Entergy Arkansas, LLC
White Bluff Steam Electric Station
Landfill Cells 1-4

2022 Annual Groundwater Monitoring and Corrective Action Report

Prepared in Compliance with the EPA Final Rule for the Disposal of Coal Combustion Residuals Title 40 CFR Part 257

Prepared for:

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January 31, 2023

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EXECUTIVE SUMMARY

Entergy Arkansas, LLC (Entergy), operates a coal ash disposal landfill (Landfill) for the disposal of coal combustion residuals (CCR) at the White Bluff Steam Electric Station (Plant) located near Redfield, Arkansas. The Landfill receives CCR generated from the combustion of coal at the Plant. Management of the CCR at the Landfill is performed pursuant to national criteria established in Title 40 of the Code of Federal Regulations (40 CFR), Part 257 (CCR Rule), effective April 19, 2015 and subsequent revisions to the CCR Rule.

The Plant conducted two semi-annual detection monitoring events in 2022 for the Landfill CCR unit monitoring well network per 40 CFR § 257.94. The statistical analyses completed for the second semi-annual 2021 and first semi-annual 2022 sampling event analytical data identified potential statistically significant increases (SSIs); therefore, alternate source demonstrations (ASDs) were performed for both semi-annual detection monitoring events and are attached to this report. Each of the ASDs performed were successful which resulted in the Landfill continuing to operate under the detection monitoring program. The Landfill CCR unit operated under the detection monitoring program (40 CFR § 257.94) during the duration of 2022.

1. INTRODUCTION

Entergy Arkansas, LLC (Entergy), operates the Landfill for the disposal of CCRs at the Plant located near Redfield, Arkansas (Lat: 34.421658 / Long: -92.139455). The Landfill receives CCR generated from the combustion of coal at the Plant. The CCR Landfill is managed in accordance with the national criteria established by the CCR Rule. Entergy installed a groundwater monitoring system at the Landfill that is subject to the groundwater monitoring and corrective action requirements provided under §§257.90 through 257.98 of the CCR rule. In accordance with §257.90(e) of the CCR rule, Entergy must prepare an annual report that provides information regarding the groundwater monitoring and corrective action program at the Landfill.

2. GROUNDWATER MONITORING SYSTEM

The Landfill's groundwater monitoring system consists of 23 monitoring wells as shown on Figure 1 included in Appendix A. Pursuant to §257.91(f) of the CCR rule, a qualified Arkansas-registered professional engineer has certified the groundwater monitoring system, which was designed and constructed to meet the requirements of §257.91.

3. INSTALLED OR DECOMISSIONED WELLS DURING 2022

Entergy did not install any new wells or decommission any existing wells in the certified groundwater monitoring system during 2022.

4. GROUNDWATER MONITORING DATA

In accordance with §257.90(e)(3), all monitoring data obtained under §§257.90 through 257.98 during 2022 are provided in Appendix B. Data include:

- Summary of the number of groundwater samples that were collected for analysis for each background and downgradient well;
- Dates the samples were collected; and
- Whether the sample was collected as part of detection or assessment monitoring.

5. STATUS SUMMARY OF THE 2022 GROUNDWATER MONITORING PROGRAM

Groundwater monitoring was performed in accordance with the detection monitoring requirements of §257.94. A summary of activities related to groundwater detection monitoring performed during 2022 is provided in the list below:

- In accordance with §257.94(b), semiannual detection monitoring was performed during the first half (June) and second half (November and December) of 2022 for analysis of Appendix III parameters (boron, calcium, chloride, fluoride, pH, sulfate and total dissolved solids (TDS)).

- Statistical evaluation of the semiannual detection monitoring data was performed in accordance with the statistical method certified by a qualified Arkansas-registered professional engineer. The certified statistical method has been posted to Entergy's CCR Rule Compliance Data and Information website.

- In 2021, Entergy completed a successful alternate source demonstration (ASD) per §257.94(e)(2) in response to potential statistically significant increases (SSIs) identified during the statistical evaluation of the data generated from the second half 2021 semi-annual detection monitoring event. As required by §257.94(e)(2), a copy of the ASD is included in Appendix C. Based on the successful evaluation conducted and results presented in the ASD, Entergy continued with detection monitoring in accordance with §257.94.

- The first half 2022 semi-annual detection monitoring sampling was performed during June 2022. Based on statistical evaluation of the data potential SSIs were identified for boron, calcium, chloride, fluoride, and total dissolved solids (TDS).

- Entergy completed a successful ASD per §257.94(e)(2) for the potential SSIs identified during the first half 2022 semi-annual detection monitoring event. As required by §257.94(e)(2), a copy of the ASD is included in Appendix C. Entergy continued with detection monitoring in accordance with §257.94.

- The second half 2022 semi-annual detection monitoring sampling was performed during December 2022. Statistical evaluation of the data will be performed during 2022 to determine if any SSIs are identified in accordance with §257.93(h).

- No problems were encountered during 2022 regarding the detection monitoring and corrective action system. Therefore, no actions were required to modify the system.

- The Landfill CCR unit remained in detection monitoring for the duration of 2022.

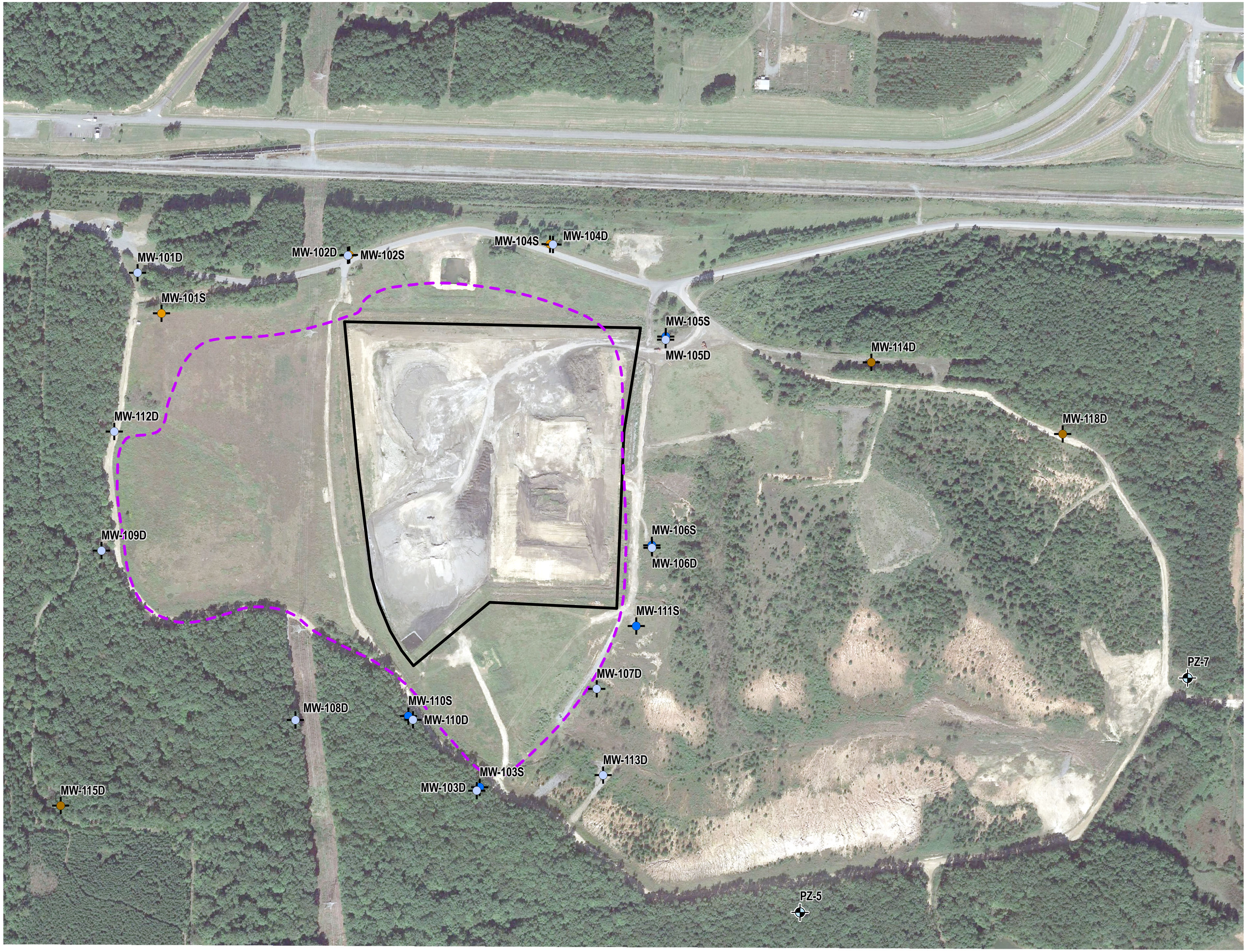
6. PROJECTED ACTIVITIES FOR 2023

Planned activities for the program during 2023 are listed below:

- Statistical evaluation of the second-half 2022 and first-half 2023 detection monitoring sampling data will be performed during 2023 to determine if any SSIs are identified.
- Semi-annual detection monitoring is planned for June and December 2023.

APPENDIX A

SITE MAP



LEGEND

- STRATUM I BACKROUND WELL
- STRATUM I MONITORING WELL
- STRATUM III BACKROUND WELL
- STRATUM III MONITORING WELL
- STRATUM III PIEZOMETER
- APPROX. EXTENT OF CLOSED CADL
- APPROX. EXTENT OF ACTIVE CADL

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, 2018.
2. COAL ASH DISPOSAL LANDFILL (CADL)

0 400 800 Feet

1 " = 400 '

1:4,800

PROJECT:	ENTERGY WHITE BLUFF PLANT 1100 WHITE BLUFF ROAD REDFIELD, ARKANSAS
TITLE:	CADL EXTENT AND CCR GROUNDWATER MONITORING LOCATIONS
DRAWN BY:	S. MAJOR
CHECKED BY:	S. SELLWOOD
APPROVED BY:	J. HOUSE
DATE:	OCTOBER 2020
PROJ. NO.:	341458
	FIGURE 1
FILE NO.:	341458-002.mxd

TRC

Two United Plaza
8550 United Plaza Blvd., Suite 502
Baton Rouge, LA
Phone: 225.216.7483

TRC - GIS

Plot Date: 10/7/2020, 15:35:24 PM by SMAJOR -- LAYOUT: ANSI B(11"x17")
Path: S:\1-PROJECTS\Entergy\MadisonLegacyProjects\Arkansas\2018_302967\341458-002.mxd
Coordinate System: NAD 1983 StatePlane Arkansas South FIPS 0302 Feet (Foot US)
Map Rotation: 0

APPENDIX B
GROUNDWATER MONITORING DATA

Sampling Schedule, Entergy White Bluff CADL Network			
Well ID	Detection Monitoring Sampling Dates and Wells Sampled: 6/13-6/15/2022	Detection Monitoring Sampling Dates and Wells Sampled: 12/5-12/8/2020	Number of Samples Collected
MW-101S	X	X	2
MW-102S	X	X	2
MW-103S	X	X	2
MW-104S	X	X	2
MW-105S	X	X	2
MW-106S	X	X	2
MW-110S	X	X	2
MW-111S	X	X	2
MW-101D	X	X	2
MW-102D	X	X	2
MW-103D	X	X	2
MW-104D	X	X	2
MW-105D	X	X	2
MW-106D	X	X	2
MW-107D	X	X	2
MW-108D	X	X	2
MW-109D	X	X	2
MW-110D	X	X	2
MW-112D	X	X	2
MW-113D	X	X	2
MW-114D	X	X	2
MW-115D	X	X	2
MW-118D	X	X	2

Notes: All samples collected through 2022 were part of the detection monitoring program. No samples collected through 2022 were part of an assessment monitoring program.

Field pH Data Collected during 2022, Entergy White Bluff CADL network		
Well ID	Date Collected	pH (su)
MW-101S	6/15/2022	5.98
	12/5/2022	
MW-102S	6/14/2022	6.06
	12/5/2022	
MW-103S	6/13/2022	4.31
	12/5/2022	
MW-104S	6/13/2022	4.82
	12/5/2022	
MW-105S	6/14/2022	5.97
	12/5/2022	
MW-106S	6/14/2022	4.01
	12/5/2022	
MW-110S	6/13/2022	5.49
	12/5/2022	
MW-111S	6/14/2022	4.05
	12/5/2022	
MW-101D	6/15/2022	7.75
	12/5/2022	
MW-102D	6/14/2022	8.17
	12/5/2022	
MW-103D	6/13/2022	8.30
	12/5/2022	
MW-104D	6/13/2022	7.82
	12/5/2022	
MW-105D	6/14/2022	8.61
	12/5/2022	

Field pH Data Collected during 2020, Entergy White Bluff CADL network		
Well ID	Date Collected	pH (su)
MW-106D	6/14/2022	8.49
	12/5/2022	
MW-107D	6/14/2022	7.36
	12/5/2022	
MW-108D	6/14/2022	8.38
	12/5/2022	
MW-109D	6/14/2022	7.97
	12/5/2022	
MW-110D	6/13/2022	8.28
	12/5/2022	
MW-112D	6/15/2022	8.15
	12/5/2022	
MW-113D	6/14/2022	6.97
	12/5/2022	
MW-114D	6/15/2022	8.70
	12/5/2022	
MW-115D	6/14/2022	8.67
	12/5/2022	
MW-118D	6/15/2022	7.77
	12/5/2022	

Field pH Data Collected during 2022, Entergy White Bluff CADL network		
Well ID	Date Collected	pH (su)
MW-101S	6/15/2022	5.98
	12/7/2022	5.51
MW-102S	6/14/2022	6.06
	12/6/2022	5.94
MW-103S	6/13/2022	4.31
	12/6/2022	4.74
MW-104S	6/13/2022	4.82
	12/8/2022	4.90
MW-105S	6/14/2022	5.97
	12/6/2022	5.57
MW-106S	6/14/2022	4.01
	12/6/2022	3.83
MW-110S	6/13/2022	5.49
	12/6/2022	4.11
MW-111S	6/14/2022	4.05
	12/6/2022	3.71
MW-101D	6/15/2022	7.75
	12/6/2022	7.15
MW-102D	6/14/2022	8.17
	12/7/2022	6.80
MW-103D	6/13/2022	8.30
	12/8/2022	7.43
MW-104D	6/13/2022	7.82
	12/6/2022	7.62
MW-105D	6/14/2022	8.61
	12/8/2022	7.32

Field pH Data Collected during 2022, Entergy White Bluff CADL network		
Well ID	Date Collected	pH (su)
MW-106D	6/14/2022	8.49
	12/8/2022	7.21
MW-107D	6/14/2022	7.36
	12/6/2022	7.13
MW-108D	6/14/2022	8.38
	12/5/2022	7.63
MW-109D	6/14/2022	7.97
	12/5/2022	7.51
MW-110D	6/13/2022	8.28
	12/5/2022	7.71
MW-112D	6/15/2022	8.15
	12/7/2022	7.15
MW-113D	6/14/2022	6.97
	12/6/2022	6.76
MW-114D	6/15/2022	8.70
	12/5/2022	7.81
MW-115D	6/14/2022	8.67
	12/5/2022	7.80
MW-118D	6/15/2022	7.77
	12/5/2022	7.23

ANALYTICAL REPORT

July 17, 2022

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

GBMc & Associates - Bryant, AR

Sample Delivery Group:	L1506358
Samples Received:	06/17/2022
Project Number:	1145-21-080
Description:	Entergy - White Bluff
Site:	CADL - CCR
Report To:	Jonathan Brown 219 Brown Lane Bryant, AR 72022

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

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

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

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MW-101S L1506358-01 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/15/22 10:50	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1883419	1	06/22/22 09:42	06/22/22 17:30	SJF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891559	1	07/08/22 17:03	07/08/22 17:03	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887146	1	07/05/22 20:45	07/07/22 21:10	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887164	1	07/05/22 21:24	07/07/22 22:01	LD	Mt. Juliet, TN

MW-102S L1506358-02 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/14/22 16:30	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882814	1	06/21/22 15:30	06/21/22 16:10	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	1	07/08/22 03:14	07/08/22 03:14	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887146	1	07/05/22 20:45	07/07/22 21:13	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887164	1	07/05/22 21:24	07/07/22 22:05	LD	Mt. Juliet, TN

MW-103S L1506358-03 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/13/22 13:02	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882398	1	06/20/22 17:50	06/20/22 18:20	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890741	1	07/08/22 05:14	07/08/22 05:14	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887146	1	07/05/22 20:45	07/07/22 21:16	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887164	1	07/05/22 21:24	07/07/22 22:08	LD	Mt. Juliet, TN

MW-104S L1506358-04 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/13/22 17:00	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882398	1	06/20/22 17:50	06/20/22 18:20	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890741	1	07/08/22 05:41	07/08/22 05:41	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887146	1	07/05/22 20:45	07/07/22 21:19	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887164	1	07/05/22 21:24	07/07/22 22:11	LD	Mt. Juliet, TN

MW-105S L1506358-05 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/14/22 08:45	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882814	1	06/21/22 15:30	06/21/22 16:10	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	1	07/08/22 03:29	07/08/22 03:29	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 08:45	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 12:36	JPD	Mt. Juliet, TN

MW-106S L1506358-06 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/14/22 09:35	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882814	1	06/21/22 15:30	06/21/22 16:10	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	1	07/08/22 04:29	07/08/22 04:29	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	10	07/08/22 03:59	07/08/22 03:59	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 08:48	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 12:49	JPD	Mt. Juliet, TN

MW-110S L1506358-07 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/13/22 15:07	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882398	1	06/20/22 17:50	06/20/22 18:20	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890741	1	07/08/22 06:07	07/08/22 06:07	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890741	10	07/08/22 05:54	07/08/22 05:54	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 08:51	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 12:53	JPD	Mt. Juliet, TN

MW-111S L1506358-08 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/14/22 10:15	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1883051	1	06/21/22 16:49	06/21/22 18:33	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	1	07/08/22 05:43	07/08/22 05:43	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	10	07/08/22 05:29	07/08/22 05:29	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 08:53	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 12:56	JPD	Mt. Juliet, TN

MW-101D L1506358-09 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/15/22 09:05	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1895108	1	07/14/22 15:01	07/14/22 18:07	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891559	1	07/08/22 17:30	07/08/22 17:30	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 08:34	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 12:59	JPD	Mt. Juliet, TN

MW-102D L1506358-10 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/14/22 17:48	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882814	1	06/21/22 15:30	06/21/22 16:10	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	1	07/08/22 05:58	07/08/22 05:58	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 09:01	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 13:11	JPD	Mt. Juliet, TN

MW-103D L1506358-11 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/13/22 14:27	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882167	1	06/20/22 13:47	06/20/22 14:22	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890741	1	07/08/22 06:47	07/08/22 06:47	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 09:04	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 13:14	JPD	Mt. Juliet, TN

MW-104D L1506358-12 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/13/22 17:26	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882398	1	06/20/22 17:50	06/20/22 18:20	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890741	1	07/08/22 07:14	07/08/22 07:14	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 09:07	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 13:17	JPD	Mt. Juliet, TN

MW-105D L1506358-13 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/14/22 09:05	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882814	1	06/21/22 15:30	06/21/22 16:10	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	1	07/08/22 06:13	07/08/22 06:13	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 09:10	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 13:21	JPD	Mt. Juliet, TN

MW-106D L1506358-14 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/14/22 11:10	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882719	1	06/21/22 09:56	06/21/22 14:23	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	1	07/08/22 06:28	07/08/22 06:28	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 09:13	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 13:24	JPD	Mt. Juliet, TN

MW-107D L1506358-15 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/14/22 11:05	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882719	1	06/21/22 09:56	06/21/22 14:23	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	1	07/08/22 06:43	07/08/22 06:43	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 09:15	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 13:28	JPD	Mt. Juliet, TN

MW-108D L1506358-16 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/14/22 12:45	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882814	1	06/21/22 15:30	06/21/22 16:10	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	1	07/08/22 06:58	07/08/22 06:58	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 09:18	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 13:31	JPD	Mt. Juliet, TN

