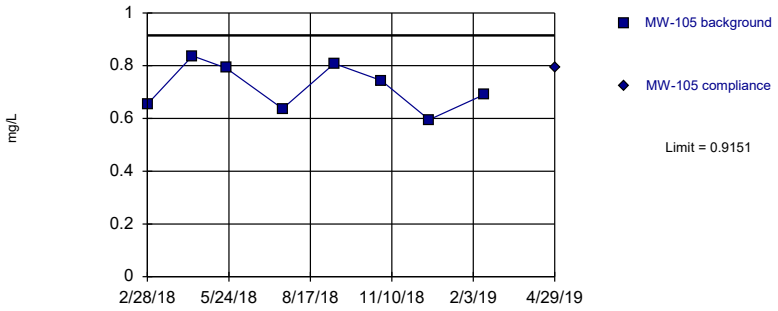
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-104	MW-104
2/28/2018	0.47	
4/16/2018	0.674	
5/21/2018	0.628	
7/19/2018	0.51	
9/11/2018	0.67	
10/30/2018	0.598	
12/20/2018	0.453	
2/14/2019	0.537	
4/29/2019		0.593

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.7195, Std. Dev.=0.08849, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9439, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

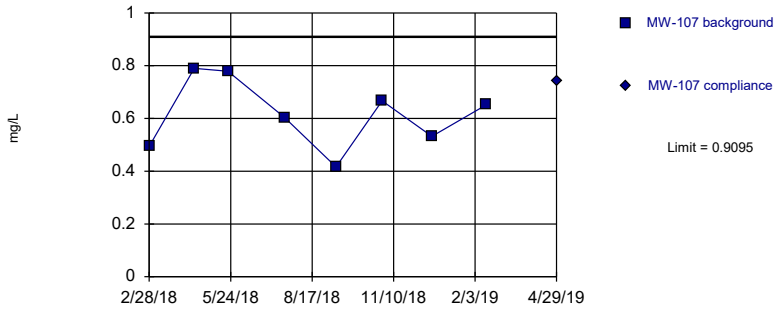
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.6168, Std. Dev.=0.1325, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9564, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

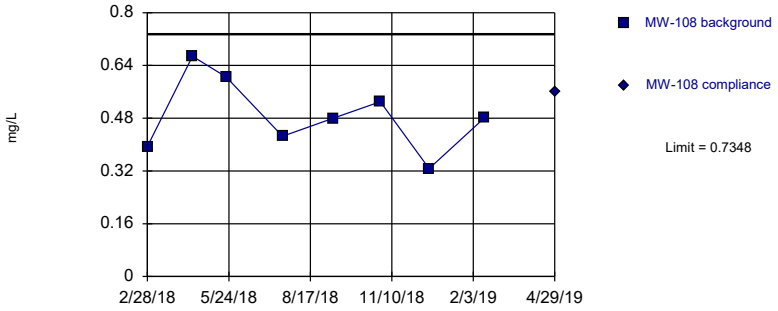
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.4889, Std. Dev.=0.1113, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9807, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

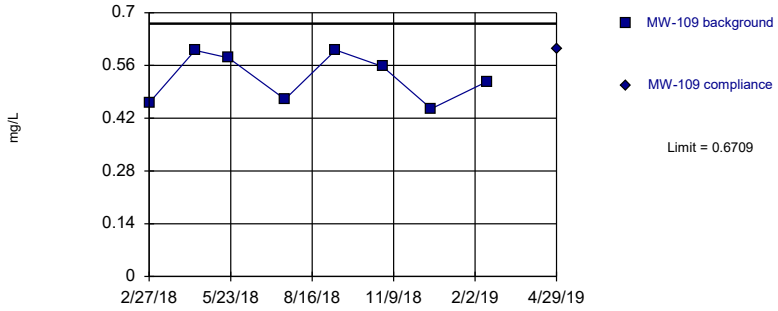
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.5289, Std. Dev.=0.06427, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8832, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-105	MW-105
2/28/2018	0.654	
4/16/2018	0.837	
5/21/2018	0.791	
7/19/2018	0.637	
9/11/2018	0.808	
10/30/2018	0.744	
12/19/2018	0.595	
2/14/2019	0.69	
4/29/2019		0.791

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-107	MW-107
2/28/2018	0.494	
4/16/2018	0.79	
5/21/2018	0.779	
7/19/2018	0.604	
9/11/2018	0.416	
10/29/2018	0.667	
12/20/2018	0.532	
2/15/2019	0.652	
4/29/2019		0.744

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-108	MW-108
2/28/2018	0.394	
4/16/2018	0.668	
5/21/2018	0.605	
7/19/2018	0.425	
9/10/2018	0.48	
10/29/2018	0.53	
12/19/2018	0.327	
2/15/2019	0.482	
4/29/2019		0.559

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

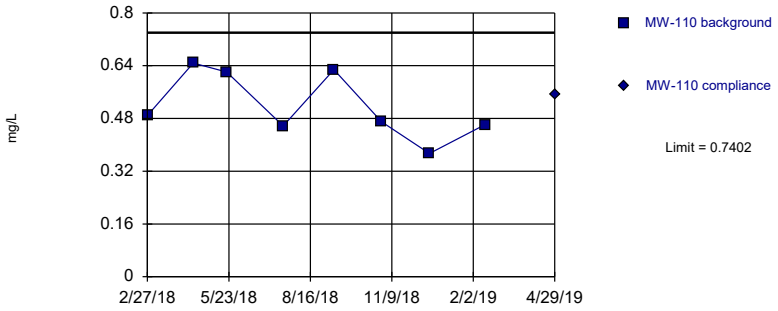
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-109	MW-109
2/27/2018	0.461	
4/16/2018	0.6	
5/21/2018	0.58	
7/19/2018	0.47	
9/10/2018	0.601	
10/29/2018	0.557	
12/19/2018	0.445	
2/15/2019	0.517	
4/29/2019		0.604

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.5185, Std. Dev.=0.1003, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8791, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

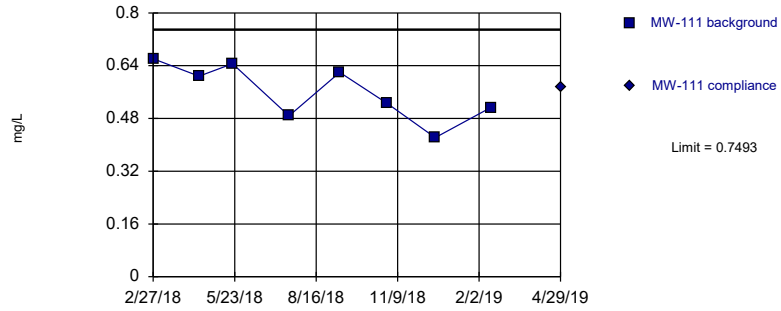
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.5604, Std. Dev.=0.08549, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9284, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

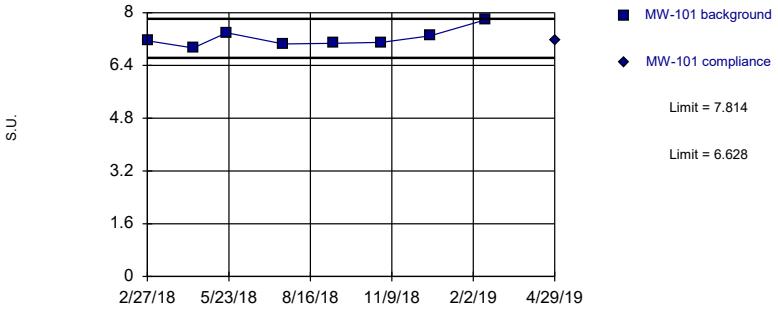
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.221, Std. Dev.=0.2682, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8777, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

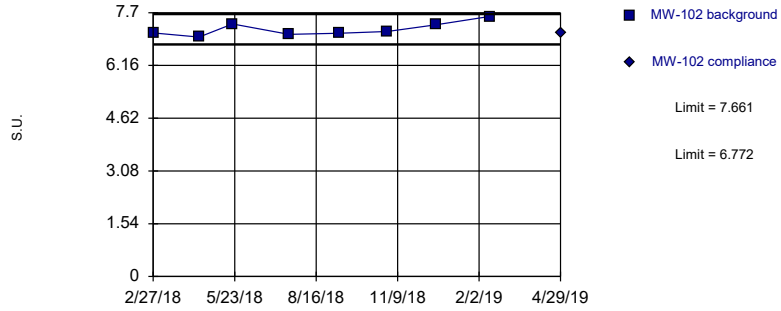
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.216, Std. Dev.=0.2011, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8971, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-110	MW-110
2/27/2018	0.489	
4/16/2018	0.648	
5/21/2018	0.621	
7/19/2018	0.457	
9/10/2018	0.628	
10/30/2018	0.47	
12/19/2018	0.374	
2/15/2019	0.461	
4/29/2019		0.551

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-111	MW-111
2/27/2018	0.661	
4/16/2018	0.608	
5/21/2018	0.646	
7/19/2018	0.488	
9/10/2018	0.62	
10/30/2018	0.525	
12/19/2018	0.422	
2/15/2019	0.513	
4/29/2019		0.574

Prediction Limit

Constituent: pH (S.U.) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-101	MW-101
2/27/2018	7.15	
4/16/2018	6.93	
5/21/2018	7.39	
7/19/2018	7.05	
9/10/2018	7.07	
10/30/2018	7.1	
12/20/2018	7.3	
2/15/2019	7.78	
4/29/2019		7.18

Prediction Limit

Constituent: pH (S.U.) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

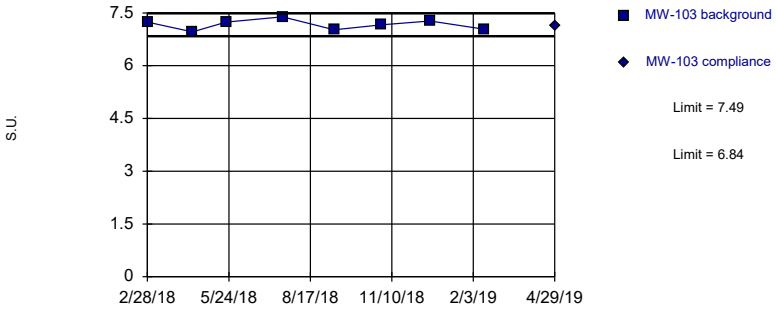
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-102	MW-102
2/27/2018	7.11	
4/16/2018	6.99	
5/21/2018	7.37	
7/19/2018	7.07	
9/10/2018	7.1	
10/30/2018	7.15	
12/20/2018	7.35	
2/14/2019	7.59	
4/29/2019		7.11

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.165, Std. Dev.=0.1472, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9459, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

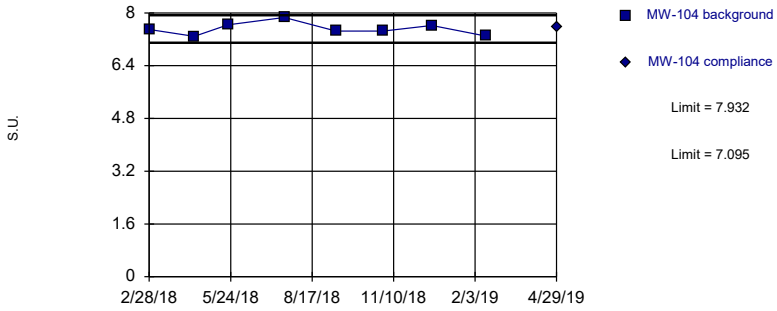
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.514, Std. Dev.=0.1894, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9364, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

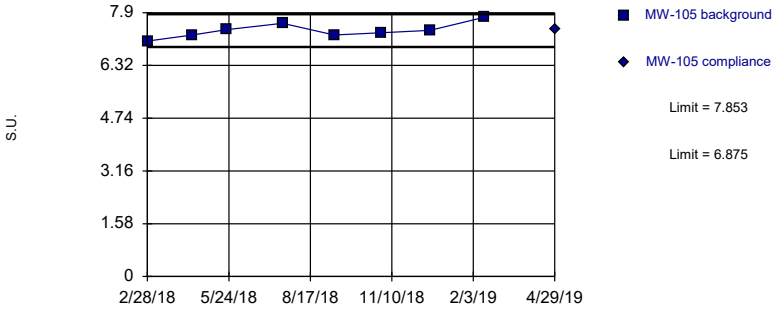
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.364, Std. Dev.=0.2213, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9553, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

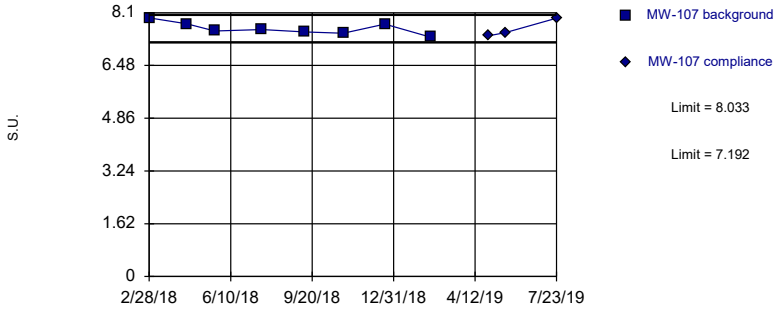
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.613, Std. Dev.=0.1905, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9567, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Prediction Limit

Constituent: pH (S.U.) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-103	MW-103
2/28/2018	7.24	
4/16/2018	6.96	
5/21/2018	7.24	
7/19/2018	7.39	
9/11/2018	7.02	
10/30/2018	7.16	
12/20/2018	7.27	
2/14/2019	7.04	
4/29/2019		7.15

Prediction Limit

Constituent: pH (S.U.) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-104	MW-104
2/28/2018	7.5	
4/16/2018	7.29	
5/21/2018	7.64	
7/19/2018	7.86	
9/11/2018	7.45	
10/30/2018	7.45	
12/20/2018	7.62	
2/14/2019	7.3	
4/29/2019		7.56

Prediction Limit

Constituent: pH (S.U.) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-105	MW-105
2/28/2018	7.05	
4/16/2018	7.23	
5/21/2018	7.39	
7/19/2018	7.58	
9/11/2018	7.23	
10/30/2018	7.3	
12/20/2018	7.37	
2/14/2019	7.76	
4/29/2019		7.41

Prediction Limit

Constituent: pH (S.U.) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

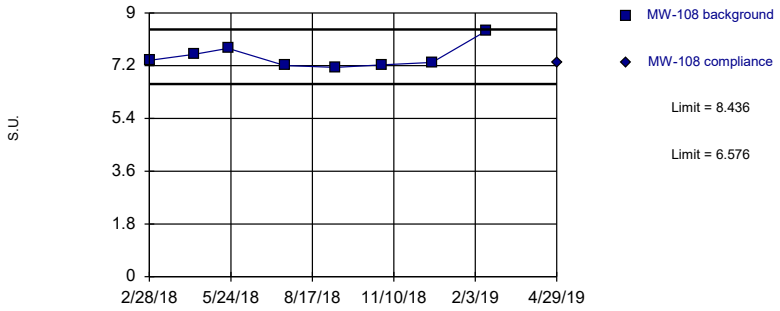
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-107	MW-107	
2/28/2018	7.94		
4/16/2018	7.76		
5/21/2018	7.54		
7/19/2018	7.58		
9/11/2018	7.51		
10/29/2018	7.47		
12/20/2018	7.75		
2/15/2019	7.35		
4/29/2019		7.39	
5/20/2019		7.49	extra sample
7/23/2019		7.93	extra sample

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.506, Std. Dev.=0.4207, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8278, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

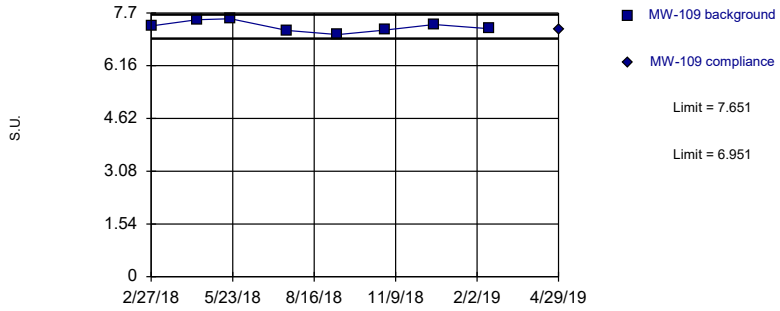
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.301, Std. Dev.=0.1583, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9525, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

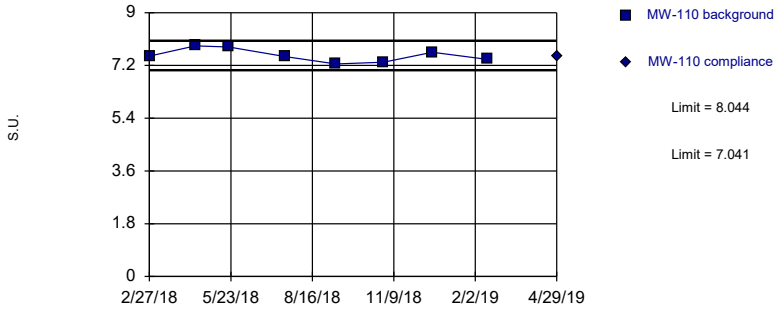
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.543, Std. Dev.=0.2271, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9407, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

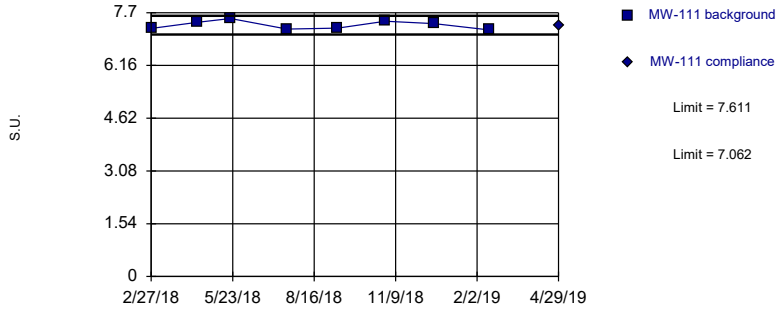
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.336, Std. Dev.=0.1243, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8949, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Prediction Limit

Constituent: pH (S.U.) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-108	MW-108
2/28/2018	7.38	
4/16/2018	7.59	
5/21/2018	7.79	
7/19/2018	7.21	
9/10/2018	7.14	
10/29/2018	7.23	
12/20/2018	7.31	
2/15/2019	8.4	
4/29/2019		7.32

Prediction Limit

Constituent: pH (S.U.) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-109	MW-109
2/27/2018	7.32	
4/16/2018	7.5	
5/21/2018	7.53	
7/19/2018	7.19	
9/10/2018	7.07	
10/29/2018	7.2	
12/20/2018	7.36	
2/15/2019	7.24	
4/29/2019		7.22

Prediction Limit

Constituent: pH (S.U.) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-110	MW-110
2/27/2018	7.52	
4/16/2018	7.87	
5/21/2018	7.83	
7/19/2018	7.5	
9/10/2018	7.25	
10/30/2018	7.31	
12/20/2018	7.65	
2/15/2019	7.41	
4/29/2019		7.51

Prediction Limit

Constituent: pH (S.U.) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

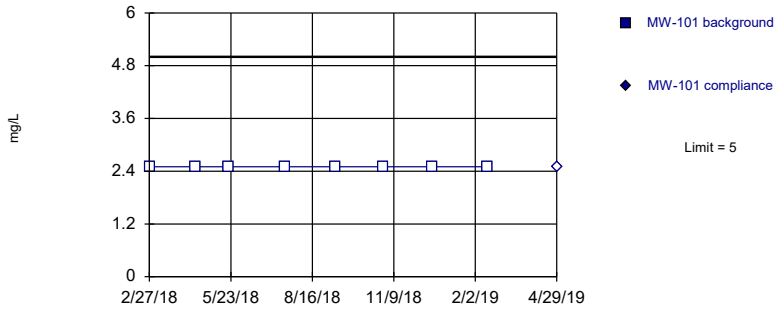
	MW-111	MW-111
2/27/2018	7.24	
4/16/2018	7.42	
5/21/2018	7.53	
7/19/2018	7.22	
9/10/2018	7.25	
10/30/2018	7.45	
12/20/2018	7.38	
2/15/2019	7.2	
4/29/2019		7.32

Sanitas™ v.9.6.18 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 = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

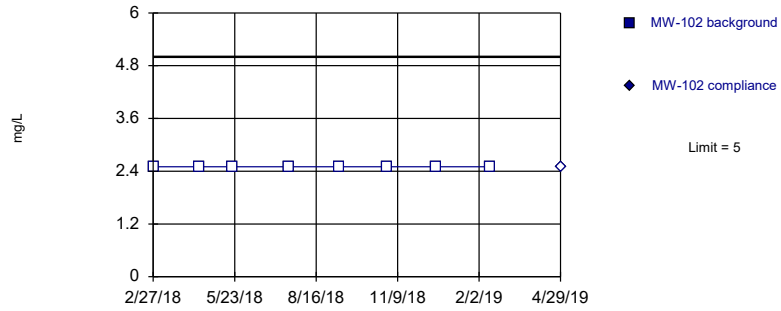
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 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 = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

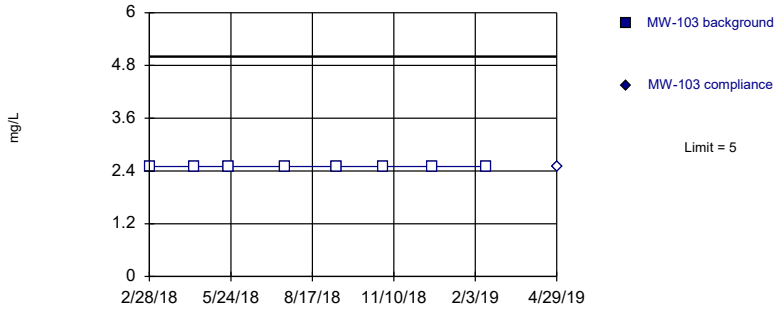
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 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 = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

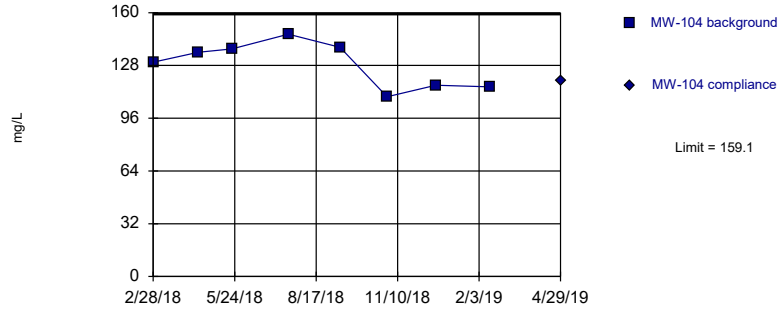
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=128.8, Std. Dev.=13.73, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9158, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Sulfate Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-101	MW-101
2/27/2018	<5	
4/16/2018	<5	
5/21/2018	<5	
7/19/2018	<5	
9/10/2018	<5	
10/30/2018	<5	
12/20/2018	<5	
2/15/2019	<5	
4/29/2019		<5

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-102	MW-102
2/27/2018	<5	
4/16/2018	<5	
5/21/2018	<5	
7/19/2018	<5	
9/10/2018	<5	
10/30/2018	<5	
12/20/2018	<5	
2/14/2019	<5	
4/29/2019		<5

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-103	MW-103
2/28/2018	<5	
4/16/2018	<5	
5/21/2018	<5	
7/19/2018	<5	
9/11/2018	<5	
10/30/2018	<5	
12/20/2018	<5	
2/14/2019	<5	
4/29/2019		<5

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

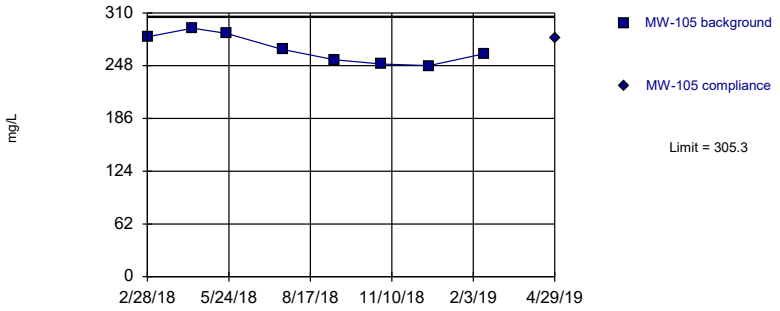
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-104	MW-104
2/28/2018	130	
4/16/2018	136	
5/21/2018	138	
7/19/2018	147	
9/11/2018	139	
10/30/2018	109	
12/20/2018	116	
2/14/2019	115	
4/29/2019		119

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=267.8, Std. Dev.=17.01, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9131, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Sulfate Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

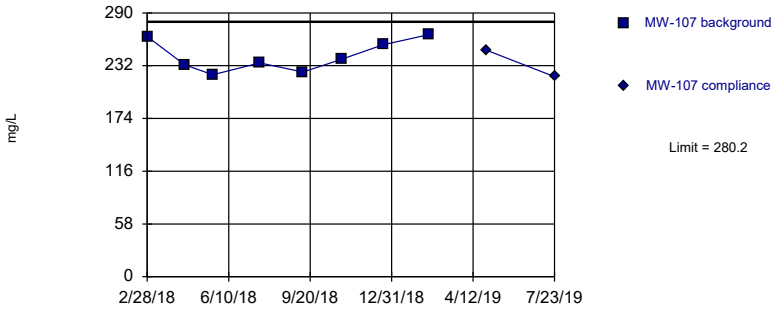
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=242.4, Std. Dev.=17.14, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9005, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Sulfate Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

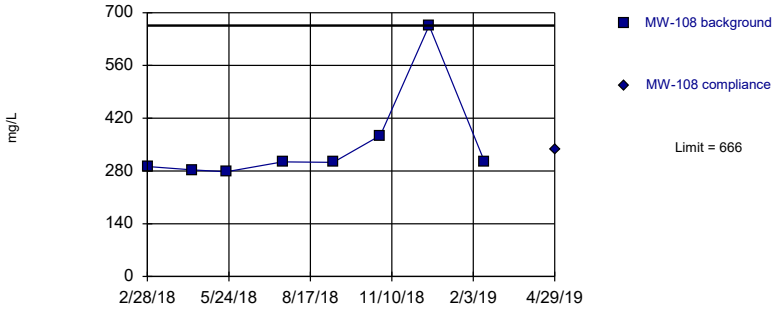
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

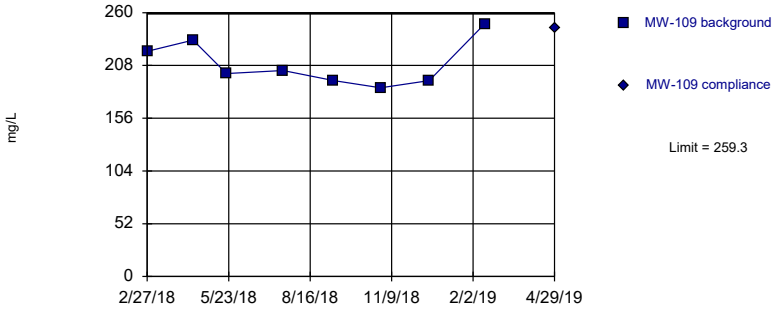
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=209.9, Std. Dev.=22.35, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.897, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Sulfate Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-105	MW-105
2/28/2018	282	
4/16/2018	292	
5/21/2018	286	
7/19/2018	267	
9/11/2018	255	
10/30/2018	250	
12/19/2018	248	
2/14/2019	262	
4/29/2019		281

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-107	MW-107	
2/28/2018	264		
4/16/2018	233		
5/21/2018	222		
7/19/2018	235		
9/11/2018	225		
10/29/2018	239		
12/20/2018	255		
2/15/2019	266		
4/29/2019		249	
7/23/2019		220	extra sample

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-108	MW-108
2/28/2018	292	
4/16/2018	283	
5/21/2018	278	
7/19/2018	304	
9/10/2018	303	
10/29/2018	374	
12/19/2018	666	
2/15/2019	303	
4/29/2019		336

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

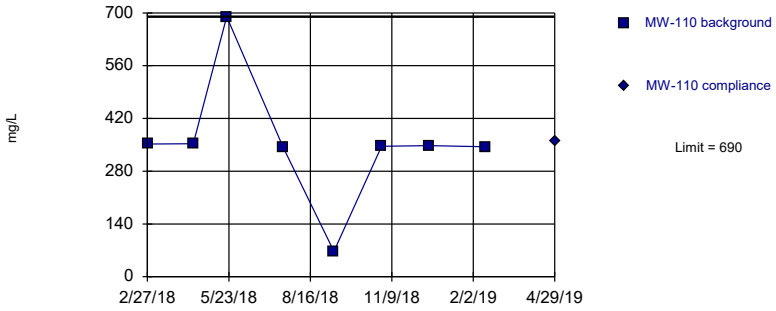
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-109	MW-109
2/27/2018	222	
4/16/2018	233	
5/21/2018	200	
7/19/2018	203	
9/10/2018	193	
10/29/2018	186	
12/19/2018	193	
2/15/2019	249	
4/29/2019		245

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

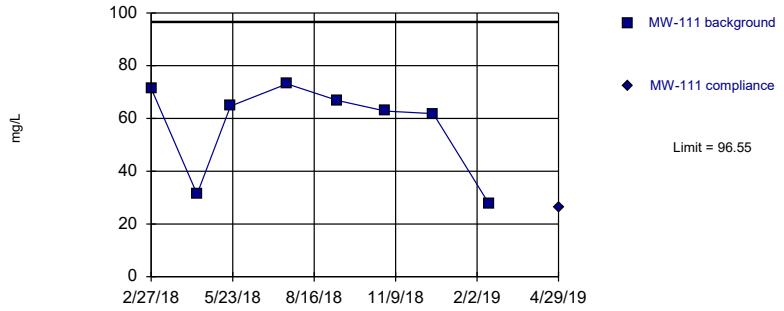
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.18 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=57.46, Std. Dev.=17.69, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7706, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Sulfate Analysis Run 8/1/2019 8:50 AM View: Ash Impound III

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

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-110	MW-110
2/27/2018	352	
4/16/2018	353	
5/21/2018	690	
7/19/2018	343	
9/10/2018	67.4	
10/30/2018	346	
12/19/2018	348	
2/15/2019	345	
4/29/2019		361

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/1/2019 8:52 AM View: Ash Impound III

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

	MW-111	MW-111
2/27/2018	71.4	
4/16/2018	31.3	
5/21/2018	64.7	
7/19/2018	73.1	
9/10/2018	66.8	
10/30/2018	62.8	
12/19/2018	61.8	
2/15/2019	27.8	
4/29/2019		26.3