MW-109D L1506358-17 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/14/22 15:45	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882719	1	06/21/22 09:56	06/21/22 14:23	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	1	07/08/22 07:13	07/08/22 07:13	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 09:21	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 13:34	JPD	Mt. Juliet, TN

MW-110D L1506358-18 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/13/22 15:41	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882398	1	06/20/22 17:50	06/20/22 18:20	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890741	1	07/08/22 07:54	07/08/22 07:54	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 09:24	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 13:38	JPD	Mt. Juliet, TN

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

MW-112D L1506358-19 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/15/22 16:20	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1883419	1	06/22/22 09:42	06/22/22 17:30	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891559	1	07/08/22 17:43	07/08/22 17:43	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 09:27	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 13:41	JPD	Mt. Juliet, TN

MW-113D L1506358-20 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/14/22 12:35	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882719	1	06/21/22 09:56	06/21/22 14:23	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	1	07/08/22 07:28	07/08/22 07:28	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	10	07/12/22 11:45	07/12/22 11:45	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 09:35	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 13:53	JPD	Mt. Juliet, TN

MW-114D L1506358-21 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/15/22 18:15	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1883409	1	06/22/22 09:04	06/22/22 16:01	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891559	1	07/08/22 18:10	07/08/22 18:10	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 09:38	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 13:56	JPD	Mt. Juliet, TN

MW-115D L1506358-22 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/14/22 14:15	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1883051	1	06/21/22 16:49	06/21/22 18:33	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890898	1	07/08/22 07:43	07/08/22 07:43	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887147	1	07/07/22 00:52	07/07/22 09:41	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 13:59	JPD	Mt. Juliet, TN

MW-118D L1506358-23 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/15/22 13:30	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1883415	1	06/22/22 09:12	06/22/22 14:52	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891559	1	07/08/22 18:37	07/08/22 18:37	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1891121	1	07/07/22 15:28	07/07/22 22:20	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 14:03	JPD	Mt. Juliet, TN

FIELD BLANK 1 L1506358-24 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/14/22 08:50	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882814	1	06/21/22 15:30	06/21/22 16:10	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890900	1	07/08/22 15:20	07/08/22 15:20	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1891121	1	07/07/22 15:28	07/07/22 22:23	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887166	1	07/05/22 22:00	07/06/22 14:06	JPD	Mt. Juliet, TN

DUPLICATE 1 L1506358-25 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/14/22 12:45	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1883051	1	06/21/22 16:49	06/21/22 18:33	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890900	1	07/08/22 17:34	07/08/22 17:34	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 18:57	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 20:07	JDG	Mt. Juliet, TN

FIELD BLANK 2 L1506358-26 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/15/22 08:00	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1883409	1	06/22/22 09:04	06/22/22 16:01	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891559	1	07/08/22 19:17	07/08/22 19:17	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 19:07	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 20:11	JDG	Mt. Juliet, TN

DUPLICATE 2 L1506358-27 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/15/22 10:50	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1883419	1	06/22/22 09:42	06/22/22 17:30	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891559	1	07/08/22 19:30	07/08/22 19:30	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 19:10	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 20:15	JDG	Mt. Juliet, TN

DUPLICATE 3 L1506358-28 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/13/22 17:00	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882398	1	06/20/22 17:50	06/20/22 18:20	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890741	1	07/08/22 08:08	07/08/22 08:08	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 19:12	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 20:18	JDG	Mt. Juliet, TN

RP-1 L1506358-29 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/15/22 13:46	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1883419	1	06/22/22 09:42	06/22/22 17:30	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891559	1	07/08/22 20:11	07/08/22 20:11	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891559	10	07/08/22 19:57	07/08/22 19:57	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891559	100	07/08/22 19:44	07/08/22 19:44	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 19:15	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 20:39	JDG	Mt. Juliet, TN

RP-2 L1506358-30 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/15/22 12:20	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1883419	1	06/22/22 09:42	06/22/22 17:30	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891844	1	07/09/22 00:17	07/09/22 00:17	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 19:23	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 20:42	JDG	Mt. Juliet, TN

RP-3 L1506358-31 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/16/22 09:05	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1884161	1	06/23/22 09:41	06/23/22 14:18	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891844	1	07/09/22 01:02	07/09/22 01:02	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891844	10	07/09/22 00:47	07/09/22 00:47	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 19:26	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 20:46	JDG	Mt. Juliet, TN

RP-4 L1506358-32 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/16/22 10:15	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1884165	1	06/23/22 09:43	06/23/22 15:25	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891844	1	07/09/22 01:17	07/09/22 01:17	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 19:29	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 20:50	JDG	Mt. Juliet, TN

RP-5 L1506358-33 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/15/22 17:45	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1883415	1	06/22/22 09:12	06/22/22 14:52	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891844	1	07/09/22 01:32	07/09/22 01:32	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 19:32	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 20:54	JDG	Mt. Juliet, TN

RP-6 L1506358-34 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/13/22 10:45	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1882398	1	06/20/22 17:50	06/20/22 18:20	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890741	1	07/08/22 08:35	07/08/22 08:35	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1890741	100	07/08/22 08:21	07/08/22 08:21	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 19:34	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 20:57	JDG	Mt. Juliet, TN

RP-7 L1506358-35 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/15/22 16:30	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1883419	1	06/22/22 09:42	06/22/22 17:30	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891844	1	07/09/22 01:47	07/09/22 01:47	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 19:37	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 21:01	JDG	Mt. Juliet, TN

RP-8 L1506358-36 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/15/22 15:20	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1883419	1	06/22/22 09:42	06/22/22 17:30	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891844	1	07/09/22 02:02	07/09/22 02:02	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 19:40	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 21:05	JDG	Mt. Juliet, TN

RP-9 L1506358-37 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/16/22 10:30	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1884165	1	06/23/22 09:43	06/23/22 15:25	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891844	1	07/09/22 02:17	07/09/22 02:17	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 19:42	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 21:09	JDG	Mt. Juliet, TN

RP-10 L1506358-38 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/16/22 08:42	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1884161	1	06/23/22 09:41	06/23/22 14:18	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891894	1	07/08/22 19:19	07/08/22 19:19	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891894	10	07/08/22 19:35	07/08/22 19:35	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 19:45	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 21:13	JDG	Mt. Juliet, TN

DUPLICATE RP-10 L1506358-39 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	06/16/22 08:42	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1884161	1	06/23/22 09:41	06/23/22 14:18	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891894	1	07/08/22 19:50	07/08/22 19:50	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1891894	10	07/08/22 20:05	07/08/22 20:05	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1887148	1	07/05/22 15:16	07/07/22 19:48	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1887167	1	07/06/22 20:49	07/07/22 21:34	JDG	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.

Mark W. Beasley
Project Manager

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	5.98	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	234		10.0	1	06/22/2022 17:30	WG1883419

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	8.52		1.00	1	07/08/2022 17:03	WG1891559
Fluoride	ND		0.150	1	07/08/2022 17:03	WG1891559
Sulfate	52.5		5.00	1	07/08/2022 17:03	WG1891559

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	07/07/2022 21:10	WG1887146

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	21.8		1.00	1	07/07/2022 22:01	WG1887164

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	6.06	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	183		10.0	1	06/21/2022 16:10	WG1882814

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	7.00		1.00	1	07/08/2022 03:14	WG1890898
Fluoride	ND		0.150	1	07/08/2022 03:14	WG1890898
Sulfate	19.1		5.00	1	07/08/2022 03:14	WG1890898

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	07/07/2022 21:13	WG1887146

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	10.3		1.00	1	07/07/2022 22:05	WG1887164

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	4.31	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	122		10.0	1	06/20/2022 18:20	WG1882398

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	4.62		1.00	1	07/08/2022 05:14	WG1890741
Fluoride	ND		0.150	1	07/08/2022 05:14	WG1890741
Sulfate	39.5		5.00	1	07/08/2022 05:14	WG1890741

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	07/07/2022 21:16	WG1887146

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	3.96		1.00	1	07/07/2022 22:08	WG1887164

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	7.82	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	248		10.0	1	06/20/2022 18:20	WG1882398

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	4.92		1.00	1	07/08/2022 05:41	WG1890741
Fluoride	ND		0.150	1	07/08/2022 05:41	WG1890741
Sulfate	71.7		5.00	1	07/08/2022 05:41	WG1890741

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.863		0.200	1	07/07/2022 21:19	WG1887146

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	15.5		1.00	1	07/07/2022 22:11	WG1887164

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	5.97	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	179		10.0	1	06/21/2022 16:10	WG1882814

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	3.95		1.00	1	07/08/2022 03:29	WG1890898
Fluoride	ND		0.150	1	07/08/2022 03:29	WG1890898
Sulfate	23.2		5.00	1	07/08/2022 03:29	WG1890898

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	07/07/2022 08:45	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	14.6		1.00	1	07/06/2022 12:36	WG1887166

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	4.01	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	920		20.0	1	06/21/2022 16:10	WG1882814

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	11.0		1.00	1	07/08/2022 04:29	WG1890898
Fluoride	0.661		0.150	1	07/08/2022 04:29	WG1890898
Sulfate	633		50.0	10	07/08/2022 03:59	WG1890898

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	5.85		0.200	1	07/07/2022 08:48	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	30.0		1.00	1	07/06/2022 12:49	WG1887166

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	5.49	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	466		10.0	1	06/20/2022 18:20	WG1882398

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	8.57		1.00	1	07/08/2022 06:07	WG1890741
Fluoride	0.255		0.150	1	07/08/2022 06:07	WG1890741
Sulfate	244		50.0	10	07/08/2022 05:54	WG1890741

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	2.03		0.200	1	07/07/2022 08:51	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	16.7		1.00	1	07/06/2022 12:53	WG1887166

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	4.05	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1230		20.0	1	06/21/2022 18:33	WG1883051

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	10.3		1.00	1	07/08/2022 05:43	WG1890898
Fluoride	0.748		0.150	1	07/08/2022 05:43	WG1890898
Sulfate	804		50.0	10	07/08/2022 05:29	WG1890898

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	5.39		0.200	1	07/07/2022 08:53	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	115		1.00	1	07/06/2022 12:56	WG1887166

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	7.75	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	354	Q	10.0	1	07/14/2022 18:07	WG1895108

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	7.38		1.00	1	07/08/2022 17:30	WG1891559
Fluoride	ND		0.150	1	07/08/2022 17:30	WG1891559
Sulfate	77.4		5.00	1	07/08/2022 17:30	WG1891559

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	07/07/2022 08:34	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	50.8		1.00	1	07/06/2022 12:59	WG1887166

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

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	8.17	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	406		10.0	1	06/21/2022 16:10	WG1882814

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	8.54		1.00	1	07/08/2022 05:58	WG1890898
Fluoride	ND		0.150	1	07/08/2022 05:58	WG1890898
Sulfate	33.8		5.00	1	07/08/2022 05:58	WG1890898

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.274		0.200	1	07/07/2022 09:01	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	69.2		1.00	1	07/06/2022 13:11	WG1887166

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	8.3	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	407		10.0	1	06/20/2022 14:22	WG1882167

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	9.17		1.00	1	07/08/2022 06:47	WG1890741
Fluoride	0.165		0.150	1	07/08/2022 06:47	WG1890741
Sulfate	76.7		5.00	1	07/08/2022 06:47	WG1890741

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.268		0.200	1	07/07/2022 09:04	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	50.4		1.00	1	07/06/2022 13:14	WG1887166

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

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	7.82	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	314		10.0	1	06/20/2022 18:20	WG1882398

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	10.8		1.00	1	07/08/2022 07:14	WG1890741
Fluoride	ND		0.150	1	07/08/2022 07:14	WG1890741
Sulfate	16.3		5.00	1	07/08/2022 07:14	WG1890741

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.242		0.200	1	07/07/2022 09:07	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	56.8		1.00	1	07/06/2022 13:17	WG1887166

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	8.61	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	343		10.0	1	06/21/2022 16:10	WG1882814

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	8.36		1.00	1	07/08/2022 06:13	WG1890898
Fluoride	ND		0.150	1	07/08/2022 06:13	WG1890898
Sulfate	28.7		5.00	1	07/08/2022 06:13	WG1890898

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.284		0.200	1	07/07/2022 09:10	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	56.8		1.00	1	07/06/2022 13:21	WG1887166

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	8.49	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	531		10.0	1	06/21/2022 14:23	WG1882719

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	6.06		1.00	1	07/08/2022 06:28	WG1890898
Fluoride	ND		0.150	1	07/08/2022 06:28	WG1890898
Sulfate	13.2		5.00	1	07/08/2022 06:28	WG1890898

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.305		0.200	1	07/07/2022 09:13	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	57.9		1.00	1	07/06/2022 13:24	WG1887166

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

Cp Tc Ss Cn Sr Qc Gl Al Sc

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	7.36	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	383		10.0	1	06/21/2022 14:23	WG1882719

Sample Narrative:

L1506358-15 WG1882719: Anlysis was re-run to confirm.

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	20.3		1.00	1	07/08/2022 06:43	WG1890898
Fluoride	ND		0.150	1	07/08/2022 06:43	WG1890898
Sulfate	128		5.00	1	07/08/2022 06:43	WG1890898

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.324		0.200	1	07/07/2022 09:15	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	85.0		1.00	1	07/06/2022 13:28	WG1887166

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	8.38	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	501		10.0	1	06/21/2022 16:10	WG1882814

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	13.5		1.00	1	07/08/2022 06:58	WG1890898
Fluoride	ND		0.150	1	07/08/2022 06:58	WG1890898
Sulfate	58.1		5.00	1	07/08/2022 06:58	WG1890898

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.339		0.200	1	07/07/2022 09:18	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	72.1		1.00	1	07/06/2022 13:31	WG1887166

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

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	7.97	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	559		10.0	1	06/21/2022 14:23	WG1882719

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	6.91		1.00	1	07/08/2022 07:13	WG1890898
Fluoride	ND		0.150	1	07/08/2022 07:13	WG1890898
Sulfate	49.3		5.00	1	07/08/2022 07:13	WG1890898

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.312		0.200	1	07/07/2022 09:21	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	49.9		1.00	1	07/06/2022 13:34	WG1887166

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	8.28	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	332		10.0	1	06/20/2022 18:20	WG1882398

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	7.50		1.00	1	07/08/2022 07:54	WG1890741
Fluoride	ND		0.150	1	07/08/2022 07:54	WG1890741
Sulfate	40.5		5.00	1	07/08/2022 07:54	WG1890741

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.306		0.200	1	07/07/2022 09:24	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	47.0		1.00	1	07/06/2022 13:38	WG1887166

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	8.15	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	270		10.0	1	06/22/2022 17:30	WG1883419

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	6.49		1.00	1	07/08/2022 17:43	WG1891559
Fluoride	ND		0.150	1	07/08/2022 17:43	WG1891559
Sulfate	ND		5.00	1	07/08/2022 17:43	WG1891559

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.278		0.200	1	07/07/2022 09:27	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	37.0		1.00	1	07/06/2022 13:41	WG1887166

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	6.97	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1170		20.0	1	06/21/2022 14:23	WG1882719

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	14.4		1.00	1	07/08/2022 07:28	WG1890898
Fluoride	ND		0.150	1	07/08/2022 07:28	WG1890898
Sulfate	609		50.0	10	07/12/2022 11:45	WG1890898

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.484		0.200	1	07/07/2022 09:35	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	198		1.00	1	07/06/2022 13:53	WG1887166

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	6.97	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	319		10.0	1	06/22/2022 16:01	WG1883409

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	8.95		1.00	1	07/08/2022 18:10	WG1891559
Fluoride	ND		0.150	1	07/08/2022 18:10	WG1891559
Sulfate	29.7		5.00	1	07/08/2022 18:10	WG1891559

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.280		0.200	1	07/07/2022 09:38	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	53.1		1.00	1	07/06/2022 13:56	WG1887166

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

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	8.7	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	342		10.0	1	06/21/2022 18:33	WG1883051

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	4.95		1.00	1	07/08/2022 07:43	WG1890898
Fluoride	ND		0.150	1	07/08/2022 07:43	WG1890898
Sulfate	ND		5.00	1	07/08/2022 07:43	WG1890898

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.336		0.200	1	07/07/2022 09:41	WG1887147

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	43.6		1.00	1	07/06/2022 13:59	WG1887166

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	8.62	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	585	J4	10.0	1	06/22/2022 14:52	WG1883415

Sample Narrative:

L1506358-23 WG1883415: Anlysis was re-run to confirm.

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	9.45		1.00	1	07/08/2022 18:37	WG1891559
Fluoride	ND		0.150	1	07/08/2022 18:37	WG1891559
Sulfate	168		5.00	1	07/08/2022 18:37	WG1891559

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.285		0.200	1	07/07/2022 22:20	WG1891121

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	91.2		1.00	1	07/06/2022 14:03	WG1887166

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	7.77	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	ND		10.0	1	06/21/2022 16:10	WG1882814

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	ND		1.00	1	07/08/2022 15:20	WG1890900
Fluoride	ND		0.150	1	07/08/2022 15:20	WG1890900
Sulfate	ND		5.00	1	07/08/2022 15:20	WG1890900

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	07/07/2022 22:23	WG1891121

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	ND		1.00	1	07/06/2022 14:06	WG1887166

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	496		10.0	1	06/21/2022 18:33	WG1883051

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	13.9		1.00	1	07/08/2022 17:34	WG1890900
Fluoride	ND		0.150	1	07/08/2022 17:34	WG1890900
Sulfate	61.1		5.00	1	07/08/2022 17:34	WG1890900

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.340		0.200	1	07/07/2022 18:57	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	69.0		1.00	1	07/07/2022 20:07	WG1887167

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	8.38	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	ND		10.0	1	06/22/2022 16:01	WG1883409

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	ND		1.00	1	07/08/2022 19:17	WG1891559
Fluoride	ND		0.150	1	07/08/2022 19:17	WG1891559
Sulfate	ND		5.00	1	07/08/2022 19:17	WG1891559

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	07/07/2022 19:07	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	ND		1.00	1	07/07/2022 20:11	WG1887167

Cp
Tc
Ss
Cn
Sr
Qc
Gl
Al
Sc

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	212		10.0	1	06/22/2022 17:30	WG1883419

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	8.02		1.00	1	07/08/2022 19:30	WG1891559
Fluoride	ND		0.150	1	07/08/2022 19:30	WG1891559
Sulfate	49.6		5.00	1	07/08/2022 19:30	WG1891559

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	07/07/2022 19:10	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	21.8		1.00	1	07/07/2022 20:15	WG1887167

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	5.98	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	237		10.0	1	06/20/2022 18:20	WG1882398

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	6.66		1.00	1	07/08/2022 08:08	WG1890741
Fluoride	ND		0.150	1	07/08/2022 08:08	WG1890741
Sulfate	74.6		5.00	1	07/08/2022 08:08	WG1890741

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.877		0.200	1	07/07/2022 19:12	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	16.3		1.00	1	07/07/2022 20:18	WG1887167

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	4.82	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	2700		100	1	06/22/2022 17:30	WG1883419

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	452		10.0	10	07/08/2022 19:57	WG1891559
Fluoride	1.85		0.150	1	07/08/2022 20:11	WG1891559
Sulfate	2400		500	100	07/08/2022 19:44	WG1891559

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	07/07/2022 19:15	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	335		1.00	1	07/07/2022 20:39	WG1887167

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	3.67	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	305		10.0	1	06/22/2022 17:30	WG1883419

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	19.3		1.00	1	07/09/2022 00:17	WG1891844
Fluoride	ND		0.150	1	07/09/2022 00:17	WG1891844
Sulfate	113		5.00	1	07/09/2022 00:17	WG1891844

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	07/07/2022 19:23	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	16.4		1.00	1	07/07/2022 20:42	WG1887167

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

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	4.3	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1990		50.0	1	06/23/2022 14:18	WG1884161

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	173		1.00	1	07/09/2022 01:02	WG1891844
Fluoride	0.780		0.150	1	07/09/2022 01:02	WG1891844
Sulfate	1210		50.0	10	07/09/2022 00:47	WG1891844

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	07/07/2022 19:26	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	187		1.00	1	07/07/2022 20:46	WG1887167

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	3.14	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	526		10.0	1	06/23/2022 15:25	WG1884165

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	68.9		1.00	1	07/09/2022 01:17	WG1891844
Fluoride	0.281		0.150	1	07/09/2022 01:17	WG1891844
Sulfate	207	E	5.00	1	07/09/2022 01:17	WG1891844

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.269		0.200	1	07/07/2022 19:29	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	57.5		1.00	1	07/07/2022 20:50	WG1887167

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

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	5.58	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	474	J4	10.0	1	06/22/2022 14:52	WG1883415

Sample Narrative:

L1506358-33 WG1883415: Anlysis was re-run to confirm.