Prediction Limit

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr Printed 8/1/2019, 8:52 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	MW-101	0.2	n/a	4/29/2019	0.1ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-102	0.2	n/a	4/29/2019	0.1ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-103	0.2	n/a	4/29/2019	0.1ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-104	1.361	n/a	4/29/2019	1.2	No	8	0	No	0.000...	Param Intra 1 of 3
Boron (mg/L)	MW-105	1.92	n/a	4/29/2019	1.41	No	8	0	n/a	0.005912	NP Intra (normality) ...
Boron (mg/L)	MW-107	2.771	n/a	4/29/2019	2.2	No	8	0	No	0.000...	Param Intra 1 of 3
Boron (mg/L)	MW-108	2.035	n/a	4/29/2019	1.41	No	8	0	No	0.000...	Param Intra 1 of 3
Boron (mg/L)	MW-109	0.8503	n/a	4/29/2019	0.684	No	8	0	No	0.000...	Param Intra 1 of 3
Boron (mg/L)	MW-110	3.13	n/a	4/29/2019	2.45	No	8	0	No	0.000...	Param Intra 1 of 3
Boron (mg/L)	MW-111	1.028	n/a	4/29/2019	0.843	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-101	137.3	n/a	4/29/2019	124	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-102	143.5	n/a	4/29/2019	125	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-103	182.1	n/a	4/29/2019	137	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-104	54.12	n/a	4/29/2019	52.6	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-105	104.6	n/a	4/29/2019	89.4	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-107	63.34	n/a	7/23/2019	54.8	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-108	250	n/a	4/29/2019	128	No	8	0	sqrt(x)	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-109	141.5	n/a	4/29/2019	126	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-110	86.38	n/a	4/29/2019	64.1	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-111	108.2	n/a	4/29/2019	95.9	No	8	0	No	0.000...	Param Intra 1 of 3
Chloride (mg/L)	MW-101	6.675	n/a	4/29/2019	6.19	No	8	0	No	0.000...	Param Intra 1 of 3
Chloride (mg/L)	MW-102	5.657	n/a	4/29/2019	5.29	No	8	0	No	0.000...	Param Intra 1 of 3
Chloride (mg/L)	MW-103	4.679	n/a	4/29/2019	4.51	No	8	0	No	0.000...	Param Intra 1 of 3
Chloride (mg/L)	MW-104	25.02	n/a	4/29/2019	23	No	8	0	No	0.000...	Param Intra 1 of 3
Chloride (mg/L)	MW-105	19.3	n/a	4/29/2019	17.8	No	8	0	No	0.000...	Param Intra 1 of 3
Chloride (mg/L)	**MW-107**	**25.9**	**n/a**	**7/23/2019**	**34.3**	**Yes**	**8**	**0**	**n/a**	**0.005912**	**NP Intra (normality) ...**
Chloride (mg/L)	MW-108	28.7	n/a	4/29/2019	18.7	No	8	0	n/a	0.005912	NP Intra (normality) ...
Chloride (mg/L)	MW-109	30.45	n/a	4/29/2019	22.5	No	8	0	No	0.000...	Param Intra 1 of 3
Chloride (mg/L)	MW-110	21	n/a	4/29/2019	20.5	No	8	0	n/a	0.005912	NP Intra (normality) ...
Chloride (mg/L)	MW-111	13.08	n/a	4/29/2019	8.3	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-101	554.4	n/a	4/29/2019	536	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-102	539.1	n/a	4/29/2019	477	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-103	629.7	n/a	4/29/2019	485	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-104	474.5	n/a	4/29/2019	397	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-105	719.9	n/a	4/29/2019	647	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-107	710.4	n/a	4/29/2019	619	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-108	1490	n/a	4/29/2019	799	No	8	0	n/a	0.005912	NP Intra (normality) ...
Dissolved Solids (mg/l)	MW-109	784.3	n/a	4/29/2019	692	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-110	801.3	n/a	4/29/2019	776	No	8	0	x^4	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-111	594.5	n/a	4/29/2019	559	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-101	0.4156	n/a	4/29/2019	0.385	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-102	0.362	n/a	4/29/2019	0.28	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-103	0.328	n/a	4/29/2019	0.257	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-104	0.7603	n/a	4/29/2019	0.593	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-105	0.9151	n/a	4/29/2019	0.791	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-107	0.9095	n/a	4/29/2019	0.744	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-108	0.7348	n/a	4/29/2019	0.559	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-109	0.6709	n/a	4/29/2019	0.604	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-110	0.7402	n/a	4/29/2019	0.551	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-111	0.7493	n/a	4/29/2019	0.574	No	8	0	No	0.000...	Param Intra 1 of 3

Prediction Limit

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr Printed 8/1/2019, 8:52 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
pH (S.U.)	MW-101	7.814	6.628	4/29/2019	7.18	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-102	7.661	6.772	4/29/2019	7.11	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-103	7.49	6.84	4/29/2019	7.15	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-104	7.932	7.095	4/29/2019	7.56	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-105	7.853	6.875	4/29/2019	7.41	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-107	8.033	7.192	7/23/2019	7.93	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-108	8.436	6.576	4/29/2019	7.32	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-109	7.651	6.951	4/29/2019	7.22	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-110	8.044	7.041	4/29/2019	7.51	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-111	7.611	7.062	4/29/2019	7.32	No	8	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	MW-101	5	n/a	4/29/2019	2.5ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
Sulfate (mg/L)	MW-102	5	n/a	4/29/2019	2.5ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
Sulfate (mg/L)	MW-103	5	n/a	4/29/2019	2.5ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
Sulfate (mg/L)	MW-104	159.1	n/a	4/29/2019	119	No	8	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	MW-105	305.3	n/a	4/29/2019	281	No	8	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	MW-107	280.2	n/a	7/23/2019	220	No	8	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	MW-108	666	n/a	4/29/2019	336	No	8	0	n/a	0.005912	NP Intra (normality) ...
Sulfate (mg/L)	MW-109	259.3	n/a	4/29/2019	245	No	8	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	MW-110	690	n/a	4/29/2019	361	No	8	0	n/a	0.005912	NP Intra (normality) ...
Sulfate (mg/L)	MW-111	96.55	n/a	4/29/2019	26.3	No	8	0	No	0.000...	Param Intra 1 of 3

ATTACHMENT 2

Sanitas™ Configuration Settings

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

Exclude data flags:

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
  - [ ] Always Combine Data Pages...
  - [x] Include Tick Marks on Data Page
  - [ ] Use Constituent Name for Graph Title
- [ ] Draw Border Around Text Reports and Data Pages
- [x] Enlarge/Reduce Fonts (Graphs): 100%
- [x] Enlarge/Reduce Fonts (Data/Text Reports): 100%
- [x] Wide Margins (on reports without explicit setting)
- [ ] Use CAS# (Not Const. Name)
- [ ] Truncate File Names to 20 Characters
- [ ] Include Limit Lines when found in Database...
- [x] Show Deselected Data on Time Series Lighter
- [x] 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

☑ 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: 10

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...

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

Fall 2019 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

March 10, 2020

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

From: SCS Engineers

RE: Determination of Statistically Significant Increases – Ash Impoundment
Fall 2019 Initial Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the Ash Impoundment at the Iatan Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated April 16, 2019. Groundwater samples were collected on November 4, 2019. Review and validation of the results from the November 2019 Detection Monitoring Event was completed on December 12, 2019, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on January 16, 2020 and February 4, 2020.

The completed statistical evaluation identified one Appendix III constituent above the prediction limit established for monitoring wells MW-105 and MW-107.

Constituent/Monitoring Well	*UPL	Observation November 4, 2019	1st Verification January 16, 2020	2nd Verification February 4, 2020
Chloride				
MW-105	19.3	20.2	20.4	20.9
MW-107	25.9	31.3	34.3	27.5

*UPL – Upper Prediction Limit

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified an SSI above the background prediction limit for chloride in monitoring wells MW-105 and MW-107.

Attached to this memorandum are the following backup information:

Attachment 1: Sanitas™ Output:

Statistical evaluation output from Sanitas™ for the prediction limit analysis. This includes prediction limit plots, prediction limit background data, detection sample result, 1st verification re-sample result (when applicable), 2nd verification re-sample result (when

applicable), extra sample results for pH because pH is collected as part of the sampling procedure, and a Prediction Limit summary table. Output documentation includes the analytical data used for the statistical analyses.

Attachment 2: Sanitas™ Configuration Settings:

Screen shots of the applicable Sanitas™ configuration settings for the statistical prediction limit analysis. This includes data configuration, output configuration, prediction limit configuration and other tests configuration.

Revision Number	Revision Date	Attachment Revised	Summary of Revisions

Iatan Generating Station
Determination of Statistically Significant Increases
Ash Impoundment
March 10, 2020

ATTACHMENT 1

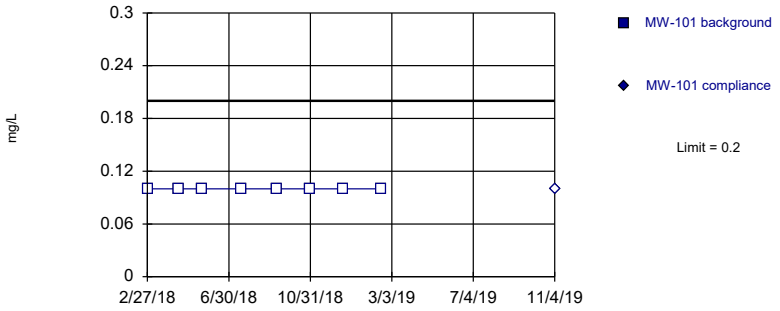
Sanitas™ Output

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

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

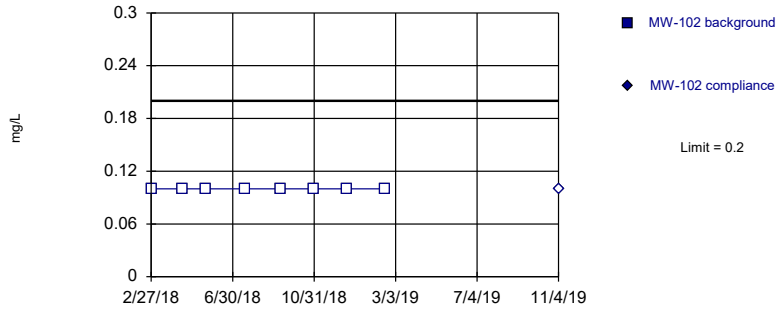
Constituent: Boron Analysis Run 2/21/2020 3:17 PM View: Ash Impound III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

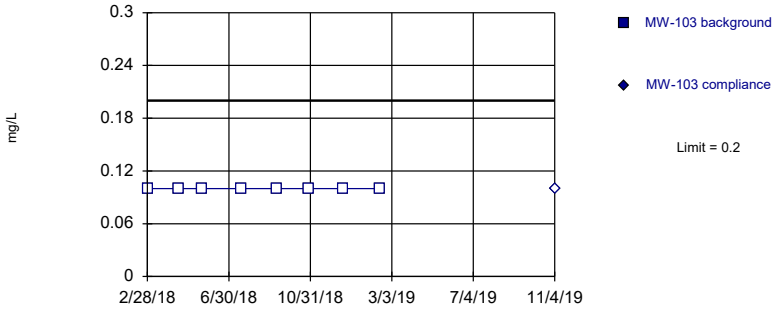
Constituent: Boron Analysis Run 2/21/2020 3:17 PM View: Ash Impound III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

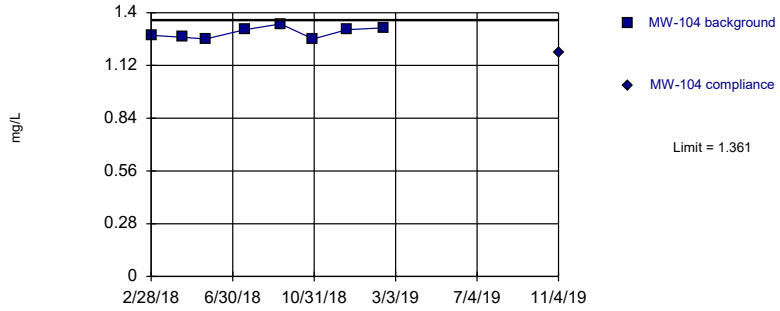
Constituent: Boron Analysis Run 2/21/2020 3:17 PM View: Ash Impound III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.294, Std. Dev.=0.03021, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9056, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Boron Analysis Run 2/21/2020 3:17 PM View: Ash Impound III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Boron Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

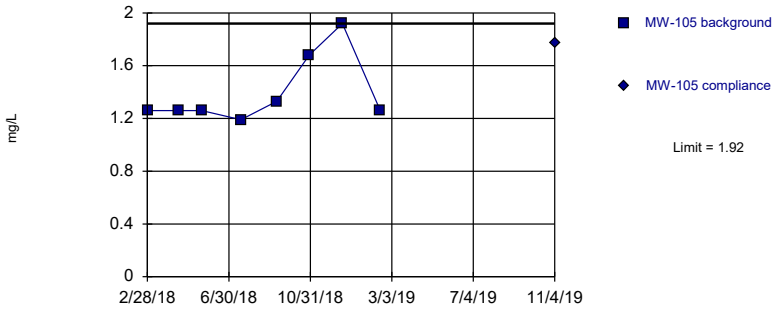
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-101	MW-101	MW-102	MW-102	MW-103	MW-103	MW-104	MW-104
2/27/2018	<0.2		<0.2					
2/28/2018					<0.2		1.28	
4/16/2018	<0.2		<0.2		<0.2		1.27	
5/21/2018	<0.2		<0.2		<0.2		1.26	
7/19/2018	<0.2		<0.2		<0.2		1.31	
9/10/2018	<0.2		<0.2					
9/11/2018					<0.2		1.34	
10/30/2018	<0.2		<0.2		<0.2		1.26	
12/20/2018	<0.2		<0.2		<0.2		1.31	
2/14/2019			<0.2		<0.2		1.32	
2/15/2019	<0.2							
11/4/2019		<0.2		<0.2		<0.2		1.19

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 2/21/2020 3:17 PM View: Ash Impound III

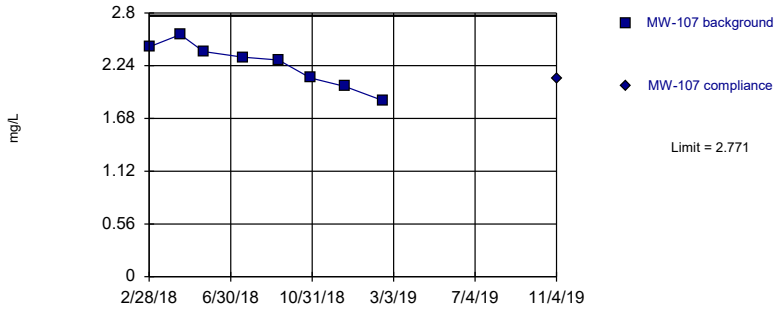
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.254, Std. Dev.=0.2342, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9601, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Boron Analysis Run 2/21/2020 3:17 PM View: Ash Impound III

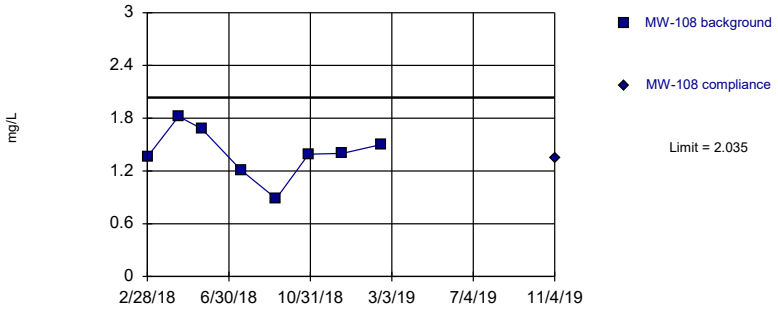
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.406, Std. Dev.=0.2847, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9636, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Boron Analysis Run 2/21/2020 3:17 PM View: Ash Impound III

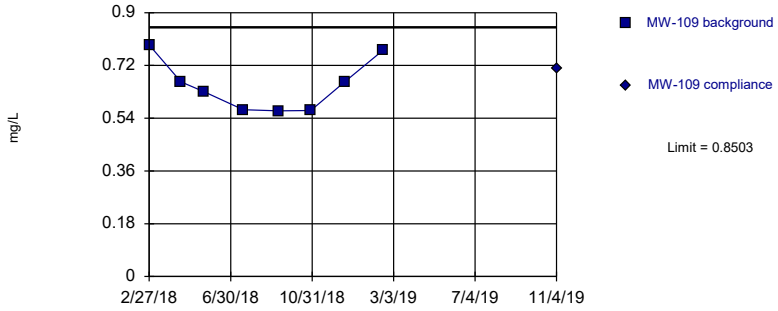
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.6525, Std. Dev.=0.0895, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8618, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Boron Analysis Run 2/21/2020 3:17 PM View: Ash Impound III

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

Prediction Limit

Constituent: Boron Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

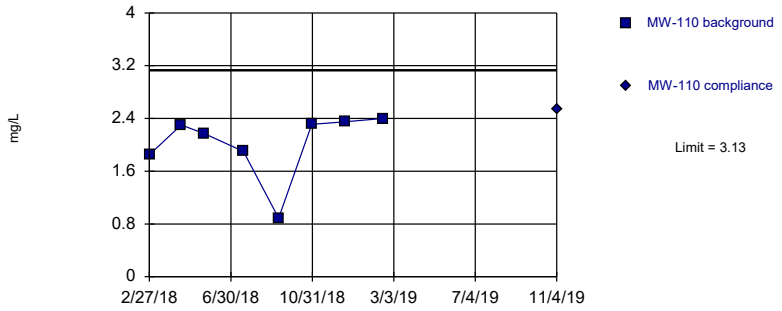
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-105	MW-105	MW-107	MW-107	MW-108	MW-108	MW-109	MW-109
2/27/2018							0.79	
2/28/2018	1.26		2.44		1.36			
4/16/2018	1.26		2.57		1.82		0.664	
5/21/2018	1.26		2.39		1.68		0.63	
7/19/2018	1.19		2.33		1.21		0.569	
9/10/2018					0.885		0.565	
9/11/2018	1.33		2.3					
10/29/2018			2.11		1.39		0.566	
10/30/2018	1.68							
12/19/2018	1.92				1.4		0.664	
12/20/2018			2.02					
2/14/2019	1.26							
2/15/2019			1.87		1.5		0.772	
11/4/2019		1.77		2.1		1.35		0.709

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.021, Std. Dev.=0.5019, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7528, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Boron Analysis Run 2/21/2020 3:17 PM View: Ash Impound III

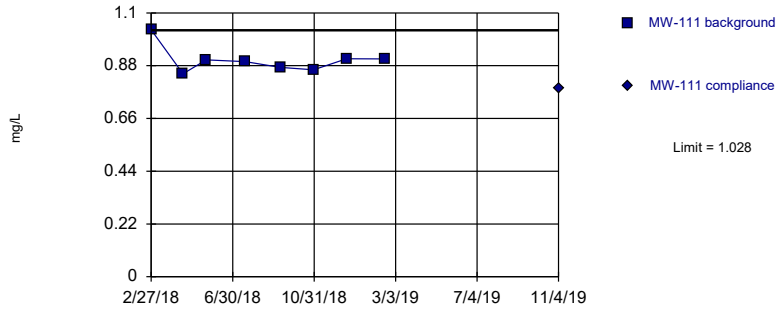
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.9038, Std. Dev.=0.05602, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7979, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Boron Analysis Run 2/21/2020 3:17 PM View: Ash Impound III

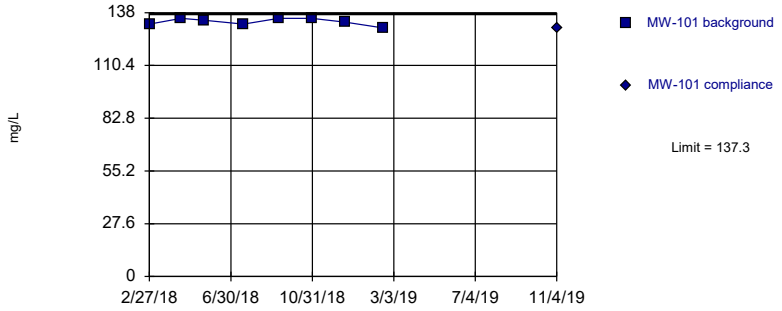
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=133.3, Std. Dev.=1.832, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8826, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 2/21/2020 3:17 PM View: Ash Impound III

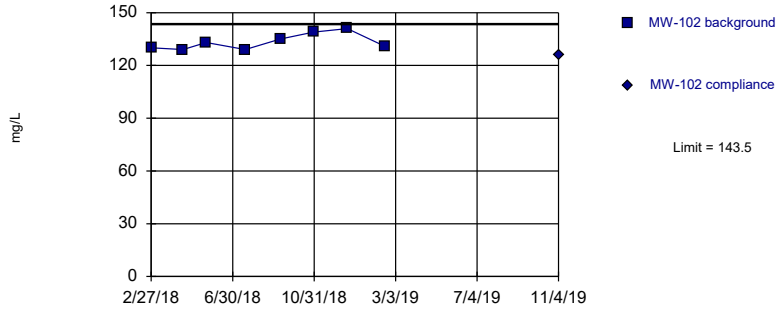
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=133.4, Std. Dev.=4.596, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8804, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 2/21/2020 3:17 PM View: Ash Impound III

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

Prediction Limit

Constituent: Boron, Calcium Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

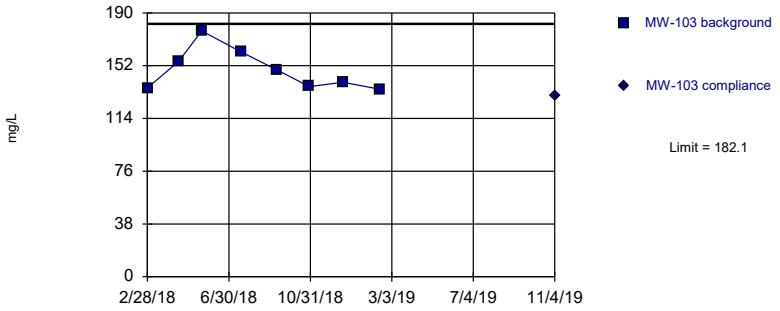
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-110	MW-110	MW-111	MW-111	MW-101	MW-101	MW-102	MW-102
2/27/2018	1.85		1.03		132		130	
4/16/2018	2.3		0.846		135		129	
5/21/2018	2.17		0.904		134		133	
7/19/2018	1.9		0.897		132		129	
9/10/2018	0.888		0.873		135		135	
10/30/2018	2.31		0.863		135		139	
12/19/2018	2.35		0.909					
12/20/2018					133		141	
2/14/2019							131	
2/15/2019	2.4		0.908		130			
11/4/2019		2.54		0.786		130		126

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=148.9, Std. Dev.=15.02, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8806, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

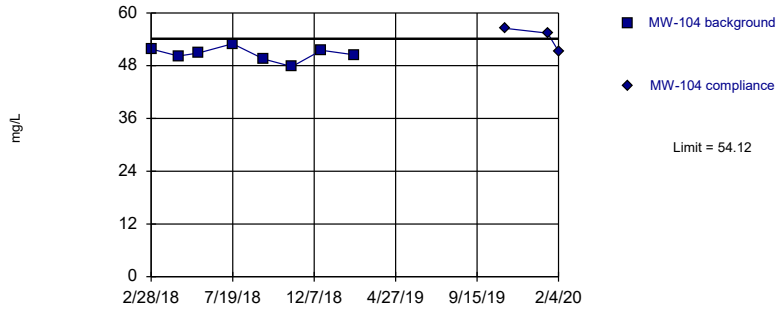
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=50.65, Std. Dev.=1.572, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.983, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

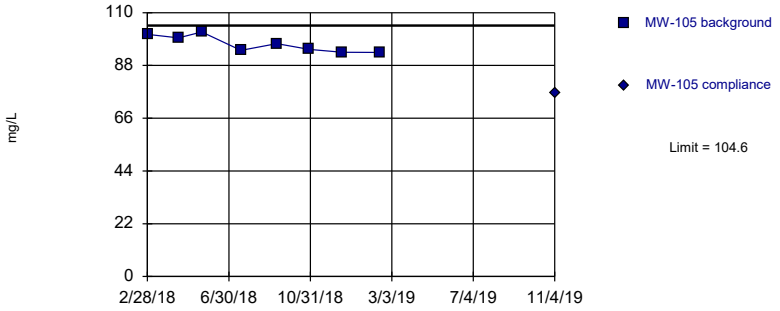
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=96.94, Std. Dev.=3.485, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8737, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

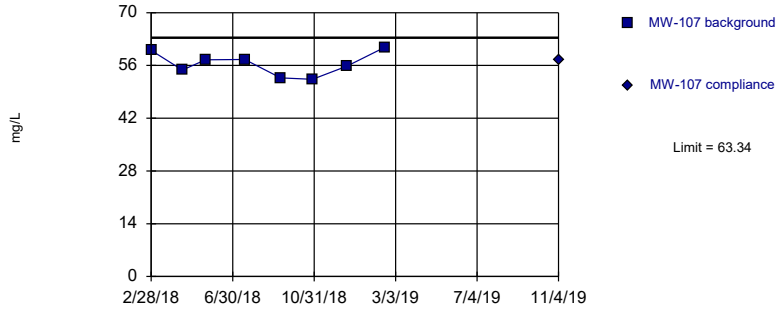
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=56.44, Std. Dev.=3.125, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9447, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Prediction Limit

Constituent: Calcium Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

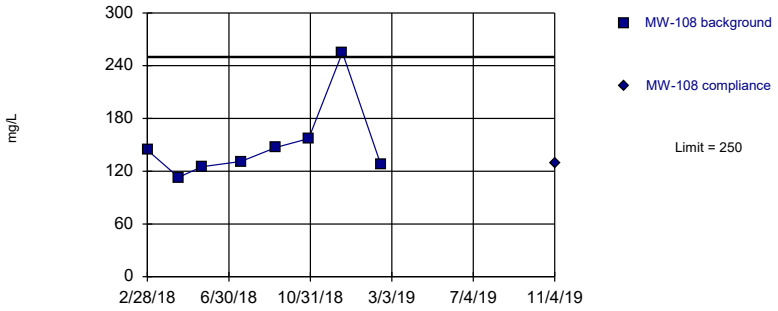
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-103	MW-103	MW-104	MW-104	MW-105	MW-105	MW-107	MW-107
2/28/2018	136		51.8		101		60	
4/16/2018	155		50.2		99.5		54.8	
5/21/2018	177		50.9		102		57.5	
7/19/2018	162		53		94.3		57.6	
9/11/2018	149		49.5		97.1		52.7	
10/29/2018							52.3	
10/30/2018	137		47.8		94.7			
12/19/2018					93.5			
12/20/2018	140		51.5				55.8	
2/14/2019	135		50.5		93.4			
2/15/2019							60.8	
11/4/2019		130		56.5		76.4		57.5
1/16/2020				55.4 1st Verification				
2/4/2020				51.3 2nd Verification				

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=12.14, Std. Dev.=1.659, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7644, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

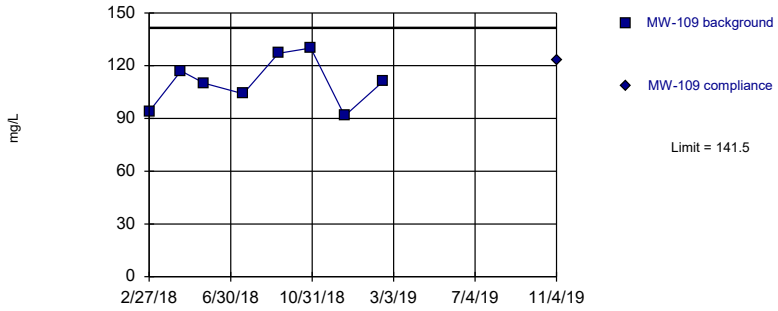
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=110.6, Std. Dev.=14.01, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9482, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

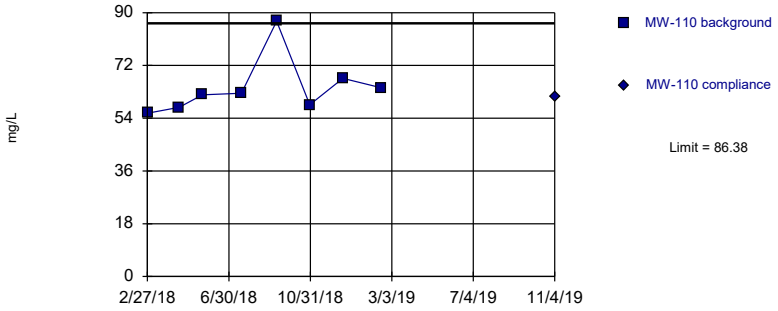
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=64.45, Std. Dev.=9.922, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7794, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

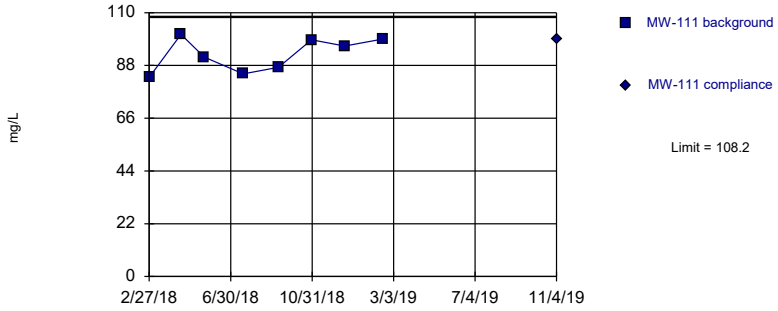
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=92.63, Std. Dev.=7.062, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9018, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Calcium Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Prediction Limit

Constituent: Calcium Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

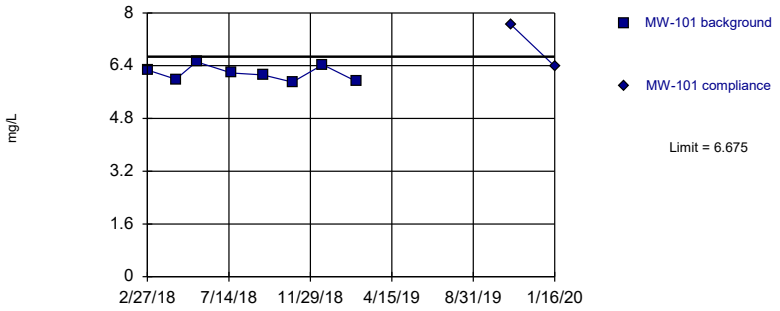
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-108	MW-108	MW-109	MW-109	MW-110	MW-110	MW-111	MW-111
2/27/2018			93.9		55.7		83	
2/28/2018	144							
4/16/2018	113		117		57.7		101	
5/21/2018	125		110		62		91.5	
7/19/2018	131		104		62.5		84.5	
9/10/2018	147		127		87.1		87.2	
10/29/2018	157		130					
10/30/2018					58.6		98.7	
12/19/2018	255		91.5		67.6		96.1	
2/15/2019	127		111		64.4		99	
11/4/2019		129		123		61.4		98.8

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.166, Std. Dev.=0.23, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9359, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Chloride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

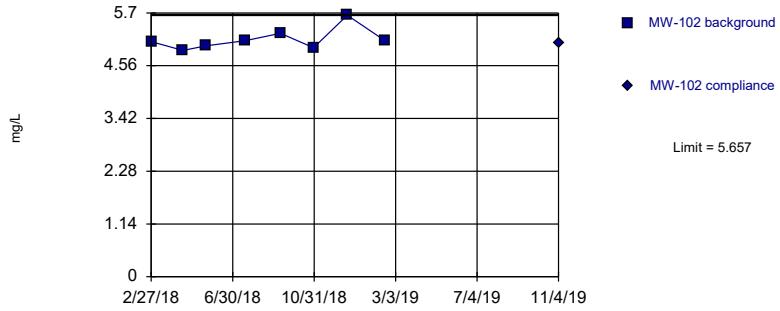
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=5.129, Std. Dev.=0.2393, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8398, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Chloride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

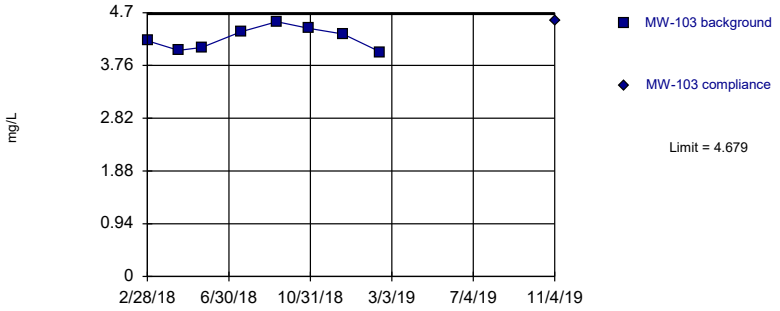
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=4.244, Std. Dev.=0.1971, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9404, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Chloride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

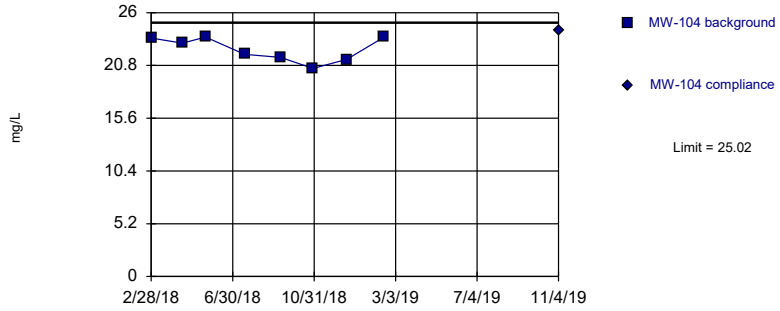
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=22.39, Std. Dev.=1.192, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8837, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Chloride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Prediction Limit