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	41.5		1.00	1	07/09/2022 01:32	WG1891844
Fluoride	0.290		0.150	1	07/09/2022 01:32	WG1891844
Sulfate	226	E	5.00	1	07/09/2022 01:32	WG1891844

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	07/07/2022 19:32	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	35.9		1.00	1	07/07/2022 20:54	WG1887167

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	3.88	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1850		25.0	1	06/20/2022 18:20	WG1882398

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	37.1		1.00	1	07/08/2022 08:35	WG1890741
Fluoride	1.07		0.150	1	07/08/2022 08:35	WG1890741
Sulfate	1210		500	100	07/08/2022 08:21	WG1890741

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.574		0.200	1	07/07/2022 19:34	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	273		1.00	1	07/07/2022 20:57	WG1887167

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	3.79	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	437		10.0	1	06/22/2022 17:30	WG1883419

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	7.04		1.00	1	07/09/2022 01:47	WG1891844
Fluoride	0.345		0.150	1	07/09/2022 01:47	WG1891844
Sulfate	235	E	5.00	1	07/09/2022 01:47	WG1891844

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	07/07/2022 19:37	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	35.8		1.00	1	07/07/2022 21:01	WG1887167

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	4.31	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	765		13.3	1	06/22/2022 17:30	WG1883419

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	52.7		1.00	1	07/09/2022 02:02	WG1891844
Fluoride	0.339		0.150	1	07/09/2022 02:02	WG1891844
Sulfate	452	E	5.00	1	07/09/2022 02:02	WG1891844

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.608		0.200	1	07/07/2022 19:40	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	82.6		1.00	1	07/07/2022 21:05	WG1887167

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

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	6.53	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	181		10.0	1	06/23/2022 15:25	WG1884165

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	3.73		1.00	1	07/09/2022 02:17	WG1891844
Fluoride	0.158		0.150	1	07/09/2022 02:17	WG1891844
Sulfate	21.1		5.00	1	07/09/2022 02:17	WG1891844

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	07/07/2022 19:42	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	24.6		1.00	1	07/07/2022 21:09	WG1887167

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	3.8	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1180		20.0	1	06/23/2022 14:18	WG1884161

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	64.7		1.00	1	07/08/2022 19:19	WG1891894
Fluoride	0.437		0.150	1	07/08/2022 19:19	WG1891894
Sulfate	737		50.0	10	07/08/2022 19:35	WG1891894

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.635		0.200	1	07/07/2022 19:45	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	97.9		1.00	1	07/07/2022 21:13	WG1887167

Additional Information - Results for field analyses are not accredited to ISO 17025

Analyte	Result	Units
pH (On Site)	3.8	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1220		20.0	1	06/23/2022 14:18	WG1884161

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	64.4		1.00	1	07/08/2022 19:50	WG1891894
Fluoride	0.435		0.150	1	07/08/2022 19:50	WG1891894
Sulfate	751		50.0	10	07/08/2022 20:05	WG1891894

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.673		0.200	1	07/07/2022 19:48	WG1887148

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	99.4		1.00	1	07/07/2022 21:34	WG1887167

Method Blank (MB)

(MB) R3806898-1 06/20/22 14:22

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

L1504374-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1504374-04 06/20/22 14:22 • (DUP) R3806898-3 06/20/22 14:22

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	2970	3170	1	6.25	J3	5

L1504425-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1504425-02 06/20/22 14:22 • (DUP) R3806898-4 06/20/22 14:22

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	260	131	1	66.0	J3	5

Laboratory Control Sample (LCS)

(LCS) R3806898-2 06/20/22 14:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2440	2310	94.7	81.5-118	

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

Method Blank (MB)

(MB) R3806879-1 06/20/22 18:20

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

L1504970-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1504970-04 06/20/22 18:20 • (DUP) R3806879-3 06/20/22 18:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	756	788	1	4.15		5

L1504987-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1504987-01 06/20/22 18:20 • (DUP) R3806879-4 06/20/22 18:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1790	2090	1	15.7	J3	5

Laboratory Control Sample (LCS)

(LCS) R3806879-2 06/20/22 18:20

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2440	2270	93.0	81.5-118	

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

Method Blank (MB)

(MB) R3807924-1 06/21/22 14:23

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

L1504970-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1504970-03 06/21/22 14:23 • (DUP) R3807924-3 06/21/22 14:23

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	653	645	1	1.23		5

L1504998-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1504998-02 06/21/22 14:23 • (DUP) R3807924-4 06/21/22 14:23

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	804	785	1	2.35		5

Laboratory Control Sample (LCS)

(LCS) R3807924-2 06/21/22 14:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2440	2620	107	81.5-118	

Method Blank (MB)

(MB) R3806785-1 06/21/22 16:10

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

L1504970-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1504970-01 06/21/22 16:10 • (DUP) R3806785-3 06/21/22 16:10

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	532	564	1	5.84	J3	5

L1504998-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1504998-01 06/21/22 16:10 • (DUP) R3806785-4 06/21/22 16:10

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	641	669	1	4.27		5

Laboratory Control Sample (LCS)

(LCS) R3806785-2 06/21/22 16:10

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2440	2330	95.5	81.5-118	

Method Blank (MB)

(MB) R3806886-1 06/21/22 18:33

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

L1505122-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1505122-06 06/21/22 18:33 • (DUP) R3806886-3 06/21/22 18:33

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1180	1310	1	10.7	J3	5

L1506358-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1506358-08 06/21/22 18:33 • (DUP) R3806886-4 06/21/22 18:33

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1230	1210	1	1.97		5

Laboratory Control Sample (LCS)

(LCS) R3806886-2 06/21/22 18:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2440	2390	98.0	81.5-118	

Method Blank (MB)

(MB) R3807897-1 06/22/22 16:01

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

L1505598-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1505598-03 06/22/22 16:01 • (DUP) R3807897-3 06/22/22 16:01

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	771	813	1	5.39	J3	5

L1505619-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1505619-02 06/22/22 16:01 • (DUP) R3807897-4 06/22/22 16:01

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	462	465	1	0.647		5

Laboratory Control Sample (LCS)

(LCS) R3807897-2 06/22/22 16:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2440	2350	96.3	81.5-118	

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

Method Blank (MB)

(MB) R3807845-1 06/22/22 14:52

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

L1505598-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1505598-02 06/22/22 14:52 • (DUP) R3807845-3 06/22/22 14:52

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	784	744	1	5.24	J3	5

Sample Narrative:

OS: In hold analysis confirmed with OOH analysis with passing QC.

L1506281-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1506281-05 06/22/22 14:52 • (DUP) R3807845-4 06/22/22 14:52

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	707	688	1	2.68		5

Sample Narrative:

OS: Analysis was re-run to confirm.

Laboratory Control Sample (LCS)

(LCS) R3807845-2 06/22/22 14:52

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2440	2990	123	81.5-118	J4

Method Blank (MB)

(MB) R3809608-1 06/22/22 17:30

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

L1504150-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1504150-13 06/22/22 17:30 • (DUP) R3809608-3 06/22/22 17:30

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	411	417	1	1.45		5

Sample Narrative:

OS: OOH analysis did not match in hold analysis.

L1506358-36 Original Sample (OS) • Duplicate (DUP)

(OS) L1506358-36 06/22/22 17:30 • (DUP) R3809608-4 06/22/22 17:30

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	765	779	1	1.73		5

Laboratory Control Sample (LCS)

(LCS) R3809608-2 06/22/22 17:30

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2440	2640	108	81.5-118	

Method Blank (MB)

(MB) R3808521-1 06/23/22 14:18

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

L1506144-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1506144-08 06/23/22 14:18 • (DUP) R3808521-3 06/23/22 14:18

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	1240	1300	1	4.73		5

L1506144-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1506144-10 06/23/22 14:18 • (DUP) R3808521-4 06/23/22 14:18

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	1110	1090	1	2.19		5

Laboratory Control Sample (LCS)

(LCS) R3808521-2 06/23/22 14:18

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Dissolved Solids	2440	2480	102	81.5-118	

Method Blank (MB)

(MB) R3807822-1 06/23/22 15:25

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

L1506144-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1506144-01 06/23/22 15:25 • (DUP) R3807822-3 06/23/22 15:25

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	2920	2850	1	2.25		5

L1506144-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1506144-06 06/23/22 15:25 • (DUP) R3807822-4 06/23/22 15:25

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1120	1030	1	8.92	J3	5

Laboratory Control Sample (LCS)

(LCS) R3807822-2 06/23/22 15:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2440	2650	109	81.5-118	

QUALITY CONTROL SUMMARY

Method Blank (MB)

(MB) R3815647-1 07/14/22 18:07

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

L1510093-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1510093-01 07/14/22 18:07 • (DUP) R3815647-3 07/14/22 18:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1180	1230	1	3.99		5

L1510093-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1510093-12 07/14/22 18:07 • (DUP) R3815647-4 07/14/22 18:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1490	1520	1	2.13		5

Laboratory Control Sample (LCS)

(LCS) R3815647-2 07/14/22 18:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	7520	85.5	77.3-123	

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

Method Blank (MB)

(MB) R3812732-1 07/07/22 22:46

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Sulfate	U		0.594	5.00

L1503454-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1503454-05 07/07/22 23:26 • (DUP) R3812732-3 07/07/22 23:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	48.1	46.3	5	3.74		15
Fluoride	ND	ND	5	0.387		15
Sulfate	51.9	50.1	5	3.54		15

L1506358-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1506358-11 07/08/22 06:47 • (DUP) R3812732-11 07/08/22 07:01

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	9.17	8.27	1	10.3		15
Fluoride	0.165	0.173	1	5.03		15
Sulfate	76.7	74.5	1	2.96		15

Laboratory Control Sample (LCS)

(LCS) R3812732-2 07/07/22 22:59

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	40.3	101	80.0-120	
Fluoride	8.00	8.39	105	80.0-120	
Sulfate	40.0	41.1	103	80.0-120	

L1506358-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506358-12 07/08/22 07:14 • (MS) R3812732-12 07/08/22 07:28 • (MSD) R3812732-13 07/08/22 07:41

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	10.8	61.4	62.7	101	104	1	80.0-120			2.14	15
Fluoride	5.00	ND	5.41	5.59	107	110	1	80.0-120			3.24	15
Sulfate	50.0	16.3	68.4	69.1	104	106	1	80.0-120			1.11	15

L1506329-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506329-03 07/09/22 04:05 • (MS) R3812852-1 07/09/22 04:20 • (MSD) R3812852-2 07/09/22 04:34

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	3.60	55.1	55.5	103	104	1	80.0-120			0.825	15
Fluoride	5.00	ND	5.18	5.23	101	103	1	80.0-120			1.06	15
Sulfate	50.0	35.3	84.3	84.8	98.0	99.0	1	80.0-120			0.604	15

Method Blank (MB)

(MB) R3813385-1 07/07/22 23:15

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Sulfate	U		0.594	5.00

L1506358-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1506358-06 07/08/22 03:59 • (DUP) R3813385-7 07/08/22 04:14

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	633	634	10	0.206		15

L1506329-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1506329-15 07/08/22 00:44 • (DUP) R3813385-5 07/08/22 00:59

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	20.5	20.4	1	0.398		15
Fluoride	ND	ND	1	0.000		15
Sulfate	131	131	1	0.333		15

L1506358-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1506358-06 07/08/22 04:29 • (DUP) R3813385-8 07/08/22 04:44

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	11.0	10.7	1	3.53		15
Fluoride	0.661	0.721	1	8.55		15

Laboratory Control Sample (LCS)

(LCS) R3813385-2 07/07/22 23:30

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	39.4	98.4	80.0-120	
Fluoride	8.00	8.15	102	80.0-120	
Sulfate	40.0	39.6	98.9	80.0-120	

L1506329-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506329-14 07/08/22 00:00 • (MS) R3813385-3 07/08/22 00:15 • (MSD) R3813385-4 07/08/22 00:29

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	5.81	56.4	57.2	101	103	1	80.0-120			1.36	15
Fluoride	5.00	ND	5.00	5.08	98.0	99.6	1	80.0-120			1.60	15
Sulfate	50.0	12.8	63.7	63.6	102	102	1	80.0-120			0.0299	15

L1506358-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1506358-05 07/08/22 03:29 • (MS) R3813385-6 07/08/22 03:44

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	3.95	55.3	103	1	80.0-120	
Fluoride	5.00	ND	5.06	99.4	1	80.0-120	
Sulfate	50.0	23.2	74.0	102	1	80.0-120	

Method Blank (MB)

(MB) R3813932-1 07/08/22 09:31

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Sulfate	U		0.594	5.00

L1506281-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1506281-06 07/08/22 13:05 • (DUP) R3813932-5 07/08/22 13:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	72.9	73.3	1	0.431		15
Fluoride	0.226	0.229	1	1.05		15
Sulfate	69.1	69.3	1	0.247		15

L1506389-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1506389-04 07/08/22 16:34 • (DUP) R3813932-7 07/08/22 16:49

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	83.1	83.0	1	0.165		15
Fluoride	0.152	0.153	1	0.985		15
Sulfate	320	320	1	0.0745	E	15

Laboratory Control Sample (LCS)

(LCS) R3813932-2 07/08/22 09:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	38.7	96.8	80.0-120	
Fluoride	8.00	8.05	101	80.0-120	
Sulfate	40.0	41.1	103	80.0-120	

L1506276-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506276-07 07/08/22 11:06 • (MS) R3813932-3 07/08/22 11:20 • (MSD) R3813932-4 07/08/22 11:35

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	500	900	1420	1430	103	107	10	80.0-120			1.36	15
Fluoride	50.0	ND	52.4	52.0	103	102	10	80.0-120			0.828	15
Sulfate	500	350	896	900	109	110	10	80.0-120			0.486	15

L1506329-19 Original Sample (OS) • Matrix Spike (MS)

(OS) L1506329-19 07/08/22 14:34 • (MS) R3813932-6 07/08/22 14:49

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	5.58	55.4	99.7	1	80.0-120	
Fluoride	5.00	ND	5.17	102	1	80.0-120	
Sulfate	50.0	ND	53.2	104	1	80.0-120	

Method Blank (MB)

(MB) R3813188-1 07/08/22 11:01

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Sulfate	0.781	J	0.594	5.00

L1506329-27 Original Sample (OS) • Duplicate (DUP)

(OS) L1506329-27 07/08/22 12:22 • (DUP) R3813188-5 07/08/22 12:35

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	8.14	7.99	1	1.79		15
Fluoride	ND	ND	1	1.11		15
Sulfate	49.4	51.0	1	3.25		15

L1506358-19 Original Sample (OS) • Duplicate (DUP)

(OS) L1506358-19 07/08/22 17:43 • (DUP) R3813188-7 07/08/22 17:57

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	6.49	5.94	1	8.79		15
Fluoride	ND	ND	1	6.05		15
Sulfate	ND	ND	1	11.0		15

Laboratory Control Sample (LCS)

(LCS) R3813188-2 07/08/22 11:15

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	41.2	103	80.0-120	
Fluoride	8.00	8.66	108	80.0-120	
Sulfate	40.0	42.3	106	80.0-120	

Cp Tc Ss Cn Sr Qc Gl Al Sc

L1506329-26 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506329-26 07/08/22 11:41 • (MS) R3813188-3 07/08/22 11:55 • (MSD) R3813188-4 07/08/22 12:08

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	ND	49.8	51.4	97.7	101	1	80.0-120			3.08	15
Fluoride	5.00	ND	5.10	5.26	102	105	1	80.0-120			3.04	15
Sulfate	50.0	ND	50.2	51.9	100	104	1	80.0-120			3.37	15

L1506358-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1506358-01 07/08/22 17:03 • (MS) R3813188-6 07/08/22 17:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	8.52	58.2	99.4	1	80.0-120	
Fluoride	5.00	ND	5.30	105	1	80.0-120	
Sulfate	50.0	52.5	101	97.4	1	80.0-120	

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

Method Blank (MB)

(MB) R3813933-1 07/08/22 18:19

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Sulfate	U		0.594	5.00

L1506353-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1506353-01 07/08/22 19:34 • (DUP) R3813933-5 07/08/22 19:49

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	449	450	1	0.255	E	15
Fluoride	1.76	1.74	1	1.10		15
Sulfate	2570	2570	1	0.130	E	15

L1506353-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1506353-11 07/08/22 23:03 • (DUP) R3813933-7 07/08/22 23:18

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	64.2	64.3	1	0.243		15
Fluoride	0.454	0.466	1	2.52		15
Sulfate	793	795	1	0.221	E	15

Laboratory Control Sample (LCS)

(LCS) R3813933-2 07/08/22 18:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	39.0	97.6	80.0-120	
Fluoride	8.00	8.06	101	80.0-120	
Sulfate	40.0	41.3	103	80.0-120	

L1506306-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506306-04 07/08/22 18:49 • (MS) R3813933-3 07/08/22 19:04 • (MSD) R3813933-4 07/08/22 19:19

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	1.86	52.0	52.0	100	100	1	80.0-120			0.0610	15
Fluoride	5.00	ND	4.64	4.90	90.9	96.2	1	80.0-120			5.61	15
Sulfate	50.0	492	522	520	58.4	55.5	1	80.0-120	E V	E V	0.283	15

L1506353-10 Original Sample (OS) • Matrix Spike (MS)

(OS) L1506353-10 07/08/22 22:33 • (MS) R3813933-6 07/08/22 22:48

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	64.6	112	95.7	1	80.0-120	
Fluoride	5.00	0.439	5.51	101	1	80.0-120	
Sulfate	50.0	795	824	58.7	1	80.0-120	E V

Cp Tc Ss Cn Sr Qc Gl Al Sc

Method Blank (MB)

(MB) R3812838-1 07/08/22 18:48

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Sulfate	U		0.594	5.00

L1506429-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1506429-02 07/08/22 20:52 • (DUP) R3812838-3 07/08/22 21:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	83.4	84.5	1	1.30		15
Fluoride	0.515	0.511	1	0.760		15
Sulfate	33.4	33.4	1	0.146		15

L1506614-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1506614-01 07/09/22 01:51 • (DUP) R3812838-6 07/09/22 02:06

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1.78	1.74	1	2.05		15
Sulfate	154	154	1	0.273		15

Laboratory Control Sample (LCS)

(LCS) R3812838-2 07/08/22 19:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	38.6	96.4	80.0-120	
Fluoride	8.00	7.96	99.5	80.0-120	
Sulfate	40.0	37.9	94.8	80.0-120	

L1506569-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506569-03 07/08/22 22:55 • (MS) R3812838-4 07/08/22 23:11 • (MSD) R3812838-5 07/09/22 00:03

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	1.76	51.5	52.2	99.4	101	1	80.0-120			1.45	15
Fluoride	5.00	ND	5.01	5.13	98.4	101	1	80.0-120			2.22	15

L1506569-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506569-03 07/08/22 22:55 • (MS) R3812838-4 07/08/22 23:11 • (MSD) R3812838-5 07/09/22 00:03

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	50.0	ND	52.1	52.3	97.8	98.2	1	80.0-120			0.428	15

L1506632-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1506632-05 07/09/22 03:24 • (MS) R3812838-7 07/09/22 03:39