Constituent: Chloride Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

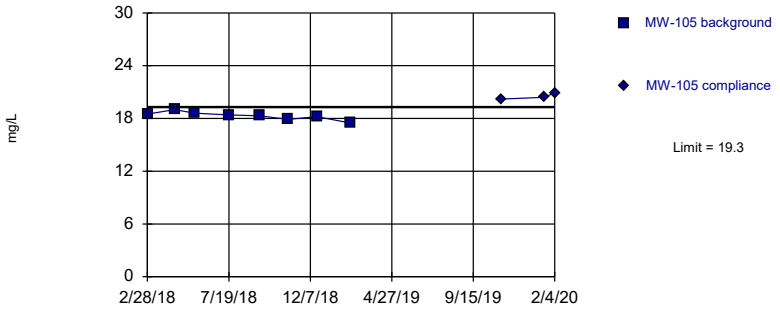
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-101	MW-101	MW-102	MW-102	MW-103	MW-103	MW-104	MW-104
2/27/2018	6.27		5.08					
2/28/2018					4.2		23.5	
4/16/2018	5.99		4.89		4.03		23	
5/21/2018	6.52		4.99		4.08		23.6	
7/19/2018	6.18		5.1		4.36		21.9	
9/10/2018	6.12		5.26					
9/11/2018					4.54		21.6	
10/30/2018	5.9		4.95		4.42		20.5	
12/20/2018	6.43		5.65		4.32		21.4	
2/14/2019			5.11		4		23.6	
2/15/2019	5.92							
11/4/2019		7.63		5.06		4.55		24.2
1/16/2020		6.38 1st Verification						

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=18.3, Std. Dev.=0.4536, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9787, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Chloride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

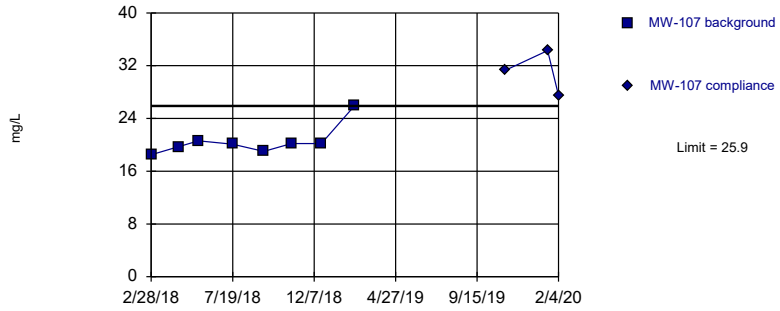
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Exceeds 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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chloride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

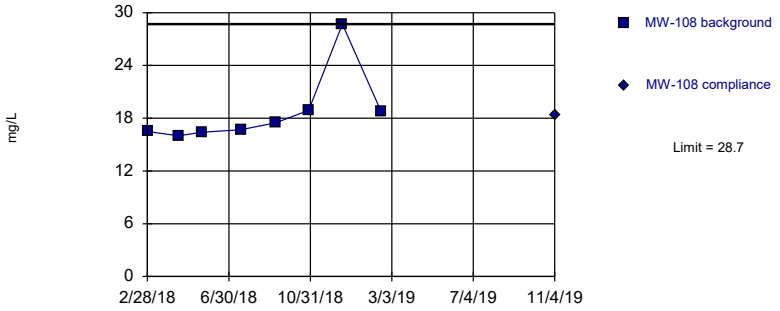
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chloride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

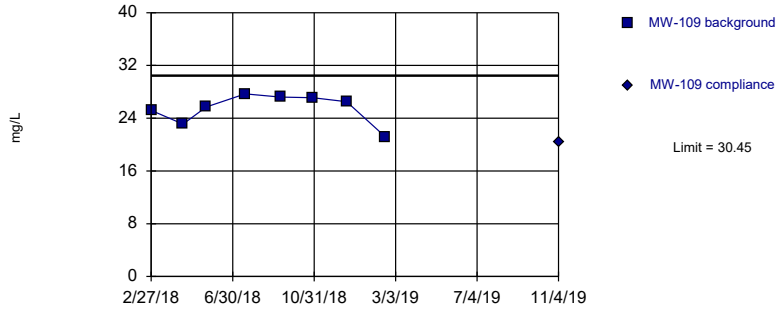
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=25.46, Std. Dev.=2.257, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8817, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Chloride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Prediction Limit

Constituent: Chloride Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

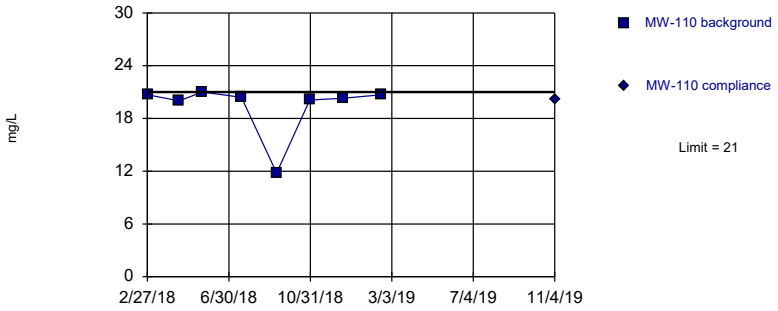
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-105	MW-105	MW-107	MW-107	MW-108	MW-108	MW-109	MW-109
2/27/2018							25.2	
2/28/2018	18.5		18.5		16.5			
4/16/2018	19		19.7		16		23.1	
5/21/2018	18.6		20.6		16.4		25.7	
7/19/2018	18.4		20.1		16.7		27.7	
9/10/2018					17.5		27.2	
9/11/2018	18.3		19					
10/29/2018			20.2		18.9		27.1	
10/30/2018	17.9							
12/19/2018	18.2				28.7		26.5	
12/20/2018			20.2					
2/14/2019	17.5							
2/15/2019			25.9		18.8		21.2	
11/4/2019		20.2		31.3		18.4		20.4
1/16/2020		20.4 1st Verification		34.3 1st Verification				
2/4/2020		20.9 2nd Verification		27.5 2nd Verification				

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chloride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

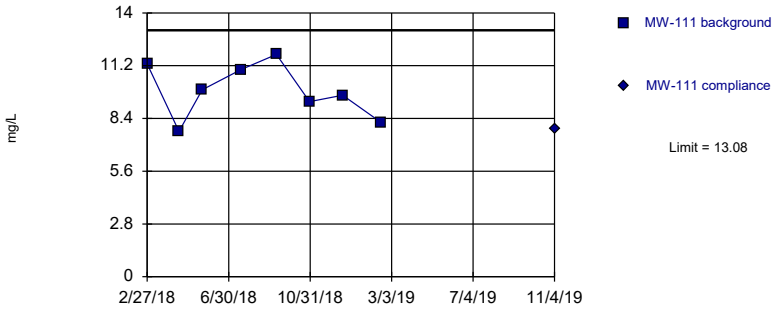
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=9.855, Std. Dev.=1.46, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9538, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Chloride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

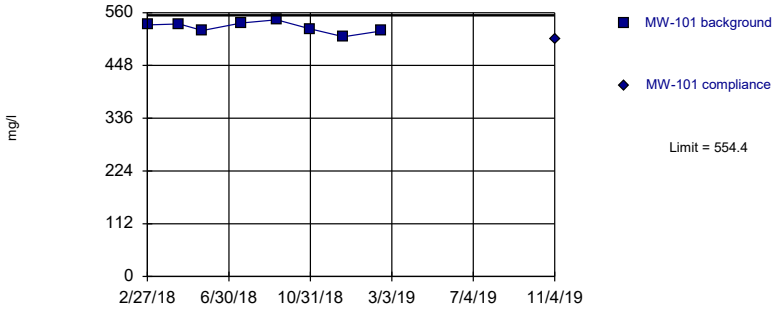
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=528.9, Std. Dev.=11.54, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9683, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Dissolved Solids Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

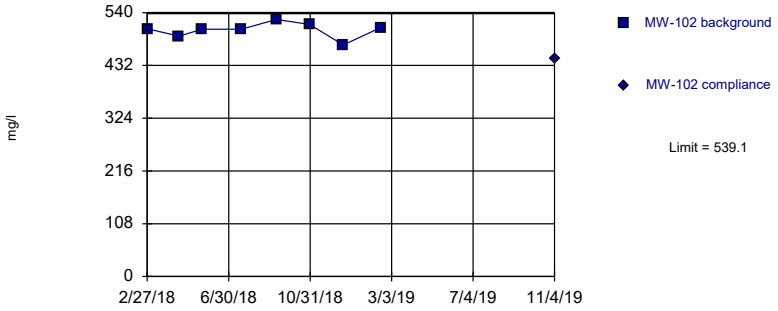
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=504.5, Std. Dev.=15.64, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.918, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Dissolved Solids Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Prediction Limit

Constituent: Chloride, Dissolved Solids Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

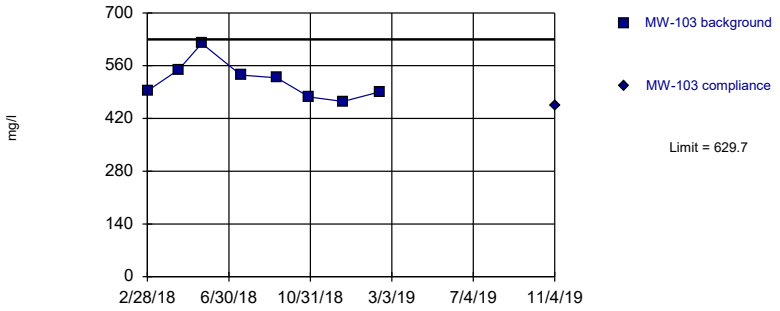
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-110	MW-110	MW-111	MW-111	MW-101	MW-101	MW-102	MW-102
2/27/2018	20.7		11.3		534		507	
4/16/2018	20		7.71		536		492	
5/21/2018	21		9.92		522		506	
7/19/2018	20.4		11		538		506	
9/10/2018	11.8		11.8		545		526	
10/30/2018	20.1		9.29		526		516	
12/19/2018	20.3		9.63					
12/20/2018					509		474	
2/14/2019							509	
2/15/2019	20.7		8.19		521			
11/4/2019		20.2		7.85		504		446

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=519.6, Std. Dev.=49.82, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9082, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Dissolved Solids Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

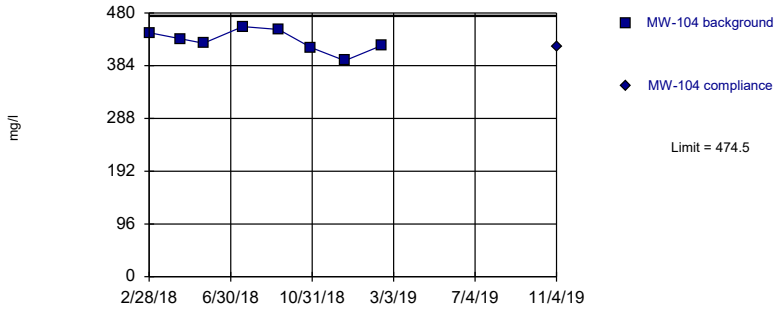
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=429.8, Std. Dev.=20.26, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9563, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Dissolved Solids Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

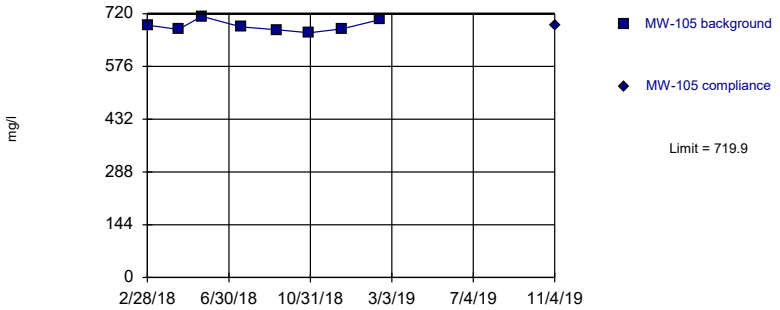
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=686.3, Std. Dev.=15.21, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9136, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Dissolved Solids Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

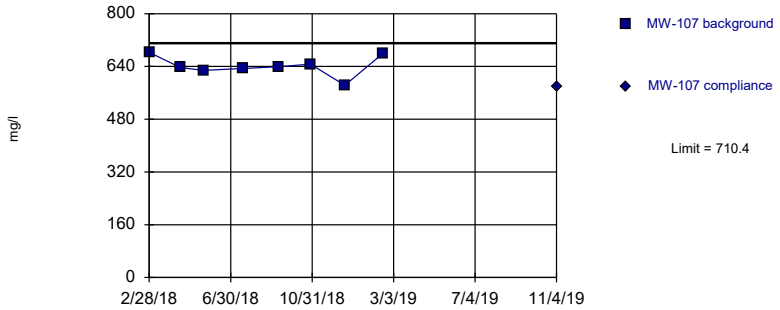
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=641.3, Std. Dev.=31.27, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9125, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Dissolved Solids Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Prediction Limit

Constituent: Dissolved Solids Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

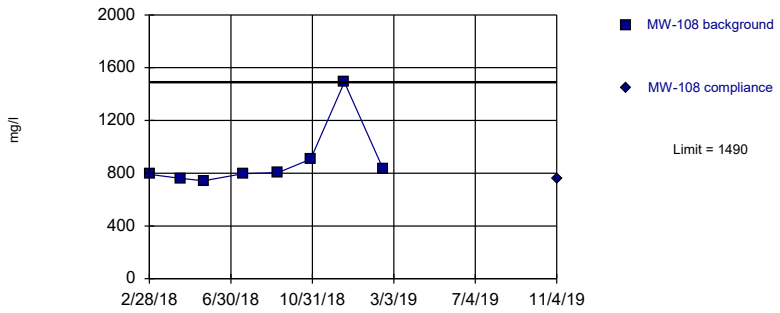
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-103	MW-103	MW-104	MW-104	MW-105	MW-105	MW-107	MW-107
2/28/2018	493		444		689		683	
4/16/2018	549		433		677		637	
5/21/2018	619		425		713		628	
7/19/2018	535		455		684		634	
9/11/2018	528		450		676		639	
10/29/2018							647	
10/30/2018	477		417		668			
12/19/2018					679			
12/20/2018	465		393				583	
2/14/2019	491		421		704			
2/15/2019							679	
11/4/2019		455		418		688		577

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

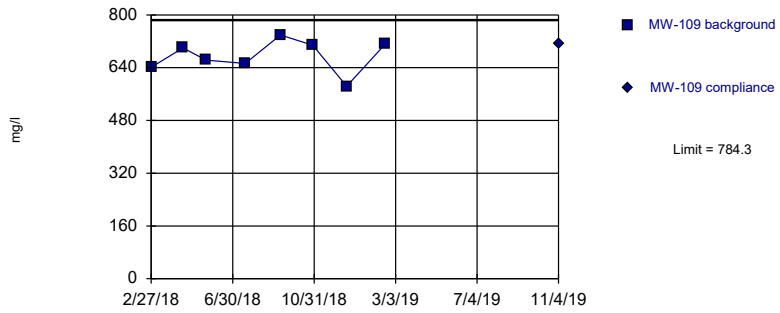
Constituent: Dissolved Solids Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=674.9, Std. Dev.=49.53, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9485, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

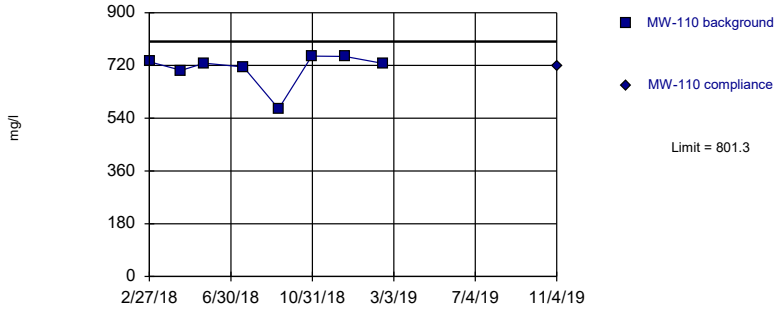
Constituent: Dissolved Solids Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on x^4 transformation): Mean=2.6e11, Std. Dev.=6.8e10, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7657, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