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	1.65	52.8	102	1	80.0-120	
Fluoride	5.00	ND	5.09	102	1	80.0-120	
Sulfate	50.0	ND	53.1	100	1	80.0-120	

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

Method Blank (MB)

(MB) R3812241-1 07/07/22 20:00

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron	U		0.0200	0.200

Laboratory Control Sample (LCS)

(LCS) R3812241-2 07/07/22 20:03

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1.00	0.948	94.8	80.0-120	

L1506353-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506353-07 07/07/22 20:06 • (MS) R3812241-4 07/07/22 20:11 • (MSD) R3812241-5 07/07/22 20:14

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1.00	ND	1.13	1.13	96.3	96.3	1	75.0-125			0.0130	20

Method Blank (MB)

(MB) R3811949-1 07/07/22 08:29

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron	U		0.0200	0.200

Laboratory Control Sample (LCS)

(LCS) R3811949-2 07/07/22 08:31

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1.00	0.952	95.2	80.0-120	

L1506358-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506358-09 07/07/22 08:34 • (MS) R3811949-4 07/07/22 08:40 • (MSD) R3811949-5 07/07/22 08:42

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1.00	ND	1.11	1.11	94.3	94.5	1	75.0-125			0.173	20

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

Method Blank (MB)

(MB) R3812235-6 07/07/22 18:51

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron	U		0.0200	0.200

Laboratory Control Sample (LCS)

(LCS) R3812235-7 07/07/22 18:54

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1.00	0.955	95.5	80.0-120	

L1506358-25 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506358-25 07/07/22 18:57 • (MS) R3812235-9 07/07/22 19:02 • (MSD) R3812235-10 07/07/22 19:04

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1.00	0.340	1.17	1.21	83.3	86.8	1	75.0-125			2.88	20

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

Method Blank (MB)

(MB) R3812264-1 07/07/22 22:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron	U		0.0200	0.200

Laboratory Control Sample (LCS)

(LCS) R3812264-2 07/07/22 22:06

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1.00	0.945	94.5	80.0-120	

L1506439-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506439-01 07/07/22 22:09 • (MS) R3812264-4 07/07/22 22:14 • (MSD) R3812264-5 07/07/22 22:17

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1.00	ND	1.01	0.999	96.5	95.7	1	75.0-125			0.769	20

Method Blank (MB)

(MB) R3812229-1 07/07/22 20:31

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Calcium	U		0.0936	1.00

Laboratory Control Sample (LCS)

(LCS) R3812229-2 07/07/22 20:34

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Calcium	5.00	4.49	89.8	80.0-120	

L1506329-36 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506329-36 07/07/22 20:38 • (MS) R3812229-4 07/07/22 20:45 • (MSD) R3812229-5 07/07/22 20:48

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Calcium	5.00	80.7	86.1	84.0	109	67.1	1	75.0-125		V	2.46	20

Method Blank (MB)

(MB) R3811425-1 07/06/22 12:29

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Calcium	0.112	J	0.0936	1.00

Laboratory Control Sample (LCS)

(LCS) R3811425-2 07/06/22 12:32

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	5.00	5.28	106	80.0-120	

L1506358-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506358-05 07/06/22 12:36 • (MS) R3811425-4 07/06/22 12:42 • (MSD) R3811425-5 07/06/22 12:46

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium	5.00	14.6	20.4	20.5	115	118	1	75.0-125			0.750	20

Method Blank (MB)

(MB) R3812303-1 07/07/22 19:44

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Calcium	U		0.0936	1.00

Laboratory Control Sample (LCS)

(LCS) R3812303-2 07/07/22 19:48

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	5.00	4.98	99.6	80.0-120	

L1506569-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506569-03 07/07/22 19:52 • (MS) R3812303-4 07/07/22 19:59 • (MSD) R3812303-5 07/07/22 20:03

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium	5.00	3.24	7.74	8.25	89.8	100	1	75.0-125			6.38	20

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

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

MDL	Method Detection Limit.
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.
J4	The associated batch QC was outside the established quality control range for accuracy.
Q	Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

COC1

Chain of Custody Page 1 of 5

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MT JULIET, TN

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

SDG # L1506358
A116

Acctnum: GBMCBAR
Template: T198831
Prelogin: P929293
PM: 134 - Mark W. Beasley
PB: 5/31/22 [illegible]
Shipped Via: FedEX Ground

Company Name/Address:
GBMc & Associates - Bryant, AR
219 Brown Lane
Bryant, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Report to: Jonathan Brown

Email To: jbrown@gbmcassoc.com;dbraund@gbmcassoc.

Project Description: Entergy - White Bluff

City/State Collected: Redfield, AR

Please Circle: PT MT (CT) ET

Phone: 501-847-7077

Client Project #: 1145-21-080

Lab Project #: GBMCBAR-ENTERGYWB

Collected by (print): Danielle Braund

Site/Facility ID #: CADL - CCR

P.O. #

Collected by (signature): Danielle Braund

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

Quote #

Date Results Needed

Immediately Packed on Ice N___ Y X

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	B, Ca 250mlHDPE-HNO3	Cl, F, SO4, TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-101S	Grab	GW	36.1	6/15/22	1050	2	X	X	5.98	-01
MW-102S	↓	GW	33.0	6/14/22	1630	2	X	X	6.06	-02
MW-103S		GW	14.3	6/13/22	1302	2	X	X	4.31	-03
MW-104S		GW	28.2	6/13/22	1700	2	X	X	4.82	-04
MW-105S		GW	26.3	6/14/22	0845	2	X	X	5.97	-05
MW-106S		GW	9.6	6/14/22	0935	2	X	X	4.01	-06
MW-110S		GW	9.0	6/13/22	1507	2	X	X	5.49	-07
MW-111S		GW	12.7	6/14/22	1015	2	X	X	4.05	-08
MW-101D		GW	96.8	6/15/22	0905	2	X	X	7.75	-09
MW-102D	↓	GW	91.3	6/14/22	1748	2	X	X	8.17	-10

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

Remarks: Final pH in 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)		
Danielle Braund	6/16/22	1500		Trip Blank Received: Yes / (No) HCL / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 78	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 6/17/22 Time: 900	Hold: Condition: NCF / (OK)

Company Name/Address:
GBMc & Associates - Bryant, AR
219 Brown Lane
Bryant, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 2 of 5

Pace
PEOPLE ADVANCING SCIENCE

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

Report to: Jonathan Brown

Email To: jbrown@gbmcassoc.com;dbraund@gbmcassoc.

Project Description: Entergy - White Bluff

City/State Collected: Redfield, AR

Please Circle: PT MT (CT) ET

Phone: 501-847-7077

Client Project # 1145-21-080

Lab Project # GBMCBAR-ENTERGYWB

SDG # L1506358

Table #

Collected by (print): Danielle Braund

Site/Facility ID # CADL - CCR

P.O. #

Acctnum: GBMCBAR
Template: T198831
Prelogin: P929293
PM: 134 - Mark W. Beasley
PB: 5/31/22 [illegible]
Shipped Via: FedEX Ground

Collected by (signature): Danielle Braund

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

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y X

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	B, Ca 250mlHDPE-HNO3	Cl, F, SO4, TDS 250mlHDPE-NoPres								Remarks	Sample # (lab only)
MW-103D	Grab	GW	41.2	6/13/22	1427	2	X	X								8.30	-11
MW-104D	↓	GW	86.7	6/13/22	1726	2	X	X								7.82	-12
MW-105D		GW	80.0	6/14/22	0905	2	X	X								8.61	-13
MW-106D		GW	41.9	6/14/22	1110	2	X	X								8.49	-14
MW-107D		GW	20.5	6/14/22	1105	2	X	X								7.36	-15
MW-108D		GW	45.3	6/14/22	1245	2	X	X								8.38	-16
MW-109D		GW	79.1	6/14/22	1545	2	X	X								7.97	-17
MW-110D		GW	32.2	6/13/22	1541	2	X	X								8.28	-18
~~MW-111D~~		~~GW~~	—	—	—	—											
MW-112D	↓	GW	87.6	6/15/22	1620	2	X	X								8.15	-19

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

Remarks: Final pH in 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)		
Danielle Braund	6/16/22	1500		Trip Blank Received: Yes / (No) HCL / MeOH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 78	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 6/17/22 Time: 900	Hold: Condition: NCF / (OK)

Company Name/Address:
GBMc & Associates - Bryant, AR
219 Brown Lane
Bryant, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 3 of 5

Pace PEOPLE ADVANCING SCIENCE

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

Report to: **Jonathan Brown**

Email To: jbrown@gbmcassoc.com;dbraund@gbmcassoc.

Project Description: **Entergy - White Bluff**

City/State Collected: Redfield, AR

Please Circle: PT MT (CT) ET

Phone: **501-847-7077**

Client Project # 1145-21-080

Lab Project # **GBMCBAR-ENTERGYWB**

SDG # L1506358

Table #

Collected by (print): Danielle Braund

Site/Facility ID # **CADL - CCR**

P.O. #

Acctnum: **GBMCBAR**

Template: **T198831**

Prelogin: **P929293**

PM: **134 - Mark W. Beasley**

PB: 5/31/22 tcd

Collected by (signature): Danielle Braund

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

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y X

Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	B, Ca 250mlHDPE-HNO3	Cl, F, SO4, TDS 250mlHDPE-NoPres								Remarks	Sample # (lab only)
MW-113D	Grab	GW	9.5	6/14/22	1235	2	X	X								6.97	-20
MW-114D	↓	GW	60.4	6/15/22	1815	2	X	X								8.70	-21
MW-115D	↓	GW	74.2	6/14/22	1415	2	X	X								8.62	-22
MW-118D	↓	GW	41.0	6/15/22	1330	2	X	X								7.77	-23
FIELD BLANK 1	—	GW	—	6/14/22	0850	2	X	X								DI H_2O	-24
DUPLICATE 1 108D	Grab	GW	45.3	6/14/22	1245	2	X	X								8.38	-25
FIELD BLANK 2	—	GW	—	6/15/22	0800	2	X	X								DI H_2O	-26
DUPLICATE 2 101S	Grab	GW	36.1	6/15/22	1050	2	X	X								5.98	-27
~~FIELD BLANK 3~~		GW															
DUPLICATE 3 104S	Grab	GW	28.2	6/13/22	1700	2	X	X								4.82	-28

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

Remarks: Final pH in 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	
Danielle Braund	6/16/22	1500			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 78	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 6/17/22 Time: 900	Hold: Condition: NCF / (OK)

Company Name/Address:
GBMc & Associates - Bryant, AR
219 Brown Lane
Bryant, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 4 of 5

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

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

Report to: Jonathan Brown

Email To: jbrown@gbmcassoc.com;dbraund@gbmcassoc.

Project Description: Entergy - White Bluff

City/State Collected: Redfield, AR

Please Circle: PT MT (CT) ET

Phone: 501-847-7077

Client Project # 1145-21-080

Lab Project # GBMCBAR-ENTERGYWB

SDG # L1506358

Table #

Collected by (print): Danielle Braund

Site/Facility ID # RECYCLE PONDS

P.O. #

Acctnum: GBMCBAR
Template: T198822
Prelogin: P929295
PM: 134 - Mark W. Beasley
PB: BF 5/31/22
Shipped Via: FedEX Ground

Collected by (signature): Danielle Braund

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

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y X

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	B, Ca 250mlHDPE-HNO3	Cl, F, SO4, TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
RP-1	Grab	GW	8.8	6/15/22	1346	2	X	X	3.67	-29
RP-2	↓	GW	14.9	6/15/22	1220	2	X	X	4.30	-30
RP-3		GW	7.7	6/16/22	0905	2	X	X	3.14	-31
RP-4		GW	9.0	6/16/22	1015	2	X	X	5.58	-32
RP-5		GW	9.0	6/15/22	1745	2	X	X	3.88	-33
RP-6		GW	11.4	6/13/22	1045	2	X	X	4.75	-34
RP-7		GW	13.0	6/15/22	1630	2	X	X	3.79	-35
RP-8		GW	10.7	6/15/22	1520	2	X	X	4.31	-36
RP-9		GW	9.1	6/16/22	1030	2	X	X	6.53	-37
RP-10	↓	GW	8.2	6/16/22	0842	2	X	X	3.80	-38

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

Remarks: Final pH in 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 #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	
Danielle Braund	6/16/22	1500		Trip Blank Received: Yes / (No) HCL / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 78
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 6/17/22 Time: 900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Company Name/Address:
GBMc & Associates - Bryant, AR

219 Brown Lane
Bryant, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 5 of 5

Pace PEOPLE ADVANCING SCIENCE

MT JULIET, TN

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

Report to: Jonathan Brown

Email To: jbrown@gbmcassoc.com;dbraund@gbmcassoc.

Project Description: Entergy - White Bluff

City/State Collected: Redfield, AR

Please Circle: PT MT (CT) ET

Phone: 501-847-7077

Client Project #: 1145-21-080

Lab Project #: GBMCBAR-ENTERGYWB

SDG # L1506358

Table #

Collected by (print): Danielle Braund

Site/Facility ID #: RECYCLE PONDS

P.O. #

Acctnum: GBMCBAR
Template: T198822
Prelogin: P929295
PM: 134 - Mark W. Beasley
PB: BF 5/31/22
Shipped Via: FedEX Ground

Collected by (signature): Danielle Braund

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	B, Ca 250mlHDPE-HNO3	Cl, F, SO4, TDS 250mlHDPE-NoPres								Remarks	Sample # (lab only)
~~FIELD BLANK~~	~~—~~	~~GW~~														~~DIH2O~~	
DUPLICATE RP-10	Grab	GW	8.2	6/16/22	0842	2	X	X								3.80	-39
		~~GW~~															

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

Remarks: Final pH in 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)		
Danielle Braund	6/16/22			Trip Blank Received: Yes / (No) HCL / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 78	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 6/17/22 Time: 900	Hold: Condition: NCF / (OK)

4506358

Tracking Numbers	[redacted]	Temperature
5719 6189 7339	[redacted]	DRAT 0,5 to=0,5
5719 6193 8104	[redacted]	DRAT 5,9 to=5,9
5719 6189 7350	[redacted]	DRAT 3,9 to=3,9
5719 6189 7340	[redacted]	DRAT 3,2 to=3,2
~~5719~~	[redacted]	
	[redacted]	

Pace Analytical®

ANALYTICAL REPORT

December 28, 2022

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

GBMc & Associates - Bryant, AR

Sample Delivery Group:	L1566306
Samples Received:	12/10/2022
Project Number:	1145-21-080
Description:	Entergy - White Bluff
Site:	CADL - CCR
Report To:	Johnathon Brown 219 Brown Lane Bryant, AR 72022

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

Pace Analytical National

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

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9 Sc

MW-101S L1566306-01 GW

Collected by: Danielle Braund | Collected date/time: 12/07/22 15:37 | Received date/time: 12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973969	1	12/14/22 10:46	12/14/22 12:54	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974241	1	12/15/22 10:58	12/15/22 10:58	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 06:50	12/15/22 06:50	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974152	1	12/19/22 12:47	12/20/22 01:57	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1974154	1	12/16/22 15:31	12/17/22 14:03	LD	Mt. Juliet, TN

MW-102S L1566306-02 GW

Collected by: Danielle Braund | Collected date/time: 12/06/22 14:15 | Received date/time: 12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973329	1	12/13/22 08:49	12/13/22 10:12	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974241	1	12/15/22 11:02	12/15/22 11:02	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 07:28	12/15/22 07:28	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974152	1	12/19/22 12:47	12/20/22 01:59	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1974154	1	12/16/22 15:31	12/17/22 14:07	LD	Mt. Juliet, TN

MW-103S L1566306-03 GW

Collected by: Danielle Braund | Collected date/time: 12/06/22 13:45 | Received date/time: 12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973329	1	12/13/22 08:49	12/13/22 10:12	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974241	1	12/15/22 11:07	12/15/22 11:07	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 07:40	12/15/22 07:40	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1977041	1	12/20/22 14:27	12/21/22 09:29	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1977041	1	12/20/22 14:27	12/21/22 17:40	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1974154	1	12/16/22 15:31	12/17/22 14:10	LD	Mt. Juliet, TN

MW-104S L1566306-04 GW

Collected by: Danielle Braund | Collected date/time: 12/08/22 11:35 | Received date/time: 12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1974716	1	12/15/22 01:41	12/15/22 07:51	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974945	1	12/15/22 14:36	12/15/22 14:36	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 08:05	12/15/22 08:05	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974497	1	12/15/22 11:30	12/15/22 17:10	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977083	.9	12/20/22 11:14	12/20/22 15:56	LD	Mt. Juliet, TN

MW-105S L1566306-05 GW

Collected by: Danielle Braund | Collected date/time: 12/06/22 09:07 | Received date/time: 12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973329	1	12/13/22 08:49	12/13/22 10:12	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974241	1	12/15/22 11:10	12/15/22 11:10	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 08:30	12/15/22 08:30	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974497	1	12/15/22 11:30	12/15/22 17:13	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977083	.9	12/20/22 11:14	12/20/22 15:59	LD	Mt. Juliet, TN

MW-106S L1566306-06 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/06/22 09:43	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973329	1	12/13/22 08:49	12/13/22 10:12	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974247	1	12/19/22 07:12	12/19/22 07:12	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 08:43	12/15/22 08:43	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	10	12/15/22 08:55	12/15/22 08:55	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974497	1	12/15/22 11:30	12/15/22 17:16	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977083	.9	12/20/22 11:14	12/20/22 16:09	LD	Mt. Juliet, TN

MW-110S L1566306-07 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/06/22 13:09	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973349	1	12/13/22 09:11	12/13/22 11:39	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974247	1	12/19/22 07:23	12/19/22 07:23	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 09:08	12/15/22 09:08	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974497	1	12/15/22 11:30	12/15/22 17:19	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977083	.9	12/20/22 11:14	12/20/22 16:12	LD	Mt. Juliet, TN

MW-111S L1566306-08 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/06/22 10:13	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973349	1	12/13/22 09:11	12/13/22 11:39	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974247	1	12/19/22 07:25	12/19/22 07:25	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 09:58	12/15/22 09:58	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	10	12/15/22 10:10	12/15/22 10:10	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974497	1	12/15/22 11:30	12/15/22 17:22	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977083	.9	12/20/22 11:14	12/20/22 16:15	LD	Mt. Juliet, TN

MW-101D L1566306-09 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/06/22 16:20	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973349	1	12/13/22 09:11	12/13/22 11:39	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974247	1	12/19/22 07:30	12/19/22 07:30	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 10:22	12/15/22 10:22	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974497	1	12/15/22 11:30	12/15/22 17:24	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977083	.9	12/20/22 11:14	12/20/22 16:19	LD	Mt. Juliet, TN

MW-102D L1566306-10 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/07/22 14:35	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973969	1	12/14/22 10:46	12/14/22 12:54	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974247	1	12/19/22 07:35	12/19/22 07:35	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	100	12/15/22 10:47	12/15/22 10:47	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974497	1	12/15/22 11:30	12/15/22 17:32	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977085	1	12/21/22 10:27	12/22/22 00:54	LD	Mt. Juliet, TN

Collected by	Collected date/time	Received date/time
Danielle Braund	12/08/22 13:37	12/10/22 10:00

MW-103D L1566306-11 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1974716	1	12/15/22 01:41	12/15/22 07:51	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974247	1	12/19/22 07:39	12/19/22 07:39	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 11:00	12/15/22 11:00	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974497	1	12/15/22 11:30	12/15/22 17:35	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977085	1	12/21/22 10:27	12/21/22 22:58	LD	Mt. Juliet, TN

Collected by	Collected date/time	Received date/time
Danielle Braund	12/06/22 10:20	12/10/22 10:00

MW-104D L1566306-12 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973349	1	12/13/22 09:11	12/13/22 11:39	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974945	1	12/15/22 14:39	12/15/22 14:39	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 11:25	12/15/22 11:25	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974497	1	12/15/22 11:30	12/15/22 17:38	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977085	1	12/21/22 10:27	12/21/22 23:02	LD	Mt. Juliet, TN

Collected by	Collected date/time	Received date/time
Danielle Braund	12/08/22 09:22	12/10/22 10:00

MW-105D L1566306-13 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1974716	1	12/15/22 01:41	12/15/22 07:51	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974945	1	12/15/22 14:46	12/15/22 14:46	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 11:37	12/15/22 11:37	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974497	1	12/15/22 11:30	12/15/22 17:41	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977085	1	12/21/22 10:27	12/21/22 23:05	LD	Mt. Juliet, TN

Collected by	Collected date/time	Received date/time
Danielle Braund	12/08/22 12:35	12/10/22 10:00

MW-106D L1566306-14 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1974716	1	12/15/22 01:41	12/15/22 07:51	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974945	1	12/15/22 14:52	12/15/22 14:52	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 12:40	12/15/22 12:40	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974810	1	12/15/22 11:47	12/16/22 00:47	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977085	1	12/21/22 10:27	12/21/22 23:15	LD	Mt. Juliet, TN

Collected by	Collected date/time	Received date/time
Danielle Braund	12/06/22 10:49	12/10/22 10:00

MW-107D L1566306-15 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973349	1	12/13/22 09:11	12/13/22 11:39	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974945	1	12/15/22 15:11	12/15/22 15:11	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 12:52	12/15/22 12:52	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974810	1	12/15/22 11:47	12/16/22 00:49	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977085	1	12/21/22 10:27	12/21/22 23:18	LD	Mt. Juliet, TN

MW-108D L1566306-16 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 13:30	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974945	1	12/15/22 15:18	12/15/22 15:18	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974156	1	12/15/22 13:17	12/15/22 13:17	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974810	1	12/15/22 11:47	12/16/22 00:52	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977085	1	12/21/22 10:27	12/21/22 23:21	LD	Mt. Juliet, TN

MW-109D L1566306-17 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 11:45	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974945	1	12/15/22 15:24	12/15/22 15:24	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 16:11	12/14/22 16:11	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974810	1	12/15/22 11:47	12/16/22 00:55	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977085	1	12/21/22 10:27	12/21/22 23:25	LD	Mt. Juliet, TN

MW-110D L1566306-18 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 14:30	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974945	1	12/15/22 15:31	12/15/22 15:31	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 16:25	12/14/22 16:25	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974810	1	12/15/22 11:47	12/16/22 01:03	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977085	1	12/21/22 10:27	12/21/22 23:28	LD	Mt. Juliet, TN

MW-112D L1566306-19 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/07/22 16:40	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973969	1	12/14/22 10:46	12/14/22 12:54	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974945	1	12/15/22 15:38	12/15/22 15:38	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 17:23	12/14/22 17:23	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974810	1	12/15/22 11:47	12/16/22 01:06	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977085	1	12/21/22 10:27	12/21/22 23:31	LD	Mt. Juliet, TN

MW-113D L1566306-20 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/06/22 14:27	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973349	1	12/13/22 09:11	12/13/22 11:39	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974945	1	12/15/22 15:44	12/15/22 15:44	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 17:37	12/14/22 17:37	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	10	12/14/22 18:20	12/14/22 18:20	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974810	1	12/15/22 11:47	12/16/22 01:08	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1977085	1	12/21/22 10:27	12/21/22 23:35	LD	Mt. Juliet, TN

MW-114D L1566306-21 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 16:40	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 07:31	12/19/22 07:31	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 18:35	12/14/22 18:35	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974810	1	12/15/22 11:47	12/16/22 01:11	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 16:11	LD	Mt. Juliet, TN

MW-115D L1566306-22 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 12:40	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 07:38	12/19/22 07:38	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 18:49	12/14/22 18:49	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974810	1	12/15/22 11:47	12/16/22 01:14	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 16:25	LD	Mt. Juliet, TN

MW-118D L1566306-23 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 16:00	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 07:45	12/19/22 07:45	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 19:04	12/14/22 19:04	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974810	1	12/15/22 11:47	12/16/22 01:17	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 16:28	LD	Mt. Juliet, TN

FIELD BLANK 1 L1566306-24 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/06/22 15:30	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973349	1	12/13/22 09:11	12/13/22 11:39	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 07:51	12/19/22 07:51	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 19:32	12/14/22 19:32	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974810	1	12/15/22 11:47	12/16/22 01:19	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 16:31	LD	Mt. Juliet, TN

FIELD BLANK 2 L1566306-25 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/07/22 14:20	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973969	1	12/14/22 10:46	12/14/22 12:54	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 07:55	12/19/22 07:55	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 19:47	12/14/22 19:47	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974810	1	12/15/22 11:47	12/16/22 01:22	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 16:34	LD	Mt. Juliet, TN

DUPLICATE 1 107D L1566306-26 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/06/22 10:49	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973349	1	12/13/22 09:11	12/13/22 11:39	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 07:59	12/19/22 07:59	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 20:01	12/14/22 20:01	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974810	1	12/15/22 11:47	12/16/22 01:25	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 16:45	LD	Mt. Juliet, TN

DUPLICATE 2 106S L1566306-27 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/06/22 13:09	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973349	1	12/13/22 09:11	12/13/22 11:39	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 08:16	12/19/22 08:16	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 20:30	12/14/22 20:30	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974810	1	12/15/22 11:47	12/16/22 01:28	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 16:48	LD	Mt. Juliet, TN

DUPLICATE 3 101D L1566306-28 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/06/22 16:20	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973349	1	12/13/22 09:11	12/13/22 11:39	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 08:19	12/19/22 08:19	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 21:28	12/14/22 21:28	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974941	1	12/15/22 22:11	12/16/22 08:31	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 16:52	LD	Mt. Juliet, TN

RP FIELD BLANK L1566306-29 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/06/22 09:00	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973349	1	12/13/22 09:11	12/13/22 11:39	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 08:27	12/19/22 08:27	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 21:57	12/14/22 21:57	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974941	1	12/15/22 22:11	12/16/22 08:42	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 16:55	LD	Mt. Juliet, TN

RP DUPLICATE RP-8 L1566306-30 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 14:24	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 08:31	12/19/22 08:31	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 22:11	12/14/22 22:11	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974684	5	12/16/22 12:40	12/16/22 12:40	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974941	1	12/15/22 22:11	12/16/22 08:45	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 16:58	LD	Mt. Juliet, TN

RP-1 L1566306-31 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 15:55	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 08:36	12/19/22 08:36	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	10	12/14/22 22:25	12/14/22 22:25	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974941	1	12/15/22 22:11	12/16/22 08:48	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 17:01	LD	Mt. Juliet, TN

RP-2 L1566306-32 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 15:29	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 08:41	12/19/22 08:41	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 22:54	12/14/22 22:54	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974941	1	12/15/22 22:11	12/16/22 08:51	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 17:05	LD	Mt. Juliet, TN

RP-3 L1566306-33 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 14:57	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 08:46	12/19/22 08:46	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/14/22 23:09	12/14/22 23:09	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	20	12/14/22 23:33	12/14/22 23:33	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974941	1	12/15/22 22:11	12/16/22 08:59	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 17:08	LD	Mt. Juliet, TN

RP-4 L1566306-34 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/06/22 08:37	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973349	1	12/13/22 09:11	12/13/22 11:39	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 08:51	12/19/22 08:51	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/15/22 00:15	12/15/22 00:15	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974941	1	12/15/22 22:11	12/16/22 09:02	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 17:11	LD	Mt. Juliet, TN

RP-5 L1566306-35 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 13:02	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 08:55	12/19/22 08:55	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/15/22 00:44	12/15/22 00:44	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974684	5	12/16/22 12:53	12/16/22 12:53	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974941	1	12/15/22 22:11	12/16/22 09:05	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 17:14	LD	Mt. Juliet, TN

RP-6 L1566306-36 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 13:36	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 09:09	12/19/22 09:09	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	1	12/15/22 01:27	12/15/22 01:27	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974289	20	12/15/22 01:42	12/15/22 01:42	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1974941	1	12/15/22 22:11	12/16/22 09:08	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 17:24	LD	Mt. Juliet, TN

RP-7 L1566306-37 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 13:59	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 09:14	12/19/22 09:14	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974445	1	12/16/22 08:47	12/16/22 08:47	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974445	5	12/16/22 09:03	12/16/22 09:03	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1975471	1	12/19/22 09:30	12/19/22 20:14	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 17:28	LD	Mt. Juliet, TN

RP-8 L1566306-38 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 14:24	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975415	1	12/19/22 09:19	12/19/22 09:19	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974445	1	12/16/22 09:24	12/16/22 09:24	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974445	5	12/16/22 09:40	12/16/22 09:40	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1975471	1	12/19/22 09:30	12/19/22 20:17	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 17:31	LD	Mt. Juliet, TN

RP-9 L1566306-39 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 16:33	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1975416	1	12/19/22 10:29	12/19/22 10:29	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974451	1	12/15/22 13:55	12/15/22 13:55	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1975471	1	12/19/22 09:30	12/19/22 19:35	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 17:34	LD	Mt. Juliet, TN

RP-10 L1566306-40 GW

Collected by	Collected date/time	Received date/time
Danielle Braund	12/05/22 17:02	12/10/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1973182	1	12/12/22 20:46	12/13/22 01:15	AS	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1974241	1	12/15/22 11:24	12/15/22 11:24	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1974451	1	12/15/22 18:14	12/15/22 18:14	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1975825	5	12/17/22 00:34	12/17/22 00:34	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1975471	1	12/19/22 09:30	12/19/22 20:20	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1975620	1	12/20/22 01:23	12/20/22 17:37	LD	Mt. Juliet, TN

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

Mark W. Beasley
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	217	J4	10.0	1	12/14/2022 12:54	WG1973969

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	56.1		20.0	1	12/15/2022 10:58	WG1974241

Sample Narrative:

L1566306-01 WG1974241: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	7.65		1.00	1	12/15/2022 06:50	WG1974156
Fluoride	ND		0.150	1	12/15/2022 06:50	WG1974156
Sulfate	51.3		5.00	1	12/15/2022 06:50	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	12/20/2022 01:57	WG1974152
Lithium	0.0393		0.0150	1	12/20/2022 01:57	WG1974152

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0752		0.00200	1	12/17/2022 14:03	WG1974154
Calcium	15.9		1.00	1	12/17/2022 14:03	WG1974154
Magnesium	4.36		1.00	1	12/17/2022 14:03	WG1974154
Sodium	27.0		2.00	1	12/17/2022 14:03	WG1974154
Strontium	0.353		0.0100	1	12/17/2022 14:03	WG1974154

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	3860		200	1	12/13/2022 10:12	WG1973329

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	60.4		20.0	1	12/15/2022 11:02	WG1974241

Sample Narrative:

L1566306-02 WG1974241: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	8.08		1.00	1	12/15/2022 07:28	WG1974156
Fluoride	ND		0.150	1	12/15/2022 07:28	WG1974156
Sulfate	27.6		5.00	1	12/15/2022 07:28	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	12/20/2022 01:59	WG1974152
Lithium	0.0297		0.0150	1	12/20/2022 01:59	WG1974152

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0762		0.00200	1	12/17/2022 14:07	WG1974154
Calcium	16.2		1.00	1	12/17/2022 14:07	WG1974154
Magnesium	4.35		1.00	1	12/17/2022 14:07	WG1974154
Sodium	26.7		2.00	1	12/17/2022 14:07	WG1974154
Strontium	0.357		0.0100	1	12/17/2022 14:07	WG1974154

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	980		50.0	1	12/13/2022 10:12	WG1973329

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/15/2022 11:07	WG1974241

Sample Narrative:

L1566306-03 WG1974241: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	5.14		1.00	1	12/15/2022 07:40	WG1974156
Fluoride	ND		0.150	1	12/15/2022 07:40	WG1974156
Sulfate	79.4		5.00	1	12/15/2022 07:40	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.282		0.200	1	12/21/2022 17:40	WG1977041
Lithium	ND		0.0150	1	12/21/2022 09:29	WG1977041

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0884		0.00200	1	12/17/2022 14:10	WG1974154
Calcium	5.41		1.00	1	12/17/2022 14:10	WG1974154
Magnesium	1.51		1.00	1	12/17/2022 14:10	WG1974154
Sodium	37.1		2.00	1	12/17/2022 14:10	WG1974154
Strontium	0.121		0.0100	1	12/17/2022 14:10	WG1974154

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	248		10.0	1	12/15/2022 07:51	WG1974716

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	25.2		20.0	1	12/15/2022 14:36	WG1974945

Sample Narrative:

L1566306-04 WG1974945: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	4.34		1.00	1	12/15/2022 08:05	WG1974156
Fluoride	ND		0.150	1	12/15/2022 08:05	WG1974156
Sulfate	79.6		5.00	1	12/15/2022 08:05	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.837		0.200	1	12/15/2022 17:10	WG1974497
Lithium	0.0364		0.0150	1	12/15/2022 17:10	WG1974497

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0379		0.00180	.9	12/20/2022 15:56	WG1977083
Calcium	15.6		0.900	.9	12/20/2022 15:56	WG1977083
Magnesium	3.49		0.900	.9	12/20/2022 15:56	WG1977083
Sodium	22.7		1.80	.9	12/20/2022 15:56	WG1977083
Strontium	0.300		0.00900	.9	12/20/2022 15:56	WG1977083

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	97.0		10.0	1	12/13/2022 10:12	WG1973329

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	64.3		20.0	1	12/15/2022 11:10	WG1974241

Sample Narrative:

L1566306-05 WG1974241: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	5.25		1.00	1	12/15/2022 08:30	WG1974156
Fluoride	ND		0.150	1	12/15/2022 08:30	WG1974156
Sulfate	32.0		5.00	1	12/15/2022 08:30	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	12/15/2022 17:13	WG1974497
Lithium	0.0409		0.0150	1	12/15/2022 17:13	WG1974497

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0708		0.00180	.9	12/20/2022 15:59	WG1977083
Calcium	15.3		0.900	.9	12/20/2022 15:59	WG1977083
Magnesium	3.34		0.900	.9	12/20/2022 15:59	WG1977083
Sodium	18.0		1.80	.9	12/20/2022 15:59	WG1977083
Strontium	0.328		0.00900	.9	12/20/2022 15:59	WG1977083

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	979		10.0	1	12/13/2022 10:12	WG1973329

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 07:12	WG1974247

Sample Narrative:

L1566306-06 WG1974247: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	13.1		1.00	1	12/15/2022 08:43	WG1974156
Fluoride	0.803		0.150	1	12/15/2022 08:43	WG1974156
Sulfate	643		50.0	10	12/15/2022 08:55	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	6.39		0.200	1	12/15/2022 17:16	WG1974497
Lithium	0.0241		0.0150	1	12/15/2022 17:16	WG1974497

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0179		0.00180	.9	12/20/2022 16:09	WG1977083
Calcium	31.6		0.900	.9	12/20/2022 16:09	WG1977083
Magnesium	21.1		0.900	.9	12/20/2022 16:09	WG1977083
Sodium	202		1.80	.9	12/20/2022 16:09	WG1977083
Strontium	1.03		0.00900	.9	12/20/2022 16:09	WG1977083

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	375	J3	10.0	1	12/13/2022 11:39	WG1973349

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 07:23	WG1974247

Sample Narrative:

L1566306-07 WG1974247: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	6.57		1.00	1	12/15/2022 09:08	WG1974156
Fluoride	0.167		0.150	1	12/15/2022 09:08	WG1974156
Sulfate	194		5.00	1	12/15/2022 09:08	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	2.03		0.200	1	12/15/2022 17:19	WG1974497
Lithium	0.0318		0.0150	1	12/15/2022 17:19	WG1974497

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0295		0.00180	.9	12/20/2022 16:12	WG1977083
Calcium	5.93		0.900	.9	12/20/2022 16:12	WG1977083
Magnesium	2.87		0.900	.9	12/20/2022 16:12	WG1977083
Sodium	71.3		1.80	.9	12/20/2022 16:12	WG1977083
Strontium	0.182		0.00900	.9	12/20/2022 16:12	WG1977083

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1270		20.0	1	12/13/2022 11:39	WG1973349

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 07:25	WG1974247

Sample Narrative:

L1566306-08 WG1974247: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	11.3		1.00	1	12/15/2022 09:58	WG1974156
Fluoride	1.20		0.150	1	12/15/2022 09:58	WG1974156
Sulfate	879		50.0	10	12/15/2022 10:10	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	6.26		0.200	1	12/15/2022 17:22	WG1974497
Lithium	0.0530		0.0150	1	12/15/2022 17:22	WG1974497

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0157		0.00180	.9	12/20/2022 16:15	WG1977083
Calcium	112		0.900	.9	12/20/2022 16:15	WG1977083
Magnesium	37.3		0.900	.9	12/20/2022 16:15	WG1977083
Sodium	166		1.80	.9	12/20/2022 16:15	WG1977083
Strontium	3.03		0.00900	.9	12/20/2022 16:15	WG1977083

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	397		10.0	1	12/13/2022 11:39	WG1973349

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	231		20.0	1	12/19/2022 07:30	WG1974247

Sample Narrative:

L1566306-09 WG1974247: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	6.30		1.00	1	12/15/2022 10:22	WG1974156
Fluoride	ND		0.150	1	12/15/2022 10:22	WG1974156
Sulfate	89.9		5.00	1	12/15/2022 10:22	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.206		0.200	1	12/15/2022 17:24	WG1974497
Lithium	0.0451		0.0150	1	12/15/2022 17:24	WG1974497

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0788		0.00180	.9	12/20/2022 16:19	WG1977083
Calcium	54.3		0.900	.9	12/20/2022 16:19	WG1977083
Magnesium	12.5		0.900	.9	12/20/2022 16:19	WG1977083
Sodium	49.6		1.80	.9	12/20/2022 16:19	WG1977083
Strontium	1.23		0.00900	.9	12/20/2022 16:19	WG1977083

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	428	J4	10.0	1	12/14/2022 12:54	WG1973969

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	342		20.0	1	12/19/2022 07:35	WG1974247

Sample Narrative:

L1566306-10 WG1974247: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	ND		100	100	12/15/2022 10:47	WG1974156
Fluoride	ND		15.0	100	12/15/2022 10:47	WG1974156
Sulfate	ND		500	100	12/15/2022 10:47	WG1974156

Sample Narrative:

L1566306-10 WG1974156: dilution due to matrix

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.260		0.200	1	12/15/2022 17:32	WG1974497
Lithium	0.0515		0.0150	1	12/15/2022 17:32	WG1974497

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.605		0.00200	1	12/22/2022 00:54	WG1977085
Calcium	127		1.00	1	12/22/2022 00:54	WG1977085
Magnesium	33.1		1.00	1	12/22/2022 00:54	WG1977085
Sodium	51.6		2.00	1	12/22/2022 00:54	WG1977085
Strontium	3.19		0.0100	1	12/22/2022 00:54	WG1977085

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

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

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	398		10.0	1	12/15/2022 07:51	WG1974716

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	283		20.0	1	12/19/2022 07:39	WG1974247

Sample Narrative:

L1566306-11 WG1974247: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	7.89		1.00	1	12/15/2022 11:00	WG1974156
Fluoride	0.194		0.150	1	12/15/2022 11:00	WG1974156
Sulfate	71.6		5.00	1	12/15/2022 11:00	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.276		0.200	1	12/15/2022 17:35	WG1974497
Lithium	0.0440		0.0150	1	12/15/2022 17:35	WG1974497

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0870		0.00200	1	12/21/2022 22:58	WG1977085
Calcium	52.5		1.00	1	12/21/2022 22:58	WG1977085
Magnesium	10.9		1.00	1	12/21/2022 22:58	WG1977085
Sodium	82.8		2.00	1	12/21/2022 22:58	WG1977085
Strontium	1.33		0.0100	1	12/21/2022 22:58	WG1977085

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	307		10.0	1	12/13/2022 11:39	WG1973349

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	261		20.0	1	12/15/2022 14:39	WG1974945