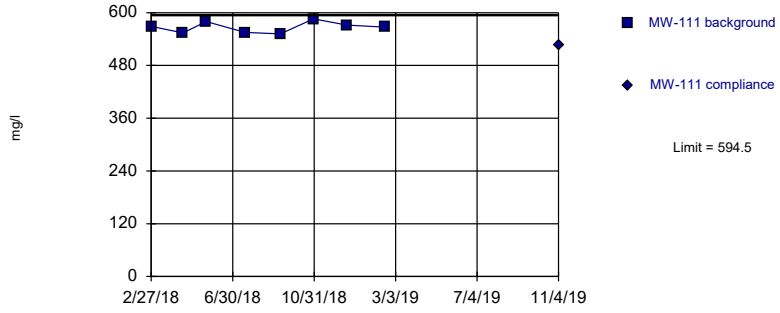
Constituent: Dissolved Solids Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=566.9, Std. Dev.=12.52, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9265, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Dissolved Solids Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Prediction Limit

Constituent: Dissolved Solids Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

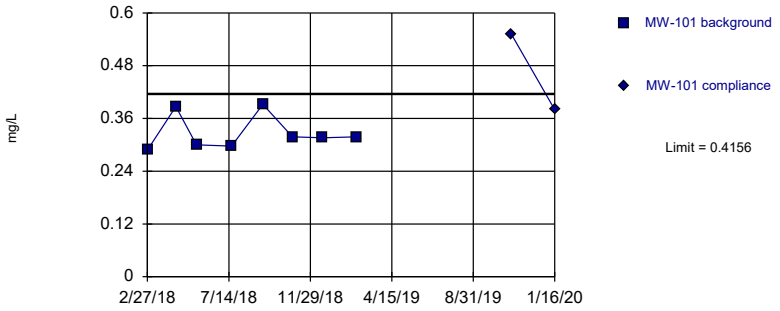
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-108	MW-108	MW-109	MW-109	MW-110	MW-110	MW-111	MW-111
2/27/2018			641		733		569	
2/28/2018	791							
4/16/2018	761		700		703		554	
5/21/2018	743		663		728		580	
7/19/2018	796		653		715		555	
9/10/2018	805		739		572		552	
10/29/2018	906		708					
10/30/2018					752		586	
12/19/2018	1490		584		751		572	
2/15/2019	835		711		727		567	
11/4/2019		760		712		717		526

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.327, Std. Dev.=0.0401, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.796, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

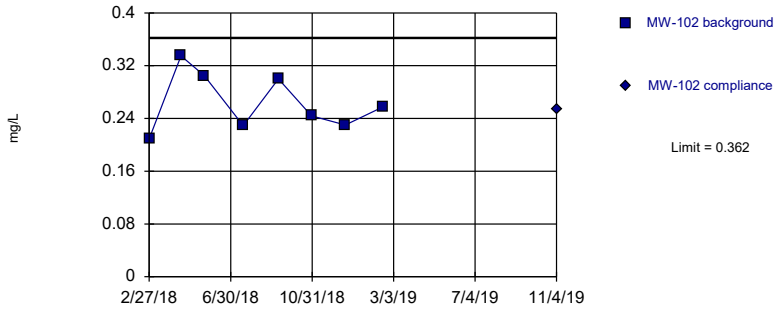
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2636, Std. Dev.=0.04452, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9243, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

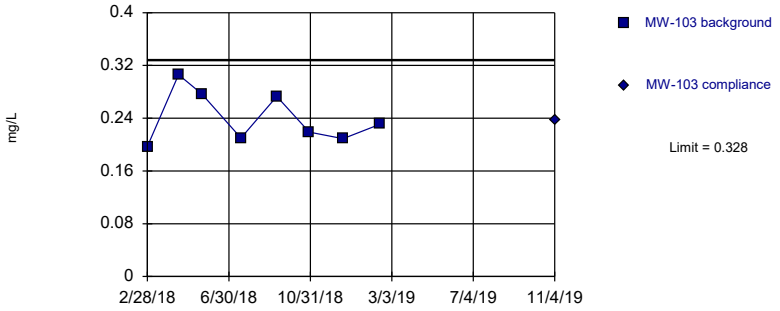
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2403, Std. Dev.=0.03972, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8898, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

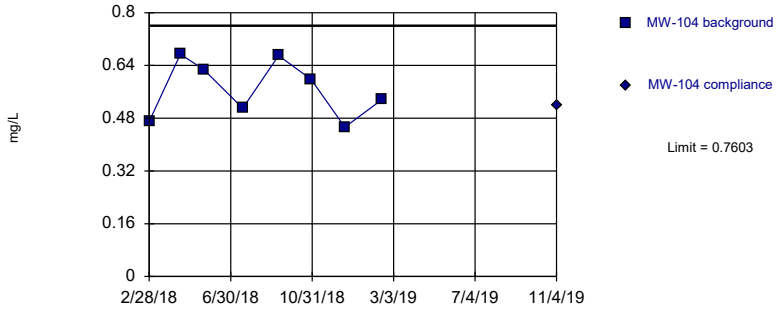
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.5675, Std. Dev.=0.08725, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9166, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Prediction Limit

Constituent: Fluoride Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

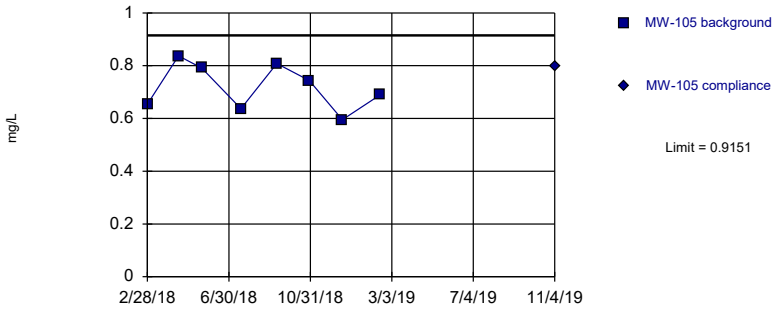
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-101	MW-101	MW-102	MW-102	MW-103	MW-103	MW-104	MW-104
2/27/2018	0.288		0.209					
2/28/2018					0.197		0.47	
4/16/2018	0.387		0.335		0.306		0.674	
5/21/2018	0.3		0.305		0.277		0.628	
7/19/2018	0.297		0.229		0.21		0.51	
9/10/2018	0.392		0.3					
9/11/2018					0.273		0.67	
10/30/2018	0.318		0.244		0.219		0.598	
12/20/2018	0.316		0.23		0.209		0.453	
2/14/2019			0.257		0.231		0.537	
2/15/2019	0.318							
11/4/2019		0.551		0.254		0.238		0.518
1/16/2020		0.38 1st Verification						

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.7195, Std. Dev.=0.08849, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9439, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

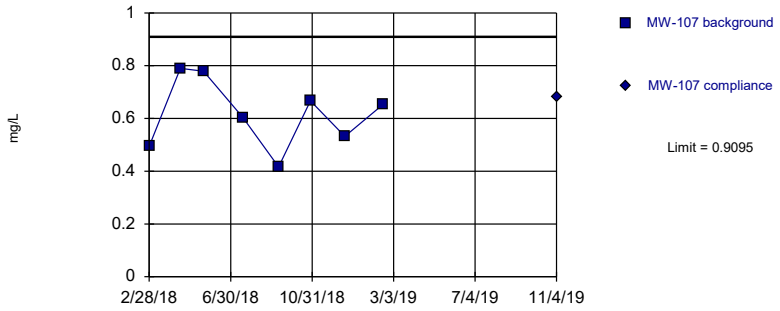
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.6168, Std. Dev.=0.1325, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9564, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

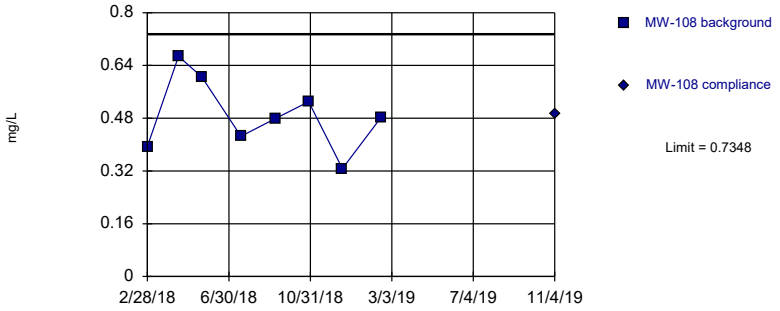
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.4889, Std. Dev.=0.1113, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9807, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

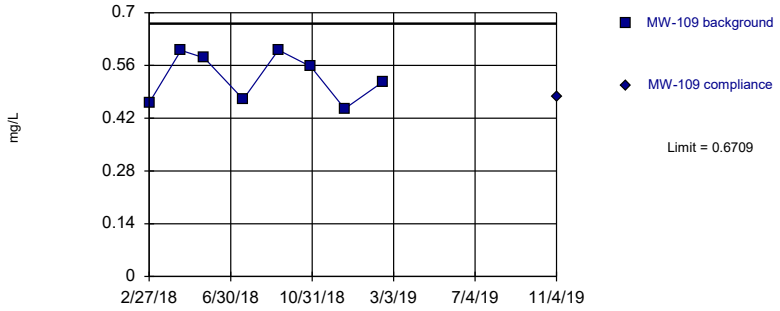
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.5289, Std. Dev.=0.06427, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8832, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Prediction Limit

Constituent: Fluoride Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

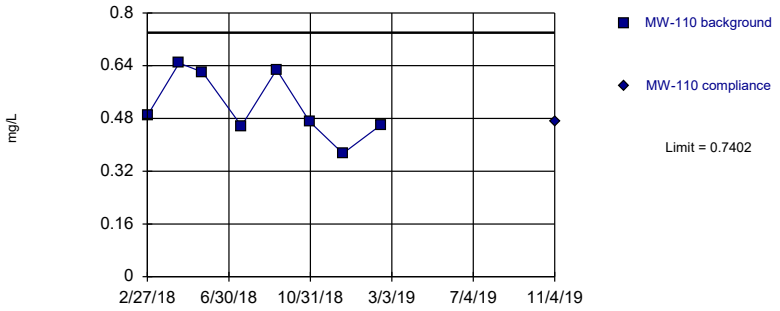
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-105	MW-105	MW-107	MW-107	MW-108	MW-108	MW-109	MW-109
2/27/2018							0.461	
2/28/2018	0.654		0.494		0.394			
4/16/2018	0.837		0.79		0.668		0.6	
5/21/2018	0.791		0.779		0.605		0.58	
7/19/2018	0.637		0.604		0.425		0.47	
9/10/2018					0.48		0.601	
9/11/2018	0.808		0.416					
10/29/2018			0.667		0.53		0.557	
10/30/2018	0.744							
12/19/2018	0.595				0.327		0.445	
12/20/2018			0.532					
2/14/2019	0.69							
2/15/2019			0.652		0.482		0.517	
11/4/2019		0.799		0.683		0.492		0.477

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.5185, Std. Dev.=0.1003, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8791, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

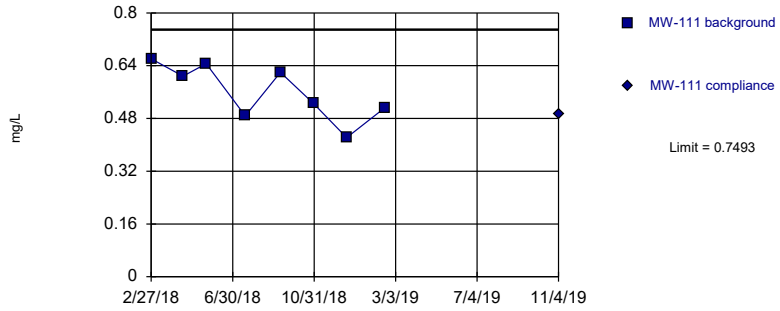
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.5604, Std. Dev.=0.08549, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9284, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Fluoride Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

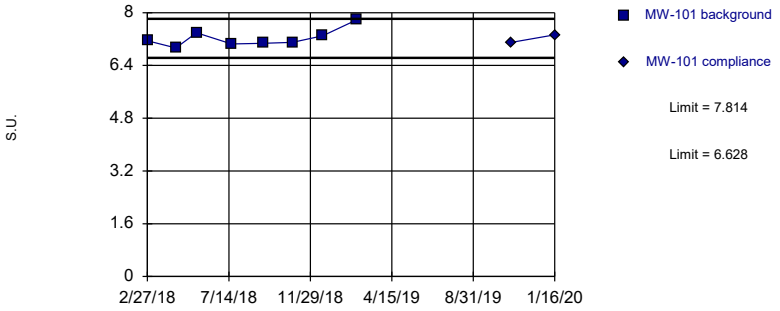
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.221, Std. Dev.=0.2682, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8777, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

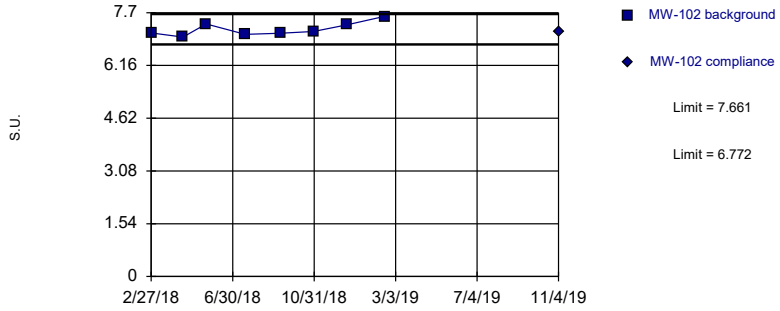
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.216, Std. Dev.=0.2011, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8971, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Prediction Limit

Constituent: Fluoride, pH Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

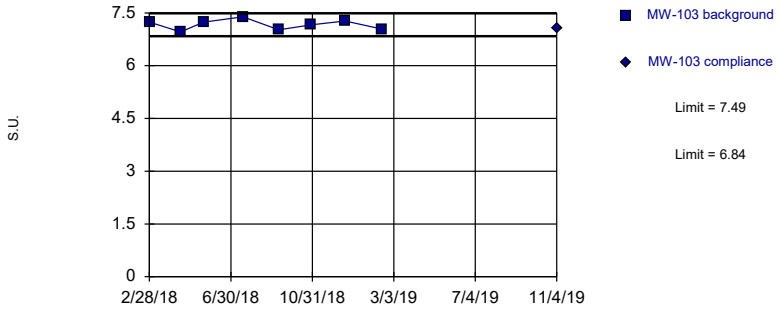
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-110	MW-110	MW-111	MW-111	MW-101	MW-101	MW-102	MW-102
2/27/2018	0.489		0.661		7.15		7.11	
4/16/2018	0.648		0.608		6.93		6.99	
5/21/2018	0.621		0.646		7.39		7.37	
7/19/2018	0.457		0.488		7.05		7.07	
9/10/2018	0.628		0.62		7.07		7.1	
10/30/2018	0.47		0.525		7.1		7.15	
12/19/2018	0.374		0.422					
12/20/2018					7.3		7.35	
2/14/2019							7.59	
2/15/2019	0.461		0.513		7.78			
11/4/2019		0.471		0.492		7.1		7.15
1/16/2020						7.33 Extra Sample		

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.165, Std. Dev.=0.1472, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9459, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

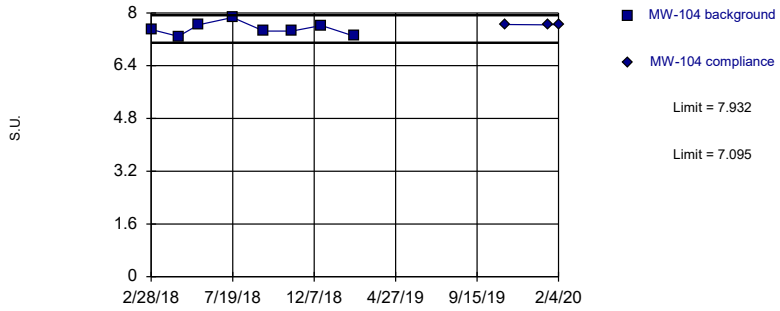
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.514, Std. Dev.=0.1894, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9364, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