Sample Narrative:

L1566306-12 WG1974945: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	9.99		1.00	1	12/15/2022 11:25	WG1974156
Fluoride	ND		0.150	1	12/15/2022 11:25	WG1974156
Sulfate	19.7		5.00	1	12/15/2022 11:25	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.242		0.200	1	12/15/2022 17:38	WG1974497
Lithium	0.0359		0.0150	1	12/15/2022 17:38	WG1974497

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0732		0.00200	1	12/21/2022 23:02	WG1977085
Calcium	57.1		1.00	1	12/21/2022 23:02	WG1977085
Magnesium	12.8		1.00	1	12/21/2022 23:02	WG1977085
Sodium	43.2		2.00	1	12/21/2022 23:02	WG1977085
Strontium	1.35		0.0100	1	12/21/2022 23:02	WG1977085

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

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	353		10.0	1	12/15/2022 07:51	WG1974716

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	268		20.0	1	12/15/2022 14:46	WG1974945

Sample Narrative:

L1566306-13 WG1974945: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	8.99		1.00	1	12/15/2022 11:37	WG1974156
Fluoride	ND		0.150	1	12/15/2022 11:37	WG1974156
Sulfate	29.5		5.00	1	12/15/2022 11:37	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.280		0.200	1	12/15/2022 17:41	WG1974497
Lithium	0.0349		0.0150	1	12/15/2022 17:41	WG1974497

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0933		0.00200	1	12/21/2022 23:05	WG1977085
Calcium	57.2		1.00	1	12/21/2022 23:05	WG1977085
Magnesium	12.2		1.00	1	12/21/2022 23:05	WG1977085
Sodium	48.8		2.00	1	12/21/2022 23:05	WG1977085
Strontium	1.42		0.0100	1	12/21/2022 23:05	WG1977085

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	329		10.0	1	12/15/2022 07:51	WG1974716

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	303		20.0	1	12/15/2022 14:52	WG1974945

Sample Narrative:

L1566306-14 WG1974945: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	5.92		1.00	1	12/15/2022 12:40	WG1974156
Fluoride	ND		0.150	1	12/15/2022 12:40	WG1974156
Sulfate	12.5		5.00	1	12/15/2022 12:40	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.304		0.200	1	12/16/2022 00:47	WG1974810
Lithium	0.0352		0.0150	1	12/16/2022 00:47	WG1974810

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.107		0.00200	1	12/21/2022 23:15	WG1977085
Calcium	56.7		1.00	1	12/21/2022 23:15	WG1977085
Magnesium	11.6		1.00	1	12/21/2022 23:15	WG1977085
Sodium	56.6		2.00	1	12/21/2022 23:15	WG1977085
Strontium	1.47		0.0100	1	12/21/2022 23:15	WG1977085

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	509		10.0	1	12/13/2022 11:39	WG1973349

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	302		20.0	1	12/15/2022 15:11	WG1974945

Sample Narrative:

L1566306-15 WG1974945: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	21.3		1.00	1	12/15/2022 12:52	WG1974156
Fluoride	ND		0.150	1	12/15/2022 12:52	WG1974156
Sulfate	129		5.00	1	12/15/2022 12:52	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.315		0.200	1	12/16/2022 00:49	WG1974810
Lithium	0.0436		0.0150	1	12/16/2022 00:49	WG1974810

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.124		0.00200	1	12/21/2022 23:18	WG1977085
Calcium	82.1		1.00	1	12/21/2022 23:18	WG1977085
Magnesium	17.4		1.00	1	12/21/2022 23:18	WG1977085
Sodium	76.2		2.00	1	12/21/2022 23:18	WG1977085
Strontium	2.14		0.0100	1	12/21/2022 23:18	WG1977085

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

Cp Tc Ss Cn Sr Qc Gl Al Sc

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	523		10.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	377		20.0	1	12/15/2022 15:18	WG1974945

Sample Narrative:

L1566306-16 WG1974945: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	13.8		1.00	1	12/15/2022 13:17	WG1974156
Fluoride	ND		0.150	1	12/15/2022 13:17	WG1974156
Sulfate	52.5		5.00	1	12/15/2022 13:17	WG1974156

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.332		0.200	1	12/16/2022 00:52	WG1974810
Lithium	0.0419		0.0150	1	12/16/2022 00:52	WG1974810

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0818		0.00200	1	12/21/2022 23:21	WG1977085
Calcium	70.5		1.00	1	12/21/2022 23:21	WG1977085
Magnesium	15.3		1.00	1	12/21/2022 23:21	WG1977085
Sodium	95.2		2.00	1	12/21/2022 23:21	WG1977085
Strontium	1.77		0.0100	1	12/21/2022 23:21	WG1977085

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	371		10.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	262		20.0	1	12/15/2022 15:24	WG1974945

Sample Narrative:

L1566306-17 WG1974945: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	6.45		1.00	1	12/14/2022 16:11	WG1974289
Fluoride	ND		0.150	1	12/14/2022 16:11	WG1974289
Sulfate	49.6		5.00	1	12/14/2022 16:11	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.308		0.200	1	12/16/2022 00:55	WG1974810
Lithium	0.0375		0.0150	1	12/16/2022 00:55	WG1974810

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0631		0.00200	1	12/21/2022 23:25	WG1977085
Calcium	50.0		1.00	1	12/21/2022 23:25	WG1977085
Magnesium	10.7		1.00	1	12/21/2022 23:25	WG1977085
Sodium	67.8		2.00	1	12/21/2022 23:25	WG1977085
Strontium	1.22		0.0100	1	12/21/2022 23:25	WG1977085

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	354		10.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	258		20.0	1	12/15/2022 15:31	WG1974945

Sample Narrative:

L1566306-18 WG1974945: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	6.34		1.00	1	12/14/2022 16:25	WG1974289
Fluoride	ND		0.150	1	12/14/2022 16:25	WG1974289
Sulfate	38.9		5.00	1	12/14/2022 16:25	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.306		0.200	1	12/16/2022 01:03	WG1974810
Lithium	0.0335		0.0150	1	12/16/2022 01:03	WG1974810

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0759		0.00200	1	12/21/2022 23:28	WG1977085
Calcium	47.7		1.00	1	12/21/2022 23:28	WG1977085
Magnesium	10.2		1.00	1	12/21/2022 23:28	WG1977085
Sodium	68.1		2.00	1	12/21/2022 23:28	WG1977085
Strontium	1.22		0.0100	1	12/21/2022 23:28	WG1977085

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

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	302	J4	10.0	1	12/14/2022 12:54	WG1973969

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	250		20.0	1	12/15/2022 15:38	WG1974945

Sample Narrative:

L1566306-19 WG1974945: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	5.80		1.00	1	12/14/2022 17:23	WG1974289
Fluoride	ND		0.150	1	12/14/2022 17:23	WG1974289
Sulfate	ND		5.00	1	12/14/2022 17:23	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.278		0.200	1	12/16/2022 01:06	WG1974810
Lithium	0.0324		0.0150	1	12/16/2022 01:06	WG1974810

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0858		0.00200	1	12/21/2022 23:31	WG1977085
Calcium	39.3		1.00	1	12/21/2022 23:31	WG1977085
Magnesium	8.85		1.00	1	12/21/2022 23:31	WG1977085
Sodium	55.1		2.00	1	12/21/2022 23:31	WG1977085
Strontium	0.944		0.0100	1	12/21/2022 23:31	WG1977085

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1190		20.0	1	12/13/2022 11:39	WG1973349

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	278		20.0	1	12/15/2022 15:44	WG1974945

Sample Narrative:

L1566306-20 WG1974945: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	14.1		1.00	1	12/14/2022 17:37	WG1974289
Fluoride	ND		0.150	1	12/14/2022 17:37	WG1974289
Sulfate	528		50.0	10	12/14/2022 18:20	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.479		0.200	1	12/16/2022 01:08	WG1974810
Lithium	0.173		0.0150	1	12/16/2022 01:08	WG1974810

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0241		0.00200	1	12/21/2022 23:35	WG1977085
Calcium	200		1.00	1	12/21/2022 23:35	WG1977085
Magnesium	53.2		1.00	1	12/21/2022 23:35	WG1977085
Sodium	81.8		2.00	1	12/21/2022 23:35	WG1977085
Strontium	4.77		0.0100	1	12/21/2022 23:35	WG1977085

Cp Tc Ss Cn Sr Qc Gl Al Sc

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	331		10.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	247		20.0	1	12/19/2022 07:31	WG1975415

Sample Narrative:

L1566306-21 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	7.46		1.00	1	12/14/2022 18:35	WG1974289
Fluoride	ND		0.150	1	12/14/2022 18:35	WG1974289
Sulfate	25.9		5.00	1	12/14/2022 18:35	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.277		0.200	1	12/16/2022 01:11	WG1974810
Lithium	0.0335		0.0150	1	12/16/2022 01:11	WG1974810

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.127		0.00200	1	12/20/2022 16:11	WG1975620
Calcium	52.1		1.00	1	12/20/2022 16:11	WG1975620
Magnesium	11.4		1.00	1	12/20/2022 16:11	WG1975620
Sodium	43.7		2.00	1	12/20/2022 16:11	WG1975620
Strontium	1.27	V	0.0100	1	12/20/2022 16:11	WG1975620

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	351		10.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	299		20.0	1	12/19/2022 07:38	WG1975415

Sample Narrative:

L1566306-22 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	4.44		1.00	1	12/14/2022 18:49	WG1974289
Fluoride	ND		0.150	1	12/14/2022 18:49	WG1974289
Sulfate	5.25		5.00	1	12/14/2022 18:49	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.327		0.200	1	12/16/2022 01:14	WG1974810
Lithium	0.0405		0.0150	1	12/16/2022 01:14	WG1974810

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0838		0.00200	1	12/20/2022 16:25	WG1975620
Calcium	43.9		1.00	1	12/20/2022 16:25	WG1975620
Magnesium	9.94		1.00	1	12/20/2022 16:25	WG1975620
Sodium	67.8		2.00	1	12/20/2022 16:25	WG1975620
Strontium	1.06		0.0100	1	12/20/2022 16:25	WG1975620

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	557		10.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	285		20.0	1	12/19/2022 07:45	WG1975415

Sample Narrative:

L1566306-23 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	8.27		1.00	1	12/14/2022 19:04	WG1974289
Fluoride	ND		0.150	1	12/14/2022 19:04	WG1974289
Sulfate	162		5.00	1	12/14/2022 19:04	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.277		0.200	1	12/16/2022 01:17	WG1974810
Lithium	0.101		0.0150	1	12/16/2022 01:17	WG1974810

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0296		0.00200	1	12/20/2022 16:28	WG1975620
Calcium	88.6		1.00	1	12/20/2022 16:28	WG1975620
Magnesium	22.6		1.00	1	12/20/2022 16:28	WG1975620
Sodium	57.5		2.00	1	12/20/2022 16:28	WG1975620
Strontium	2.09		0.0100	1	12/20/2022 16:28	WG1975620

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	ND		10.0	1	12/13/2022 11:39	WG1973349

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 07:51	WG1975415

Sample Narrative:

L1566306-24 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	ND		1.00	1	12/14/2022 19:32	WG1974289
Fluoride	ND		0.150	1	12/14/2022 19:32	WG1974289
Sulfate	ND		5.00	1	12/14/2022 19:32	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	12/16/2022 01:19	WG1974810
Lithium	ND		0.0150	1	12/16/2022 01:19	WG1974810

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	ND		0.00200	1	12/20/2022 16:31	WG1975620
Calcium	ND		1.00	1	12/20/2022 16:31	WG1975620
Magnesium	ND		1.00	1	12/20/2022 16:31	WG1975620
Sodium	ND		2.00	1	12/20/2022 16:31	WG1975620
Strontium	ND		0.0100	1	12/20/2022 16:31	WG1975620

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

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	ND	J4	10.0	1	12/14/2022 12:54	WG1973969

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 07:55	WG1975415

Sample Narrative:

L1566306-25 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	ND		1.00	1	12/14/2022 19:47	WG1974289
Fluoride	ND		0.150	1	12/14/2022 19:47	WG1974289
Sulfate	ND		5.00	1	12/14/2022 19:47	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	12/16/2022 01:22	WG1974810
Lithium	ND		0.0150	1	12/16/2022 01:22	WG1974810

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	ND		0.00200	1	12/20/2022 16:34	WG1975620
Calcium	ND		1.00	1	12/20/2022 16:34	WG1975620
Magnesium	ND		1.00	1	12/20/2022 16:34	WG1975620
Sodium	ND		2.00	1	12/20/2022 16:34	WG1975620
Strontium	ND		0.0100	1	12/20/2022 16:34	WG1975620

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	529		10.0	1	12/13/2022 11:39	WG1973349

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	304		20.0	1	12/19/2022 07:59	WG1975415

Sample Narrative:

L1566306-26 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	20.1		1.00	1	12/14/2022 20:01	WG1974289
Fluoride	ND		0.150	1	12/14/2022 20:01	WG1974289
Sulfate	130		5.00	1	12/14/2022 20:01	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.313		0.200	1	12/16/2022 01:25	WG1974810
Lithium	0.0446		0.0150	1	12/16/2022 01:25	WG1974810

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.123		0.00200	1	12/20/2022 16:45	WG1975620
Calcium	82.9		1.00	1	12/20/2022 16:45	WG1975620
Magnesium	17.6		1.00	1	12/20/2022 16:45	WG1975620
Sodium	75.3		2.00	1	12/20/2022 16:45	WG1975620
Strontium	2.12		0.0100	1	12/20/2022 16:45	WG1975620

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	398		10.0	1	12/13/2022 11:39	WG1973349

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 08:16	WG1975415

Sample Narrative:

L1566306-27 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	5.96		1.00	1	12/14/2022 20:30	WG1974289
Fluoride	ND		0.150	1	12/14/2022 20:30	WG1974289
Sulfate	196		5.00	1	12/14/2022 20:30	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	1.97		0.200	1	12/16/2022 01:28	WG1974810
Lithium	0.0320		0.0150	1	12/16/2022 01:28	WG1974810

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0317		0.00200	1	12/20/2022 16:48	WG1975620
Calcium	6.56		1.00	1	12/20/2022 16:48	WG1975620
Magnesium	3.13		1.00	1	12/20/2022 16:48	WG1975620
Sodium	76.6		2.00	1	12/20/2022 16:48	WG1975620
Strontium	0.203		0.0100	1	12/20/2022 16:48	WG1975620

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	376		10.0	1	12/13/2022 11:39	WG1973349

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	231		20.0	1	12/19/2022 08:19	WG1975415

Sample Narrative:

L1566306-28 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	5.79		1.00	1	12/14/2022 21:28	WG1974289
Fluoride	ND		0.150	1	12/14/2022 21:28	WG1974289
Sulfate	88.9		5.00	1	12/14/2022 21:28	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	12/16/2022 08:31	WG1974941
Lithium	0.0463		0.0150	1	12/16/2022 08:31	WG1974941

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0871		0.00200	1	12/20/2022 16:52	WG1975620
Calcium	60.1		1.00	1	12/20/2022 16:52	WG1975620
Magnesium	13.5		1.00	1	12/20/2022 16:52	WG1975620
Sodium	51.8		2.00	1	12/20/2022 16:52	WG1975620
Strontium	1.41		0.0100	1	12/20/2022 16:52	WG1975620

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	ND		10.0	1	12/13/2022 11:39	WG1973349

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 08:27	WG1975415

Sample Narrative:

L1566306-29 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	ND		1.00	1	12/14/2022 21:57	WG1974289
Fluoride	ND		0.150	1	12/14/2022 21:57	WG1974289
Sulfate	ND		5.00	1	12/14/2022 21:57	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	12/16/2022 08:42	WG1974941
Lithium	ND		0.0150	1	12/16/2022 08:42	WG1974941

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	ND		0.00200	1	12/20/2022 16:55	WG1975620
Calcium	ND		1.00	1	12/20/2022 16:55	WG1975620
Magnesium	ND		1.00	1	12/20/2022 16:55	WG1975620
Sodium	ND		2.00	1	12/20/2022 16:55	WG1975620
Strontium	ND		0.0100	1	12/20/2022 16:55	WG1975620

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	610		10.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 08:31	WG1975415

Sample Narrative:

L1566306-30 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	37.5		1.00	1	12/14/2022 22:11	WG1974289
Fluoride	0.350		0.150	1	12/14/2022 22:11	WG1974289
Sulfate	297		25.0	5	12/16/2022 12:40	WG1974684

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.293		0.200	1	12/16/2022 08:45	WG1974941
Lithium	0.169		0.0150	1	12/16/2022 08:45	WG1974941

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0321		0.00200	1	12/20/2022 16:58	WG1975620
Calcium	51.5		1.00	1	12/20/2022 16:58	WG1975620
Magnesium	17.9		1.00	1	12/20/2022 16:58	WG1975620
Sodium	50.2		2.00	1	12/20/2022 16:58	WG1975620
Strontium	1.34		0.0100	1	12/20/2022 16:58	WG1975620

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	4620		50.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 08:36	WG1975415

Sample Narrative:

L1566306-31 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	541		10.0	10	12/14/2022 22:25	WG1974289
Fluoride	1.56		1.50	10	12/14/2022 22:25	WG1974289
Sulfate	1920		50.0	10	12/14/2022 22:25	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	12/16/2022 08:48	WG1974941
Lithium	0.399		0.0150	1	12/16/2022 08:48	WG1974941

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0182		0.00200	1	12/20/2022 17:01	WG1975620
Calcium	342		1.00	1	12/20/2022 17:01	WG1975620
Magnesium	193		1.00	1	12/20/2022 17:01	WG1975620
Sodium	472		2.00	1	12/20/2022 17:01	WG1975620
Strontium	6.92		0.0100	1	12/20/2022 17:01	WG1975620

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

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	291		10.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 08:41	WG1975415

Sample Narrative:

L1566306-32 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	18.0		1.00	1	12/14/2022 22:54	WG1974289
Fluoride	ND		0.150	1	12/14/2022 22:54	WG1974289
Sulfate	98.8		5.00	1	12/14/2022 22:54	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	12/16/2022 08:51	WG1974941
Lithium	0.0836		0.0150	1	12/16/2022 08:51	WG1974941

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0296		0.00200	1	12/20/2022 17:05	WG1975620
Calcium	13.4		1.00	1	12/20/2022 17:05	WG1975620
Magnesium	5.36		1.00	1	12/20/2022 17:05	WG1975620
Sodium	22.6		2.00	1	12/20/2022 17:05	WG1975620
Strontium	0.335		0.0100	1	12/20/2022 17:05	WG1975620

Cp Tc Ss Cn Sr Qc Gl Al Sc

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1960		50.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 08:46	WG1975415

Sample Narrative:

L1566306-33 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	179		1.00	1	12/14/2022 23:09	WG1974289
Fluoride	0.763		0.150	1	12/14/2022 23:09	WG1974289
Sulfate	1310		100	20	12/14/2022 23:33	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	12/16/2022 08:59	WG1974941
Lithium	0.393		0.0150	1	12/16/2022 08:59	WG1974941

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0125		0.00200	1	12/20/2022 17:08	WG1975620
Calcium	197		1.00	1	12/20/2022 17:08	WG1975620
Magnesium	94.3		1.00	1	12/20/2022 17:08	WG1975620
Sodium	196		2.00	1	12/20/2022 17:08	WG1975620
Strontium	4.27		0.0100	1	12/20/2022 17:08	WG1975620

Cp Tc Ss Cn Sr Qc Gl Al Sc

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	566		10.0	1	12/13/2022 11:39	WG1973349

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	96.2		20.0	1	12/19/2022 08:51	WG1975415

Sample Narrative:

L1566306-34 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	46.0		1.00	1	12/15/2022 00:15	WG1974289
Fluoride	0.349		0.150	1	12/15/2022 00:15	WG1974289
Sulfate	182		5.00	1	12/15/2022 00:15	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.236		0.200	1	12/16/2022 09:02	WG1974941
Lithium	0.0237		0.0150	1	12/16/2022 09:02	WG1974941