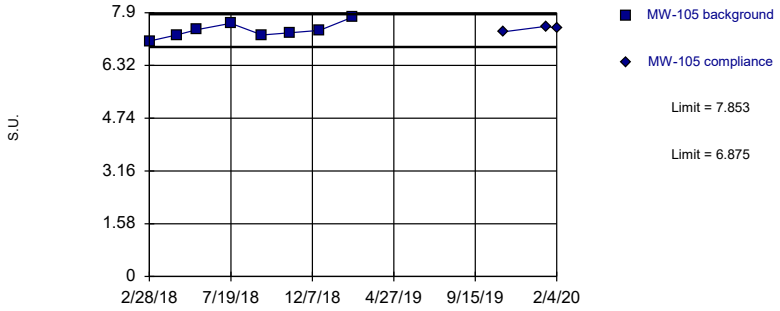
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.364, Std. Dev.=0.2213, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9553, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

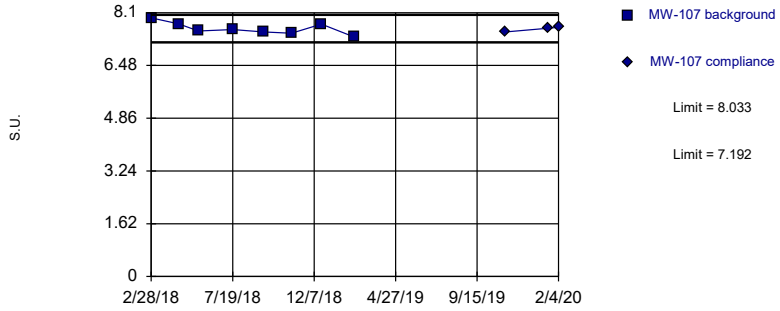
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.613, Std. Dev.=0.1905, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9567, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Prediction Limit

Constituent: pH Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

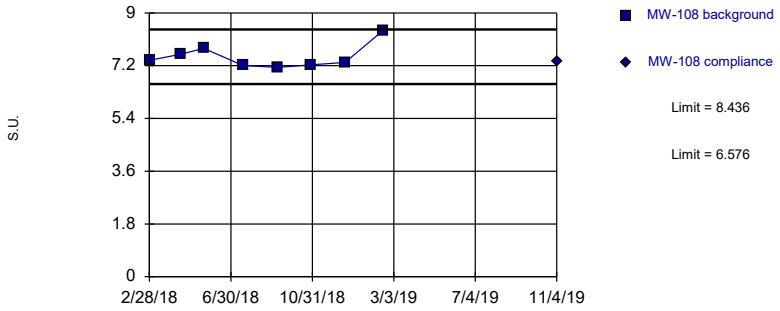
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-103	MW-103	MW-104	MW-104	MW-105	MW-105	MW-107	MW-107
2/28/2018	7.24		7.5		7.05		7.94	
4/16/2018	6.96		7.29		7.23		7.76	
5/21/2018	7.24		7.64		7.39		7.54	
7/19/2018	7.39		7.86		7.58		7.58	
9/11/2018	7.02		7.45		7.23		7.51	
10/29/2018							7.47	
10/30/2018	7.16		7.45		7.3			
12/20/2018	7.27		7.62		7.37		7.75	
2/14/2019	7.04		7.3		7.76			
2/15/2019							7.35	
11/4/2019		7.08		7.65		7.33		7.51
1/16/2020				7.64 Extra Sample		7.49 Extra Sample		7.62 Extra Sample
2/4/2020				7.65 Extra Sample		7.44 Extra Sample		7.65 Extra Sample

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.506, Std. Dev.=0.4207, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8278, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

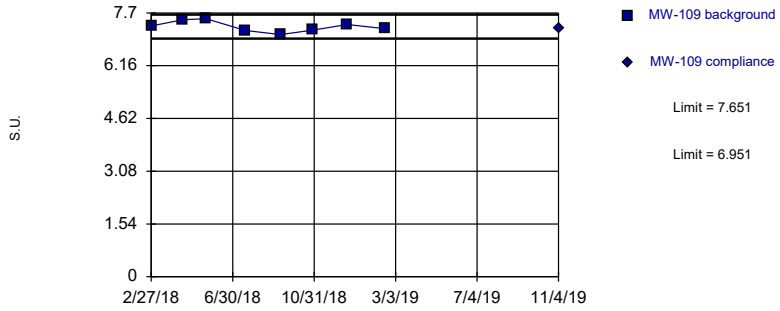
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.301, Std. Dev.=0.1583, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9525, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

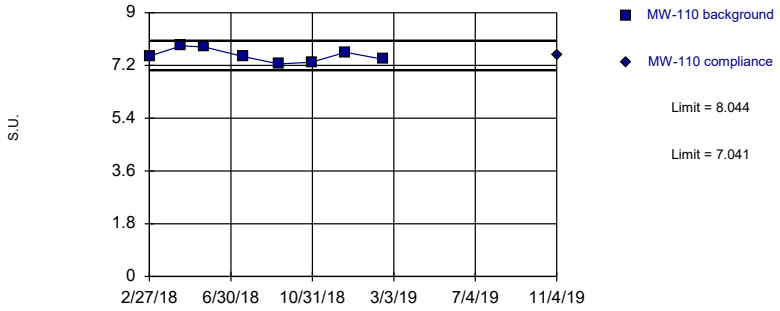
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.543, Std. Dev.=0.2271, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9407, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

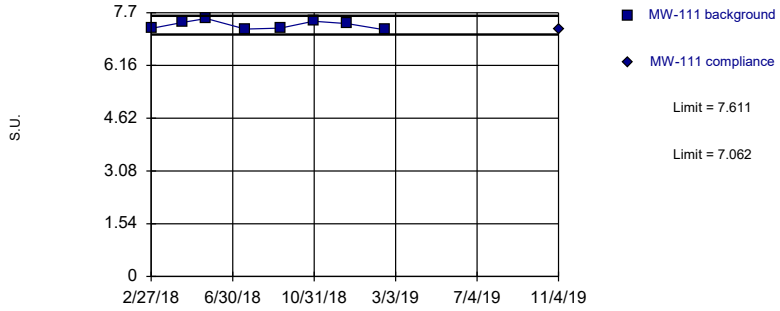
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.336, Std. Dev.=0.1243, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8949, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: pH Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Prediction Limit

Constituent: pH Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

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

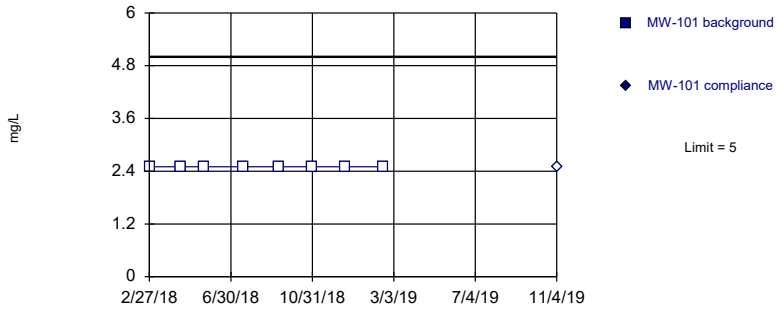
	MW-108	MW-108	MW-109	MW-109	MW-110	MW-110	MW-111	MW-111
2/27/2018			7.32		7.52		7.24	
2/28/2018	7.38							
4/16/2018	7.59		7.5		7.87		7.42	
5/21/2018	7.79		7.53		7.83		7.53	
7/19/2018	7.21		7.19		7.5		7.22	
9/10/2018	7.14		7.07		7.25		7.25	
10/29/2018	7.23		7.2					
10/30/2018					7.31		7.45	
12/20/2018	7.31		7.36		7.65		7.38	
2/15/2019	8.4		7.24		7.41		7.2	
11/4/2019		7.34		7.24		7.56		7.23

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

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

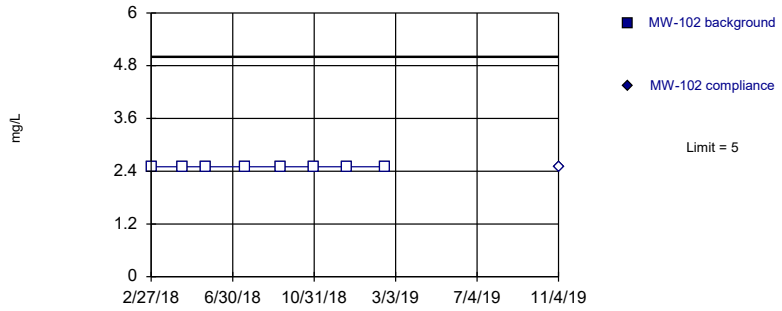
Constituent: Sulfate Analysis Run 2/21/2020 3:18 PM View: Ash Impound III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

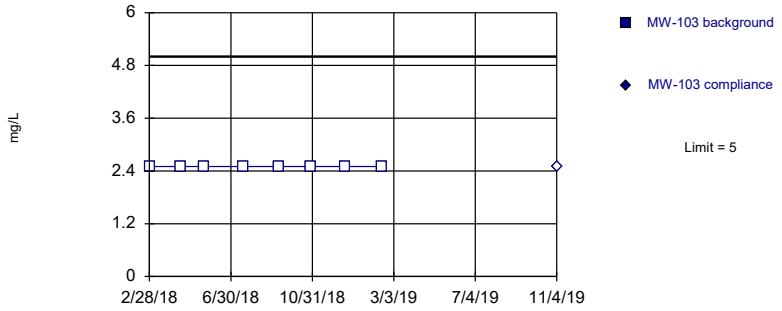
Constituent: Sulfate Analysis Run 2/21/2020 3:18 PM View: Ash Impound III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

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

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

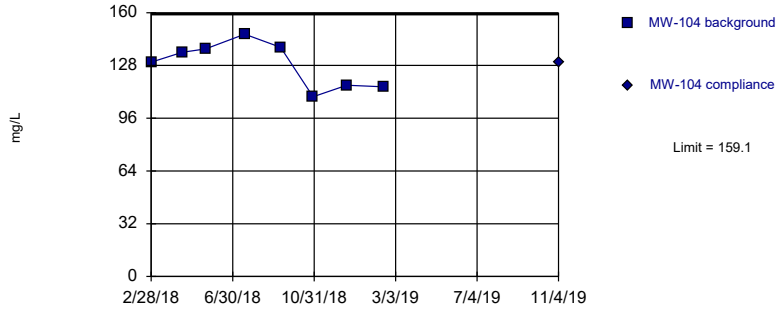
Constituent: Sulfate Analysis Run 2/21/2020 3:18 PM View: Ash Impound III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=128.8, Std. Dev.=13.73, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9158, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Sulfate Analysis Run 2/21/2020 3:18 PM View: Ash Impound III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Sulfate Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

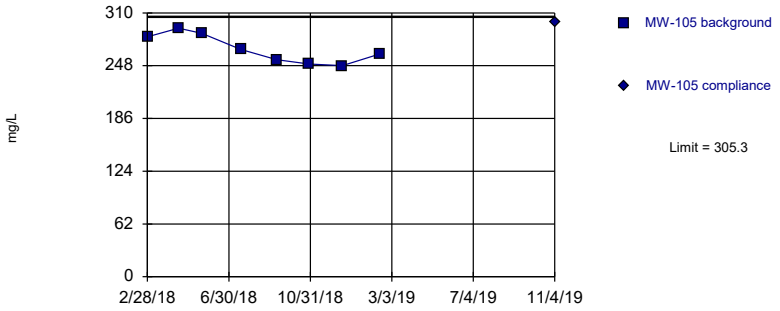
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-101	MW-101	MW-102	MW-102	MW-103	MW-103	MW-104	MW-104
2/27/2018	<5		<5					
2/28/2018					<5		130	
4/16/2018	<5		<5		<5		136	
5/21/2018	<5		<5		<5		138	
7/19/2018	<5		<5		<5		147	
9/10/2018	<5		<5					
9/11/2018					<5		139	
10/30/2018	<5		<5		<5		109	
12/20/2018	<5		<5		<5		116	
2/14/2019			<5		<5		115	
2/15/2019	<5							
11/4/2019		<5		<5		<5		130

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=267.8, Std. Dev.=17.01, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9131, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Sulfate Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

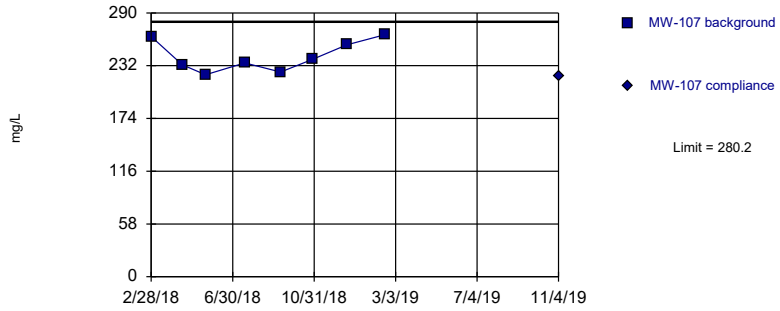
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=242.4, Std. Dev.=17.14, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9005, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Sulfate Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

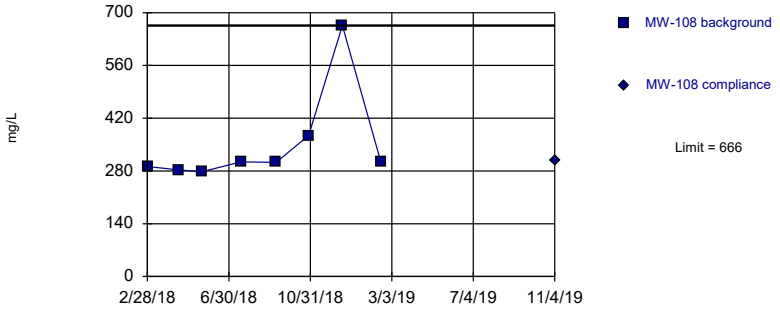
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

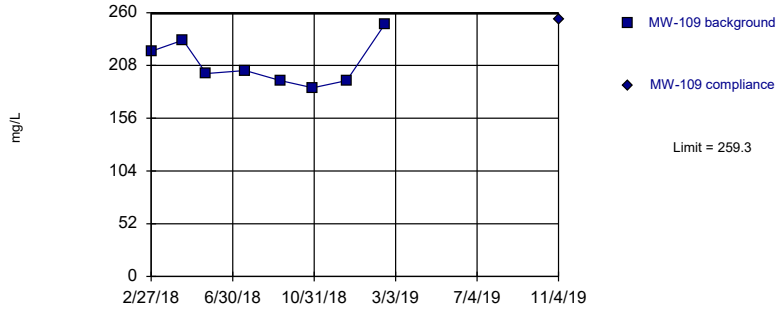
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=209.9, Std. Dev.=22.35, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.897, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Sulfate Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Prediction Limit

Constituent: Sulfate Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

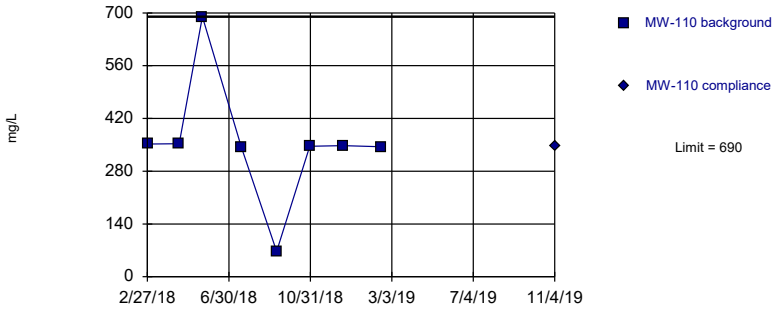
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-105	MW-105	MW-107	MW-107	MW-108	MW-108	MW-109	MW-109
2/27/2018							222	
2/28/2018	282		264		292			
4/16/2018	292		233		283		233	
5/21/2018	286		222		278		200	
7/19/2018	267		235		304		203	
9/10/2018					303		193	
9/11/2018	255		225					
10/29/2018			239		374		186	
10/30/2018	250							
12/19/2018	248				666		193	
12/20/2018			255					
2/14/2019	262							
2/15/2019			266		303		249	
11/4/2019		299		221		308		253

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

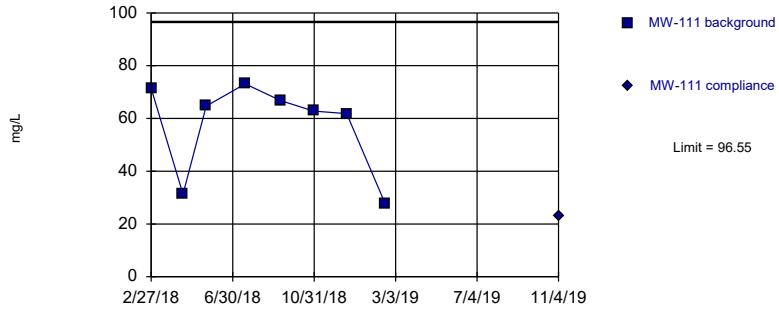
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=57.46, Std. Dev.=17.69, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7706, critical = 0.749. Kappa = 2.21 (c=7, w=10, 1 of 3, event alpha = 0.05132). Report alpha = 0.0007523.