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0746		0.00200	1	12/20/2022 17:11	WG1975620
Calcium	72.3		1.00	1	12/20/2022 17:11	WG1975620
Magnesium	18.5		1.00	1	12/20/2022 17:11	WG1975620
Sodium	67.1		2.00	1	12/20/2022 17:11	WG1975620
Strontium	0.879		0.0100	1	12/20/2022 17:11	WG1975620

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	552		10.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 08:55	WG1975415

Sample Narrative:

L1566306-35 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	42.1		1.00	1	12/15/2022 00:44	WG1974289
Fluoride	0.333		0.150	1	12/15/2022 00:44	WG1974289
Sulfate	225		25.0	5	12/16/2022 12:53	WG1974684

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	12/16/2022 09:05	WG1974941
Lithium	0.155		0.0150	1	12/16/2022 09:05	WG1974941

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0191		0.00200	1	12/20/2022 17:14	WG1975620
Calcium	39.7		1.00	1	12/20/2022 17:14	WG1975620
Magnesium	19.7		1.00	1	12/20/2022 17:14	WG1975620
Sodium	37.0		2.00	1	12/20/2022 17:14	WG1975620
Strontium	0.694		0.0100	1	12/20/2022 17:14	WG1975620

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	2120		25.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 09:09	WG1975415

Sample Narrative:

L1566306-36 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	35.0		1.00	1	12/15/2022 01:27	WG1974289
Fluoride	1.08		0.150	1	12/15/2022 01:27	WG1974289
Sulfate	1450		100	20	12/15/2022 01:42	WG1974289

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.582		0.200	1	12/16/2022 09:08	WG1974941
Lithium	0.863		0.0150	1	12/16/2022 09:08	WG1974941

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0246		0.00200	1	12/20/2022 17:24	WG1975620
Calcium	262		1.00	1	12/20/2022 17:24	WG1975620
Magnesium	101		1.00	1	12/20/2022 17:24	WG1975620
Sodium	100		2.00	1	12/20/2022 17:24	WG1975620
Strontium	5.64		0.0100	1	12/20/2022 17:24	WG1975620

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	456		10.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 09:14	WG1975415

Sample Narrative:

L1566306-37 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	6.63		1.00	1	12/16/2022 08:47	WG1974445
Fluoride	0.445		0.150	1	12/16/2022 08:47	WG1974445
Sulfate	208		25.0	5	12/16/2022 09:03	WG1974445

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	12/19/2022 20:14	WG1975471
Lithium	0.265		0.0150	1	12/19/2022 20:14	WG1975471

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0252		0.00200	1	12/20/2022 17:28	WG1975620
Calcium	33.0		1.00	1	12/20/2022 17:28	WG1975620
Magnesium	12.7		1.00	1	12/20/2022 17:28	WG1975620
Sodium	22.1		2.00	1	12/20/2022 17:28	WG1975620
Strontium	0.756		0.0100	1	12/20/2022 17:28	WG1975620

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	617		10.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/19/2022 09:19	WG1975415

Sample Narrative:

L1566306-38 WG1975415: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	38.4		1.00	1	12/16/2022 09:24	WG1974445
Fluoride	0.345		0.150	1	12/16/2022 09:24	WG1974445
Sulfate	311		25.0	5	12/16/2022 09:40	WG1974445

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.324		0.200	1	12/19/2022 20:17	WG1975471
Lithium	0.171		0.0150	1	12/19/2022 20:17	WG1975471

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0328		0.00200	1	12/20/2022 17:31	WG1975620
Calcium	52.3		1.00	1	12/20/2022 17:31	WG1975620
Magnesium	18.4		1.00	1	12/20/2022 17:31	WG1975620
Sodium	51.9		2.00	1	12/20/2022 17:31	WG1975620
Strontium	1.38		0.0100	1	12/20/2022 17:31	WG1975620

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

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	178		10.0	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	40.2		20.0	1	12/19/2022 10:29	WG1975416

Sample Narrative:

L1566306-39 WG1975416: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	3.94		1.00	1	12/15/2022 13:55	WG1974451
Fluoride	ND		0.150	1	12/15/2022 13:55	WG1974451
Sulfate	20.9		5.00	1	12/15/2022 13:55	WG1974451

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	ND		0.200	1	12/19/2022 19:35	WG1975471
Lithium	ND		0.0150	1	12/19/2022 19:35	WG1975471

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.130		0.00200	1	12/20/2022 17:34	WG1975620
Calcium	19.1		1.00	1	12/20/2022 17:34	WG1975620
Magnesium	3.46		1.00	1	12/20/2022 17:34	WG1975620
Sodium	15.9		2.00	1	12/20/2022 17:34	WG1975620
Strontium	0.151		0.0100	1	12/20/2022 17:34	WG1975620

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	843		13.3	1	12/13/2022 01:15	WG1973182

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20.0	1	12/15/2022 11:24	WG1974241

Sample Narrative:

L1566306-40 WG1974241: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	55.9		1.00	1	12/15/2022 18:14	WG1974451
Fluoride	0.798		0.150	1	12/15/2022 18:14	WG1974451
Sulfate	498		25.0	5	12/17/2022 00:34	WG1975825

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.424		0.200	1	12/19/2022 20:20	WG1975471
Lithium	0.0414		0.0150	1	12/19/2022 20:20	WG1975471

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	0.0213		0.00200	1	12/20/2022 17:37	WG1975620
Calcium	44.9		1.00	1	12/20/2022 17:37	WG1975620
Magnesium	37.2		1.00	1	12/20/2022 17:37	WG1975620
Sodium	101		2.00	1	12/20/2022 17:37	WG1975620
Strontium	1.11		0.0100	1	12/20/2022 17:37	WG1975620

Method Blank (MB)

(MB) R3872114-1 12/13/22 01:15

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

L1566306-36 Original Sample (OS) • Duplicate (DUP)

(OS) L1566306-36 12/13/22 01:15 • (DUP) R3872114-3 12/13/22 01:15

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	2120	2080	1	2.03		5

L1566451-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1566451-01 12/13/22 01:15 • (DUP) R3872114-4 12/13/22 01:15

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1160	1140	1	1.73		5

Laboratory Control Sample (LCS)

(LCS) R3872114-2 12/13/22 01:15

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8370	95.1	77.3-123	

Method Blank (MB)

(MB) R3872516-1 12/13/22 10:12

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

L1564565-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1564565-01 12/13/22 10:12 • (DUP) R3872516-3 12/13/22 10:12

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	83.0	89.0	1	6.98	J3	5

L1564850-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1564850-06 12/13/22 10:12 • (DUP) R3872516-4 12/13/22 10:12

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	126	132	1	4.65		5

Laboratory Control Sample (LCS)

(LCS) R3872516-2 12/13/22 10:12

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	7710	87.6	77.3-123	

Method Blank (MB)

(MB) R3872513-1 12/13/22 11:39

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

L1564254-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1564254-05 12/13/22 11:39 • (DUP) R3872513-3 12/13/22 11:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	103	113	1	9.26	J3	5

L1566306-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1566306-07 12/13/22 11:39 • (DUP) R3872513-4 12/13/22 11:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	375	400	1	6.45	J3	5

Laboratory Control Sample (LCS)

(LCS) R3872513-2 12/13/22 11:39

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	7730	87.8	77.3-123	

Method Blank (MB)

(MB) R3872935-5 12/14/22 12:54

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

L1564790-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1564790-11 12/14/22 12:54 • (DUP) R3872935-3 12/14/22 12:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	696	722	1	3.67		5

L1565129-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1565129-02 12/14/22 12:54 • (DUP) R3872935-4 12/14/22 12:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	982	1030	1	4.77		5

Laboratory Control Sample (LCS)

(LCS) R3872935-2 12/14/22 12:54

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	763	8.67	77.3-123	J4

Method Blank (MB)

(MB) R3872946-1 12/15/22 07:51

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

L1566280-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1566280-04 12/15/22 07:51 • (DUP) R3872946-3 12/15/22 07:51

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	992	1090	1	9.60	J3	5

L1566280-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1566280-05 12/15/22 07:51 • (DUP) R3872946-4 12/15/22 07:51

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	491	493	1	0.407		5

Laboratory Control Sample (LCS)

(LCS) R3872946-2 12/15/22 07:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	7710	87.6	77.3-123	

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

Method Blank (MB)

(MB) R3872229-2 12/15/22 10:25

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Alkalinity	U		8.45	20.0

Sample Narrative:

BLANK: Endpoint pH 4.5

L1566280-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1566280-05 12/15/22 10:48 • (DUP) R3872229-3 12/15/22 10:53

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	377	376	1	0.306		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1566281-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1566281-02 12/15/22 12:28 • (DUP) R3872229-4 12/15/22 12:32

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3872229-1 12/15/22 10:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100	101	101	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3873261-2 12/19/22 06:57

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Alkalinity	U		8.45	20.0

Sample Narrative:

BLANK: Endpoint pH 4.5

L1566306-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1566306-06 12/19/22 07:12 • (DUP) R3873261-3 12/19/22 07:17

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1566929-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1566929-01 12/19/22 09:07 • (DUP) R3873261-4 12/19/22 09:12

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	68.4	70.2	1	2.62		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3873261-1 12/19/22 06:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100	101	101	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3872467-2 12/15/22 13:55

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Alkalinity	U		8.45	20.0

Sample Narrative:

BLANK: Endpoint pH 4.5

L1566280-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1566280-01 12/15/22 14:14 • (DUP) R3872467-3 12/15/22 14:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	522	523	1	0.297		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1567160-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1567160-01 12/15/22 15:50 • (DUP) R3872467-4 12/15/22 15:55

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	236	231	1	1.92		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3872467-1 12/15/22 13:48

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100	103	103	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

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

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

Method Blank (MB)

(MB) R3873259-2 12/19/22 07:10

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Alkalinity	U		8.45	20.0

Sample Narrative:

BLANK: Endpoint pH 4.5

L1566475-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1566475-01 12/19/22 07:20 • (DUP) R3873259-4 12/19/22 07:25

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	6000	5700	5	5.13		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1566306-38 Original Sample (OS) • Duplicate (DUP)

(OS) L1566306-38 12/19/22 09:19 • (DUP) R3873259-5 12/19/22 09:24

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3873259-1 12/19/22 07:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100	98.5	98.5	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3873475-2 12/19/22 10:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Alkalinity	U		8.45	20.0

Sample Narrative:

BLANK: Endpoint pH 4.5

L1566741-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1566741-02 12/19/22 10:19 • (DUP) R3873475-3 12/19/22 10:24

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1567628-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1567628-01 12/19/22 12:23 • (DUP) R3873475-4 12/19/22 12:29

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	110	110	1	0.343		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3873475-1 12/19/22 10:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100	100	100	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3872391-1 12/15/22 04:58

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Sulfate	U		0.594	5.00

L1566251-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1566251-02 12/15/22 05:36 • (DUP) R3872391-3 12/15/22 05:48

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1.28	1.22	1	4.52		15
Fluoride	ND	ND	1	0.000		15
Sulfate	ND	ND	1	0.176		15

L1566306-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1566306-13 12/15/22 11:37 • (DUP) R3872391-6 12/15/22 11:50

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	8.99	9.00	1	0.0267		15
Fluoride	ND	ND	1	2.43		15
Sulfate	29.5	29.4	1	0.104		15

Laboratory Control Sample (LCS)

(LCS) R3872391-2 12/15/22 05:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	41.6	104	80.0-120	
Fluoride	8.00	8.69	109	80.0-120	
Sulfate	40.0	41.8	105	80.0-120	

L1566251-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1566251-02 12/15/22 05:36 • (MS) R3872391-4 12/15/22 06:01 • (MSD) R3872391-5 12/15/22 06:13

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	1.28	54.1	53.9	106	105	1	80.0-120			0.323	15
Fluoride	5.00	ND	5.62	5.58	112	112	1	80.0-120			0.671	15
Sulfate	50.0	ND	55.2	54.9	106	105	1	80.0-120			0.413	15

L1566306-13 Original Sample (OS) • Matrix Spike (MS)

(OS) L1566306-13 12/15/22 11:37 • (MS) R3872391-7 12/15/22 12:27

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	8.99	60.7	103	1	80.0-120	
Fluoride	5.00	ND	5.51	108	1	80.0-120	
Sulfate	50.0	29.5	80.0	101	1	80.0-120	

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

Method Blank (MB)

(MB) R3872146-1 12/14/22 14:14

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	0.389	J	0.379	1.00
Fluoride	U		0.0640	0.150
Sulfate	U		0.594	5.00

L1566306-18 Original Sample (OS) • Duplicate (DUP)

(OS) L1566306-18 12/14/22 16:25 • (DUP) R3872146-3 12/14/22 16:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	6.34	6.40	1	0.954		15
Fluoride	ND	ND	1	2.76		15
Sulfate	38.9	39.2	1	0.636		15

L1566306-35 Original Sample (OS) • Duplicate (DUP)

(OS) L1566306-35 12/15/22 00:44 • (DUP) R3872146-8 12/15/22 00:59

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	42.1	42.1	1	0.176		15
Fluoride	0.333	0.333	1	0.180		15

Laboratory Control Sample (LCS)

(LCS) R3872146-2 12/14/22 14:28

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	40.6	101	80.0-120	
Fluoride	8.00	8.41	105	80.0-120	
Sulfate	40.0	39.8	99.5	80.0-120	

L1566306-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1566306-18 12/14/22 16:25 • (MS) R3872146-4 12/14/22 16:54 • (MSD) R3872146-5 12/14/22 17:08

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	6.34	57.7	57.8	103	103	1	80.0-120			0.152	15
Fluoride	5.00	ND	5.29	5.30	104	104	1	80.0-120			0.198	15

L1566306-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1566306-18 12/14/22 16:25 • (MS) R3872146-4 12/14/22 16:54 • (MSD) R3872146-5 12/14/22 17:08

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	50.0	38.9	89.8	89.8	102	102	1	80.0-120			0.0257	15

L1566306-35 Original Sample (OS) • Matrix Spike (MS)

(OS) L1566306-35 12/15/22 00:44 • (MS) R3872146-9 12/15/22 01:13

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	42.1	91.8	99.4	1	80.0-120	
Fluoride	5.00	0.333	5.43	102	1	80.0-120	

Method Blank (MB)

(MB) R3872632-1 12/15/22 23:00

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Sulfate	U		0.594	5.00

L1566234-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1566234-01 12/16/22 00:51 • (DUP) R3872632-3 12/16/22 01:13

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	18.7	17.3	1	7.68		15
Fluoride	0.160	0.189	1	17.0	P1	15
Sulfate	41.1	41.6	1	1.09		15

L1566234-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1566234-05 12/16/22 03:44 • (DUP) R3872632-6 12/16/22 04:00

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	51.2	51.5	1	0.496		15
Fluoride	ND	ND	1	200	P1	15
Sulfate	39.2	39.5	1	0.859		15

Laboratory Control Sample (LCS)

(LCS) R3872632-2 12/15/22 23:16

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	40.2	101	80.0-120	
Fluoride	8.00	8.35	104	80.0-120	
Sulfate	40.0	40.7	102	80.0-120	

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

L1566234-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1566234-01 12/16/22 00:51 • (MS) R3872632-4 12/16/22 01:29 • (MSD) R3872632-5 12/16/22 01:51

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	18.7	67.0	66.7	96.6	96.0	1	80.0-120			0.448	15
Fluoride	5.00	0.160	5.45	5.42	106	105	1	80.0-120			0.548	15
Sulfate	50.0	41.1	88.8	88.7	95.4	95.1	1	80.0-120			0.154	15

L1566234-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1566234-05 12/16/22 03:44 • (MS) R3872632-7 12/16/22 04:22

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	51.2	99.7	96.9	1	80.0-120	
Fluoride	5.00	ND	5.37	107	1	80.0-120	
Sulfate	50.0	39.2	87.9	97.5	1	80.0-120	

Method Blank (MB)

(MB) R3872733-1 12/15/22 11:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Sulfate	U		0.594	5.00

L1566306-40 Original Sample (OS) • Duplicate (DUP)

(OS) L1566306-40 12/15/22 18:14 • (DUP) R3872733-6 12/15/22 18:57

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	55.9	56.0	1	0.179		15
Fluoride	0.798	0.802	1	0.513		15
Sulfate	502	502	1	0.0512	E	15

L1566343-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1566343-02 12/15/22 14:09 • (DUP) R3872733-3 12/15/22 14:24

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	363	361	5	0.505		15
Fluoride	ND	ND	5	2.28		15
Sulfate	506	505	5	0.295		15

Laboratory Control Sample (LCS)

(LCS) R3872733-2 12/15/22 11:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	40.5	101	80.0-120	
Fluoride	8.00	8.23	103	80.0-120	
Sulfate	40.0	39.1	97.7	80.0-120	

L1566306-40 Original Sample (OS) • Matrix Spike (MS)

(OS) L1566306-40 12/15/22 18:14 • (MS) R3872733-7 12/15/22 19:12

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	55.9	105	98.5	1	80.0-120	
Fluoride	5.00	0.798	5.96	103	1	80.0-120	
Sulfate	50.0	502	531	58.7	1	80.0-120	E V

L1566343-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1566343-02 12/15/22 14:09 • (MS) R3872733-4 12/15/22 14:38 • (MSD) R3872733-5 12/15/22 14:53

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	363	385	387	44.8	49.7	5	80.0-120	V	V	0.631	15
Fluoride	5.00	ND	5.20	5.06	94.4	91.7	5	80.0-120			2.65	15
Sulfate	50.0	506	518	521	23.7	28.8	5	80.0-120	V	V	0.489	15

Method Blank (MB)

(MB) R3872913-1 12/16/22 07:09

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sulfate	U		0.594	5.00

L1566270-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1566270-08 12/16/22 10:58 • (DUP) R3872913-3 12/16/22 11:11

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	68.5	67.3	1	1.76		15

Laboratory Control Sample (LCS)

(LCS) R3872913-2 12/16/22 07:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40.0	40.7	102	80.0-120	

L1566270-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1566270-08 12/16/22 10:58 • (MS) R3872913-4 12/16/22 11:24 • (MSD) R3872913-5 12/16/22 11:36

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	50.0	68.5	116	115	94.4	93.9	1	80.0-120			0.239	15

Method Blank (MB)

(MB) R3873032-1 12/16/22 23:58

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sulfate	U		0.594	5.00

L1567704-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1567704-01 12/17/22 02:07 • (DUP) R3873032-3 12/17/22 02:25

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	7.05	6.86	1	2.82		15

Laboratory Control Sample (LCS)

(LCS) R3873032-2 12/17/22 00:16

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40.0	38.8	96.9	80.0-120	

L1567704-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1567704-01 12/17/22 02:07 • (MS) R3873032-4 12/17/22 02:43 • (MSD) R3873032-5 12/17/22 03:37

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	50.0	7.05	57.8	58.0	102	102	1	80.0-120			0.330	15

Method Blank (MB)

(MB) R3873672-1 12/20/22 00:42

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron	U		0.0200	0.200
Lithium	U		0.00485	0.0150

Laboratory Control Sample (LCS)

(LCS) R3873672-2 12/20/22 00:45

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1.00	0.972	97.2	80.0-120	
Lithium	1.00	1.03	103	80.0-120	

L1565809-24 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1565809-24 12/20/22 13:37 • (MS) R3873908-4 12/20/22 14:54 • (MSD) R3873908-8 12/20/22 14:56

Analyte	Spike Amount mg/l	Original Result	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1.00		1.01	1.01	101	101	1	75.0-125			0.00338	20

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

Method Blank (MB)

(MB) R3872437-1 12/15/22 16:25

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron	U		0.0200	0.200
Lithium	U		0.00485	0.0150

Laboratory Control Sample (LCS)

(LCS) R3872437-2 12/15/22 16:27

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1.00	0.976	97.6	80.0-120	
Lithium	1.00	0.949	94.9	80.0-120	