Constituent: Sulfate Analysis Run 2/21/2020 3:18 PM View: Ash Impound III

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

Prediction Limit

Constituent: Sulfate Analysis Run 2/21/2020 3:20 PM View: Ash Impound III

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

	MW-110	MW-110	MW-111	MW-111
2/27/2018	352		71.4	
4/16/2018	353		31.3	
5/21/2018	690		64.7	
7/19/2018	343		73.1	
9/10/2018	67.4		66.8	
10/30/2018	346		62.8	
12/19/2018	348		61.8	
2/15/2019	345		27.8	
11/4/2019		347		22.8

Prediction Limit

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr Printed 2/21/2020, 3:20 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	MW-101	0.2	n/a	11/4/2019	0.1ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-102	0.2	n/a	11/4/2019	0.1ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-103	0.2	n/a	11/4/2019	0.1ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-104	1.361	n/a	11/4/2019	1.19	No	8	0	No	0.000...	Param Intra 1 of 3
Boron (mg/L)	MW-105	1.92	n/a	11/4/2019	1.77	No	8	0	n/a	0.005912	NP Intra (normality) ...
Boron (mg/L)	MW-107	2.771	n/a	11/4/2019	2.1	No	8	0	No	0.000...	Param Intra 1 of 3
Boron (mg/L)	MW-108	2.035	n/a	11/4/2019	1.35	No	8	0	No	0.000...	Param Intra 1 of 3
Boron (mg/L)	MW-109	0.8503	n/a	11/4/2019	0.709	No	8	0	No	0.000...	Param Intra 1 of 3
Boron (mg/L)	MW-110	3.13	n/a	11/4/2019	2.54	No	8	0	No	0.000...	Param Intra 1 of 3
Boron (mg/L)	MW-111	1.028	n/a	11/4/2019	0.786	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-101	137.3	n/a	11/4/2019	130	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-102	143.5	n/a	11/4/2019	126	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-103	182.1	n/a	11/4/2019	130	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-104	54.12	n/a	2/4/2020	51.3	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-105	104.6	n/a	11/4/2019	76.4	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-107	63.34	n/a	11/4/2019	57.5	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-108	250	n/a	11/4/2019	129	No	8	0	sqrt(x)	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-109	141.5	n/a	11/4/2019	123	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-110	86.38	n/a	11/4/2019	61.4	No	8	0	No	0.000...	Param Intra 1 of 3
Calcium (mg/L)	MW-111	108.2	n/a	11/4/2019	98.8	No	8	0	No	0.000...	Param Intra 1 of 3
Chloride (mg/L)	MW-101	6.675	n/a	1/16/2020	6.38	No	8	0	No	0.000...	Param Intra 1 of 3
Chloride (mg/L)	MW-102	5.657	n/a	11/4/2019	5.06	No	8	0	No	0.000...	Param Intra 1 of 3
Chloride (mg/L)	MW-103	4.679	n/a	11/4/2019	4.55	No	8	0	No	0.000...	Param Intra 1 of 3
Chloride (mg/L)	MW-104	25.02	n/a	11/4/2019	24.2	No	8	0	No	0.000...	Param Intra 1 of 3
Chloride (mg/L)	**MW-105**	**19.3**	**n/a**	**2/4/2020**	**20.9**	**Yes**	**8**	**0**	**No**	**0.000...**	**Param Intra 1 of 3**
Chloride (mg/L)	**MW-107**	**25.9**	**n/a**	**2/4/2020**	**27.5**	**Yes**	**8**	**0**	**n/a**	**0.005912**	**NP Intra (normality) ...**
Chloride (mg/L)	MW-108	28.7	n/a	11/4/2019	18.4	No	8	0	n/a	0.005912	NP Intra (normality) ...
Chloride (mg/L)	MW-109	30.45	n/a	11/4/2019	20.4	No	8	0	No	0.000...	Param Intra 1 of 3
Chloride (mg/L)	MW-110	21	n/a	11/4/2019	20.2	No	8	0	n/a	0.005912	NP Intra (normality) ...
Chloride (mg/L)	MW-111	13.08	n/a	11/4/2019	7.85	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-101	554.4	n/a	11/4/2019	504	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-102	539.1	n/a	11/4/2019	446	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-103	629.7	n/a	11/4/2019	455	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-104	474.5	n/a	11/4/2019	418	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-105	719.9	n/a	11/4/2019	688	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-107	710.4	n/a	11/4/2019	577	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-108	1490	n/a	11/4/2019	760	No	8	0	n/a	0.005912	NP Intra (normality) ...
Dissolved Solids (mg/l)	MW-109	784.3	n/a	11/4/2019	712	No	8	0	No	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-110	801.3	n/a	11/4/2019	717	No	8	0	x^4	0.000...	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-111	594.5	n/a	11/4/2019	526	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-101	0.4156	n/a	1/16/2020	0.38	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-102	0.362	n/a	11/4/2019	0.254	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-103	0.328	n/a	11/4/2019	0.238	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-104	0.7603	n/a	11/4/2019	0.518	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-105	0.9151	n/a	11/4/2019	0.799	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-107	0.9095	n/a	11/4/2019	0.683	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-108	0.7348	n/a	11/4/2019	0.492	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-109	0.6709	n/a	11/4/2019	0.477	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-110	0.7402	n/a	11/4/2019	0.471	No	8	0	No	0.000...	Param Intra 1 of 3
Fluoride (mg/L)	MW-111	0.7493	n/a	11/4/2019	0.492	No	8	0	No	0.000...	Param Intra 1 of 3

Prediction Limit

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr Printed 2/21/2020, 3:20 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
pH (S.U.)	MW-101	7.814	6.628	1/16/2020	7.33	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-102	7.661	6.772	11/4/2019	7.15	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-103	7.49	6.84	11/4/2019	7.08	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-104	7.932	7.095	2/4/2020	7.65	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-105	7.853	6.875	2/4/2020	7.44	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-107	8.033	7.192	2/4/2020	7.65	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-108	8.436	6.576	11/4/2019	7.34	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-109	7.651	6.951	11/4/2019	7.24	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-110	8.044	7.041	11/4/2019	7.56	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-111	7.611	7.062	11/4/2019	7.23	No	8	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	MW-101	5	n/a	11/4/2019	2.5ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
Sulfate (mg/L)	MW-102	5	n/a	11/4/2019	2.5ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
Sulfate (mg/L)	MW-103	5	n/a	11/4/2019	2.5ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
Sulfate (mg/L)	MW-104	159.1	n/a	11/4/2019	130	No	8	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	MW-105	305.3	n/a	11/4/2019	299	No	8	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	MW-107	280.2	n/a	11/4/2019	221	No	8	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	MW-108	666	n/a	11/4/2019	308	No	8	0	n/a	0.005912	NP Intra (normality) ...
Sulfate (mg/L)	MW-109	259.3	n/a	11/4/2019	253	No	8	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	MW-110	690	n/a	11/4/2019	347	No	8	0	n/a	0.005912	NP Intra (normality) ...
Sulfate (mg/L)	MW-111	96.55	n/a	11/4/2019	22.8	No	8	0	No	0.000...	Param Intra 1 of 3

ATTACHMENT 2

Sanitas™ Configuration Settings

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

Exclude data flags: i

Data Reading Options

- (•) Individual Observations
- ( ) Mean of Each: ( ) Month
- ( ) Median of Each: ( ) Season

Non-Detect / Trace Handling...

Setup Seasons...

[ ] Automatically Process Resamples...

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

- [ ] Black and White Output
- [x] Four Plots Per Page
  - [x] Always Combine Data Pages...
  - [x] Include Tick Marks on Data Page
  - [ ] Use Constituent Name for Graph Title
- [ ] Draw Border Around Text Reports and Data Pages
- [x] Enlarge/Reduce Fonts (Graphs): 100%
- [x] Enlarge/Reduce Fonts (Data/Text Reports): 100%
- [x] Wide Margins (on reports without explicit setting)
- [ ] Use CAS# (Not Const. Name)
- [ ] Truncate File Names to 20 Characters
- [ ] Include Limit Lines when found in Database...
- [x] Show Deselected Data on Time Series Lighter
- [ ] Show Deselected Data on all Data Pages Lighter

Setup Symbols and Colors...

- [x] Prompt to Overwrite/Append Summary Tables
- [ ] Round Limits to 2 Sig. Digits (when not set in data file)
- [ ] User-Set Scale
- [x] Indicate Background Data
- [ ] Show Exact Dates
- [ ] Thick Plot Lines

Zoom Factor: 200%

Output Decimal Precision

- ( ) Less Precision
- (•) Normal Precision
- ( ) More Precision

- [x] Store Print Jobs in Multiple Constituent Mode

Store All Print Jobs...

Printer: Adobe PDF

Printers...

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

☐ Use Modified Alpha... 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: 10

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

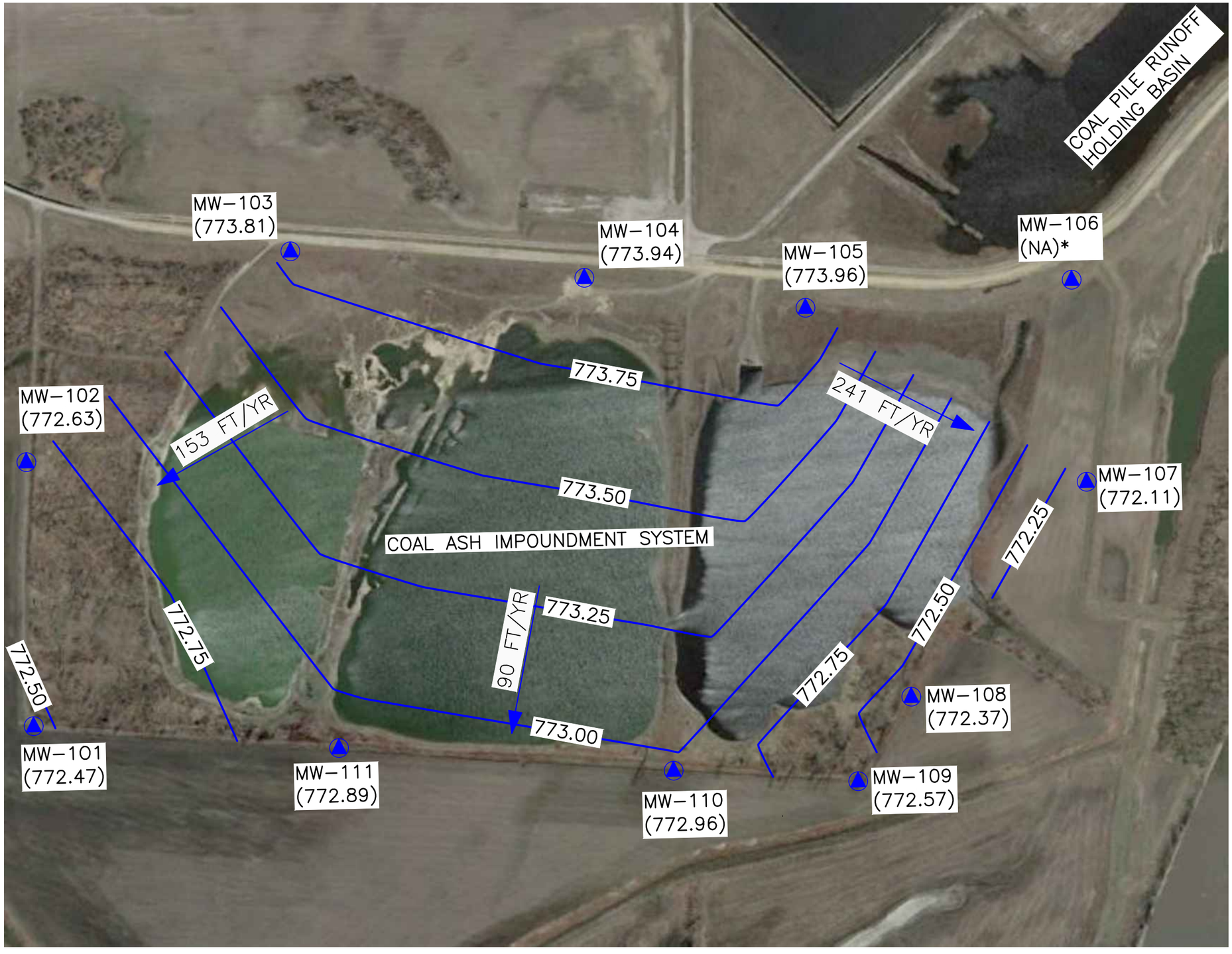
- [ ] Combine Wells
- [ ] Combine Dates
- (•) Use Default Constituent Names
- ( ) Use Constituent Definition File Edit

- [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:

- MW-109 (764.67) — MONITORING WELL (GROUNDWATER ELEVATION)
- 766.50 — GROUNDWATER SURFACE ELEVATIONS (REPRESENTATIVE OF THIS UNIT)
- 90 FT/YR — DIRECTION OF GROUNDWATER FLOW AND CALCULATED FLOW RATE (FT/YR)

NOTES:

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED OCTOBER 22, 2016.
4. GROUNDWATER ELEVATIONS MEASURED ON NOVEMBER 4, 2019.

* Destroyed by flood

400 0 400 800

SCALE FEET

REV.	DATE	CK. BY
0	-	-
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-

SHEET TITLE: POTENTIOMETRIC SURFACE MAP ASH IMPOUNDMENT (NOVEMBER 2019)

PROJECT TITLE: 2019 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM

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

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

PROJ. NO.	DWN. BY:	C/A RVW BY:
27217413.00	DAW	JRR
DSN. BY:	CHK. BY:	PROJ. MGR
DAW	JRF	JRF

CADD FILE: 27217413.00_FIG 6L_ASH IMPOUNDMENT_19-11-4.DWG

DATE: 12/14/22

FIGURE 1

N:\KCPL\Projects\Groundwater\DWG\Iatan\2019\GW Monitoring\Ash Impoundment\27217413.00_FIG 6L_Ash Impoundment_19-11-4.dwg Dec 14, 2022 - 9:24am Layout Name: 6K By: 5412|ds

LEGEND:

- MW-109 (764.67) — MONITORING WELL (GROUNDWATER ELEVATION)
- 766.50 — GROUNDWATER SURFACE ELEVATIONS (REPRESENTATIVE OF THIS UNIT)
- 50 FT/YR — DIRECTION OF GROUNDWATER FLOW AND CALCULATED FLOW RATE (FY/YR

NOTES:

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED OCTOBER 22, 2016.
4. GROUNDWATER ELEVATIONS MEASURED ON MAY 20, 2020.

* Destroyed by flood

400 0 400 800

SCALE FEET

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

SHEET TITLE
POTENTIOMETRIC SURFACE MAP
ASH IMPOUNDMENT (MAY 2020)

PROJECT TITLE
2020 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM

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

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

PROJ. NO. 27213167.20
DSN. BY: DAW
DWN. BY: MBJ
CHK. BY: JRF
O/A RVW BY: JRR
PROJ. MGR: JRF

CADD FILE:
27213167.20_ASH IMPOUNDMENT_MAY 20.DWG

DATE:
12/14/22

FIGURE
2

N:\KCPL\Projects\Groundwater\DWG\Iatan\2020\Groundwater\Ash Impoundment\27213167.20_Ash Impoundment_MAY 20.dwg Dec 14, 2022 - 9:26am Layout Name: 6K By: 5412jds