L1563677-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1563677-02 12/15/22 16:30 • (MS) R3872437-4 12/15/22 16:36 • (MSD) R3872437-5 12/15/22 16:38

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1.00	0.302	1.29	1.28	98.6	97.7	1	75.0-125			0.685	20
Lithium	1.00	0.0373	1.02	1.02	98.1	98.6	1	75.0-125			0.462	20

Method Blank (MB)

(MB) R3872480-1 12/16/22 00:30

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron	U		0.0200	0.200
Lithium	U		0.00485	0.0150

Laboratory Control Sample (LCS)

(LCS) R3872480-2 12/16/22 00:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1.00	0.945	94.5	80.0-120	
Lithium	1.00	0.959	95.9	80.0-120	

L1565593-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1565593-11 12/16/22 00:36 • (MS) R3872480-4 12/16/22 00:41 • (MSD) R3872480-5 12/16/22 00:44

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1.00	1.82	2.73	2.71	91.0	88.9	1	75.0-125			0.788	20
Lithium	1.00	0.0618	1.03	1.01	97.2	94.9	1	75.0-125			2.24	20

Method Blank (MB)

(MB) R3872684-1 12/16/22 08:26

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron	U		0.0200	0.200
Lithium	U		0.00485	0.0150

Laboratory Control Sample (LCS)

(LCS) R3872684-2 12/16/22 08:28

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1.00	0.922	92.2	80.0-120	
Lithium	1.00	1.00	100	80.0-120	

L1566306-28 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1566306-28 12/16/22 08:31 • (MS) R3872684-4 12/16/22 08:37 • (MSD) R3872684-5 12/16/22 08:39

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1.00	ND	1.09	1.10	91.8	92.9	1	75.0-125			0.999	20
Lithium	1.00	0.0463	1.02	1.03	97.0	98.2	1	75.0-125			1.13	20

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

Method Blank (MB)

(MB) R3873612-1 12/19/22 19:29

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron	U		0.0200	0.200
Lithium	U		0.00485	0.0150

Laboratory Control Sample (LCS)

(LCS) R3873612-2 12/19/22 19:32

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1.00	0.974	97.4	80.0-120	
Lithium	1.00	1.01	101	80.0-120	

L1566306-39 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1566306-39 12/19/22 19:35 • (MS) R3873612-4 12/19/22 19:40 • (MSD) R3873612-5 12/19/22 19:43

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1.00	ND	1.04	1.03	98.8	97.5	1	75.0-125			1.25	20
Lithium	1.00	ND	1.02	1.01	101	99.7	1	75.0-125			1.07	20

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

Method Blank (MB)

(MB) R3874341-1 12/21/22 08:52

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron	U		0.0200	0.200
Lithium	U		0.00485	0.0150

Laboratory Control Sample (LCS)

(LCS) R3874341-2 12/21/22 08:54

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1.00	0.984	98.4	80.0-120	
Lithium	1.00	0.996	99.6	80.0-120	

L1565747-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1565747-01 12/21/22 08:57 • (MS) R3874341-4 12/21/22 09:03 • (MSD) R3874341-5 12/21/22 09:06

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1.00	85.8	98.4	95.8	1260	998	1	75.0-125	E V	E V	2.71	20
Lithium	1.00	2.97	4.43	4.31	146	133	1	75.0-125	J5	J5	2.77	20

Cp Tc Ss Cn Sr Qc Gl Al Sc

Method Blank (MB)

(MB) R3873134-1 12/17/22 14:33

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Barium	0.00127	J	0.000381	0.00200
Calcium	U		0.0936	1.00
Magnesium	U		0.0735	1.00
Sodium	U		0.376	2.00
Strontium	U		0.000590	0.0100

Laboratory Control Sample (LCS)

(LCS) R3873134-2 12/17/22 14:36

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	0.0500	0.0515	103	80.0-120	
Calcium	5.00	5.27	105	80.0-120	
Magnesium	5.00	5.40	108	80.0-120	
Sodium	5.00	5.17	103	80.0-120	
Strontium	0.0500	0.0517	103	80.0-120	

L1564745-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1564745-01 12/17/22 14:40 • (MS) R3873134-4 12/17/22 14:46 • (MSD) R3873134-5 12/17/22 14:50

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	0.0500	0.122	0.174	0.174	104	104	1	75.0-125			0.0903	20
Calcium	5.00	199	202	199	71.4	6.90	1	75.0-125	V	V	1.61	20
Magnesium	5.00	18.6	23.7	24.3	102	115	1	75.0-125			2.60	20
Sodium	5.00	72.2	74.7	74.7	49.1	49.0	1	75.0-125	V	V	0.00540	20
Strontium	0.0500	0.406	0.449	0.451	85.2	89.6	1	75.0-125			0.487	20

Method Blank (MB)

(MB) R3874091-1 12/20/22 16:05

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Barium	0.000529	J	0.000381	0.00200
Calcium	0.106	J	0.0936	1.00
Magnesium	U		0.0735	1.00
Sodium	0.489	J	0.376	2.00
Strontium	U		0.000590	0.0100

Laboratory Control Sample (LCS)

(LCS) R3874091-2 12/20/22 16:08

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	0.0500	0.0476	95.1	80.0-120	
Calcium	5.00	4.92	98.3	80.0-120	
Magnesium	5.00	5.13	103	80.0-120	
Sodium	5.00	5.21	104	80.0-120	
Strontium	0.0500	0.0481	96.3	80.0-120	

L1566306-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1566306-21 12/20/22 16:11 • (MS) R3874091-4 12/20/22 16:18 • (MSD) R3874091-5 12/20/22 16:21

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	0.0500	0.127	0.179	0.175	105	96.4	1	75.0-125			2.37	20
Calcium	5.00	52.1	57.4	57.1	105	99.3	1	75.0-125			0.500	20
Magnesium	5.00	11.4	16.6	16.6	104	104	1	75.0-125			0.00458	20
Sodium	5.00	43.7	49.4	49.2	113	109	1	75.0-125			0.403	20
Strontium	0.0500	1.27	1.30	1.29	56.1	28.8	1	75.0-125	V	V	1.06	20

Method Blank (MB)

(MB) R3874087-1 12/20/22 14:50

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Barium	0.000405	J	0.000343	0.00180
Calcium	U		0.0842	0.900
Magnesium	U		0.0662	0.900
Sodium	U		0.338	1.80
Strontium	U		0.000531	0.00900

Laboratory Control Sample (LCS)

(LCS) R3874087-2 12/20/22 14:53

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	0.0500	0.0424	84.7	80.0-120	
Calcium	5.00	4.40	88.0	80.0-120	
Magnesium	5.00	4.63	92.6	80.0-120	
Sodium	5.00	4.58	91.6	80.0-120	
Strontium	0.0500	0.0429	85.9	80.0-120	

L1565809-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1565809-03 12/20/22 14:56 • (MS) R3874087-4 12/20/22 15:03 • (MSD) R3874087-5 12/20/22 15:06

Analyte	Spike Amount mg/l	Original Result	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	0.0450		0.0541	0.0532	99.3	97.3	.9	75.0-125			1.69	20
Calcium	4.50		14.6	14.4	98.3	95.1	.9	75.0-125			0.981	20
Magnesium	4.50		5.47	5.38	105	103	.9	75.0-125			1.67	20
Sodium	4.50		5.69	5.62	106	104	.9	75.0-125			1.20	20
Strontium	0.0450		0.0617	0.0615	97.9	97.4	.9	75.0-125			0.363	20

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

Method Blank (MB)

(MB) R3874637-1 12/21/22 22:35

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Barium	U		0.000381	0.00200
Calcium	U		0.0936	1.00
Magnesium	U		0.0735	1.00
Sodium	U		0.376	2.00
Strontium	U		0.000590	0.0100

Laboratory Control Sample (LCS)

(LCS) R3874637-2 12/21/22 22:39

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	0.0500	0.0455	90.9	80.0-120	
Calcium	5.00	5.06	101	80.0-120	
Magnesium	5.00	5.10	102	80.0-120	
Sodium	5.00	4.91	98.2	80.0-120	
Strontium	0.0500	0.0486	97.1	80.0-120	

L1567068-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1567068-02 12/21/22 22:42 • (MS) R3874637-4 12/21/22 22:49 • (MSD) R3874637-5 12/21/22 22:52

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	0.0500	0.130	0.178	0.179	95.5	98.0	1	75.0-125			0.696	20
Calcium	5.00	217	216	218	0.000	17.1	1	75.0-125	V	V	0.997	20
Magnesium	5.00	86.7	88.5	90.3	35.6	72.5	1	75.0-125	V	V	2.06	20
Sodium	5.00	216	211	217	0.000	14.4	1	75.0-125	V	V	2.54	20
Strontium	0.0500	3.91	3.87	3.88	0.000	0.000	1	75.0-125	V	V	0.186	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.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.

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

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA

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

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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

GBMC & Associates - Bryant, AR 219 Brown Lane Bryant, AR 72022	Billing Information: Accounts Payable 219 Brown Ln. Bryant, AR 72022
Report to: Jonathan Brown	Email To: jbrown@gbmcassoc.com;
Project Description: Entergy - White Bluff	City/State Collected: Redfield, AR — Please Circle: PT MT (CT) ET
Phone: 501-847-7077	Client Project # 1145-21-080 — Lab Project # GBMCBAR-ENTERGYWB
Collected by (print): Danielle Braund	Site/Facility ID # CADL-CCR — P.O. #
Collected by (signature): Danielle Braund 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

Pres Chk

Chain of Custody Page 1 of 5

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 # L1566306

F066

Acctnum: GBMCBAR
Template: T198831
Prelogin: P963501
PM: 134-Mark Beasley
PB:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	ALK, Cl, F, SO4 250mlHDPE-NoPres	Metals* 250mlHDPE - HNO3 (2 ✓)	Remarks	Sample # (lab only)
MW-101S	Grab	GW	38.8	12/7/22	1537	4 (MW) 2	X	X	5.51	-01
MW-102S	Grab	GW	34.6	12/6/22	1415	2	X	X	5.94	-02
MW-103S	Grab	GW	19.3	12/6/22	1345	2	X	X	4.74	-03
MW-104S	Grab	GW	32.2	12/8/22	1135	2	X	X	4.90	-04
MW-105S	Grab	GW	30.9	12/6/22	0907	2	X	X	5.57	-05
MW-106S	Grab	GW	12.0	12/6/22	0943	2	X	X	3.83	-06
MW-110S	Grab	GW	14.3	12/6/22	1309	2	X	X	4.11	-07
MW-111S	Grab	GW	14.3	12/6/22	1013	2	X	X	3.71	-08
MW-101D	Grab	GW	96.8	12/6/22	1620	2	X	X	7.15	-09
MW-102D	Grab	GW	92.4	12/7/22	1435	2	X	X	6.80	-10

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

Remarks:
Metals = Ba, B, Ca, Li, Mg, Na, Sr   Final pH in remarks   internal COC2
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	
Danielle Braund	12/9/22	0900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 160	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Matt [signature]	Date: 12-10-22 Time: 1000	Hold: — Condition: NCF / OK

GBMC & Associates - Bryant, AR **219 Brown Lane** **Bryant, AR 72022**	Billing Information: **Accounts Payable** **219 Brown Ln.** **Bryant, AR 72022**	Pres Chk	Chain of Custody Page 2 of 5 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: **Jonathan Brown**	Email To: **jbrown@gbmcassoc.com;**		
Project Description: Entergy - White Bluff	City/State Collected: **Redfield, AR**	Please Circle: PT MT (CT) ET	SDG # 15663106
Phone: **501-847-7077**	Client Project # **1145-21-080**	Lab Project # **GBMCBAR-ENTERGYWB**	Table #
Collected by (print): **Danielle Braund**	Site/Facility ID # **CADL-CCR**	P.O. #	Acctnum: **GBMCBAR**
Collected by (signature): Danielle Braund 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	Template: **T198831** Prelogin: **P963501** PM: **134-Mark Beasley** PB: Shipped Via:

Analysis / Container / Preservative: **ALK, Cl, F, SO4 250mlHDPE-NoPres** (2 ✓); **Metals* 250mlHDPE - HNO3**

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	ALK, Cl, F, SO4 250mlHDPE-NoPres	Metals* 250mlHDPE - HNO3	Remarks	Sample # (lab only)
MW-103D	Grab	GW	40.6	12/8/22	1337	~~2~~ 4	X	X	7.43	-11
MW-104D	Grab	GW	86.8	12/6/22	1020	2	X	X	7.62	-12
MW-105D	Grab	GW	80.1	12/8/22	0922	2	X	X	7.32	-13
MW-106D	Grab	GW	41.3	12/8/22	1235	2	X	X	7.21	-14
MW-107D	Grab	GW	24.0	12/6/22	1049	2	X	X	7.13	-15
MW-108D	Grab	GW	46.0	12/5/22	1330	2	X	X	7.63	-16
MW-109D	Grab	GW	79.4	12/5/22	1145	2	X	X	7.71	-17
MW-110D	Grab	GW	33.8	12/5/22	1430	2	X	X	7.71	-18
MW-112D	Grab	GW	87.4	12/7/22	1640	2	X	X	7.15	-19
MW-113D	Grab	GW	9.7	12/6/22	1427	2	X	X	6.76	-20

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

Remarks:
Metals = Ba, B, Ca, Li, Mg, Na, Sr **Final pH in remarks** **internal COC2**

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) Danielle Braund	Date: 12/9/22	Time: 0900	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeOH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 160	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Matt [signature]	Date: 12-10-22 Time: 1000	Hold: Condition: NCF / OK

GBMC & Associates - Bryant, AR

219 Brown Lane
Bryant, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 3 of 5

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: Jonathan Brown

Email To: jbrown@gbmcassoc.com;

Project Description: Entergy - White Bluff

City/State Collected: Redfield, AR

Please Circle: PT MT (CT) ET

Phone: 501-847-7077

Client Project # 1145-21-080

Lab Project # GBMCBAR-ENTERGYWB

SDG # 1566306

Table #

Collected by (print): Danielle Braund

Site/Facility ID # CADL-CCR

P.O. #

Acctnum: GBMCBAR
Template: T198831
Prelogin: P963501
PM: 134-Mark Beasley
PB:
Shipped Via:

Collected by (signature): Danielle Braund

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

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	ALK, Cl, F, SO4 250mlHDPE-NoPres	Metals* 250mlHDPE-HNO3	Remarks	Sample # (lab only)
								2 Y		
MW-114D	Grab	GW	60.5	12/5/22	1640	4 2	X	X	7.81	-21
MW-115D	Grab	GW	75.0	12/5/22	1240	2	X	X	7.78	-22
MW-118D	Grab	GW	41.1	12/5/22	1600	2	X	X	7.23	-23
FIELD BLANK 1	Grab	GW	-	12/6/22	1530	2	X	X	DI H2O	-24
FIELD BLANK 2	Grab	GW	-	12/7/22	1420	2	X	X	DI H2O	-25
DUPLICATE 1 107D	Grab	GW	24.0	12/6/22	1049	2	X	X	7.13	-26
DUPLICATE 2 106S	Grab	GW	14.3	12/6/22	1309	2	X	X	411	-27
DUPLICATE 3 101D	Grab	GW	96.8	12/6/22	1620	2	X	X	7.15	-28
	Grab	GW								
	Grab	GW								

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

Remarks:
Metals=Ba,B,Ca,Li,Mg,Na,Sr **Final pH in remarks** **internal COC2**

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
Danielle Braund	12/9/22	0900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 160
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Matt [signature]	Date: 12-10-22 Time: 1000

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

GBMC & Associates - Bryant, AR

219 Brown Lane
Bryant, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk: 2 ✓

Analysis / Container / Preservative

Chain of Custody Page 5 of 5

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: Jonathan Brown

Email To: jbrown@gbmcassoc.com;

Project Description: Entergy - White Bluff

City/State Collected: Redfield, AR

Please Circle: PT MT (CT) ET

Phone: 501-847-7077

Client Project #: 1145-21-080

Lab Project #: GBMCBAR-ENTERGYWB

SDG # 1566306

Table #

Collected by (print): Danielle Braund

Site/Facility ID #: CADL-CCR

P.O. #

Acctnum: GBMCBAR

Template: T198831

Prelogin: P963501

PM: 134-Mark Beasley

PB:

Collected by (signature): Danielle Braund

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

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	ALK, Cl, F, SO4 250mlHDPE-NoPres	Metals* 250mlHDPE-HNO3								Remarks	Sample # (lab only)
RP FIELD BLANK	Grab	GW	-	12/6/22	0900	2	X	X								DI H2O	-29
RP DUPLICATE RP-8	Grab	GW	11.7	12/5/22	1424	2	X	X								3.61	-30
	Grab	GW				2	X	X									
	Grab	GW				2	X	X									
	Grab	GW				2	X	X									
	Grab	GW				2	X	X									
	Grab	GW				2	X	X									
	Grab	GW				2	X	X									
	Grab	GW				2	X	X									
	Grab	GW				2	X	X									

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

Remarks:
Metals = Ba,B,Ca,Li,Mg,Na,Sr **Final pH in remarks** **internal COC2**

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
Danielle Braund	12/9/22	0900		

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C	Bottles Received:	If preservation required by Login: Date/Time
					160	

Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:	Hold:	Condition: NCF / OK
			Matt [signature]	12-10-22	1000		

GBMC & Associates - Bryant, AR **219 Brown Lane** **Bryant, AR 72022**	Billing Information: **Accounts Payable** **219 Brown Ln.** **Bryant, AR 72022**	Pres Chk
Report to: **Jonathan Brown**	Email To: **jbrown@gbmcassoc.com;**	
Project Description: Entergy - White Bluff	City/State Collected: **Redfield, AR**	Please Circle: PT MT (CT) ET
Phone: **501-847-7077**	Client Project # **1145-21-080**	Lab Project # **GBMCBAR-ENTERGYWB**
Collected by (print): **Danielle Braund**	Site/Facility ID # **CADL-CCR**	P.O. #
Collected by (signature): [signature] Immediately Packed on Ice N ___ Y X	*Rush?* (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day	Quote # Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 4 of 5

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 # 1566306

Table #

Acctnum: **GBMCBAR**
Template: **T198831**
Prelogin: **P963501**
PM: **134-Mark Beasley**
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	ALK, Cl, F, SO4 250mlHDPE-NoPres	Metals* 250mlHDPE-HNO3 (2 ✓)								Remarks	Sample # (lab only)
RP-1	Grab	GW	9.5	12/5/22	1555	4 ~~2~~	X	X								3.61	-31
RP-2	Grab	GW	15.8	12/5/22	1529	2	X	X								4.46	-32
RP-3	Grab	GW	8.6	12/5/22	1457	2	X	X								3.61	-33
RP-4	Grab	GW	9.2	12/6/22	0837	2	X	X								5.53	-34
RP-5	Grab	GW	10.2	12/5/22	1302	2	X	X								3.35	-35
RP-6	Grab	GW	10.5	12/5/22	1336	2	X	X								3.91	-36
RP-7	Grab	GW	11.7	12/5/22	1359	2	X	X								3.46	-37
RP-8	Grab	GW	11.7	12/5/22	1424	2	X	X								3.61	-38
RP-9	Grab	GW	9.6	12/5/22	1633	2	X	X								6.32	-39
RP-10	Grab	GW	8.7	12/5/22	1702	2	X	X								3.20	-40

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

Remarks:
Metals=Ba,B,Ca,Li,Mg,Na,Sr **Final pH in remarks** **internal COC2**

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]	12/9/22	0900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 160	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 12-10-22 Time: 1000	Hold: Condition: NCF / OK

1566306

Tracking Numbers		Temperature
6126 6537 7779	[redacted]	GBA2 0.7
7746		0.8
7757		0.4
7768		5.6

APPENDIX C
ALTERNATE SOURCE DEMONSTRATIONS

Alternate Source Demonstration

2nd Half 2021 Sampling Event

Entergy White Bluff Plant
Coal Ash Disposal Landfill
Redfield, Jefferson County, Arkansas

July 2022

Prepared For
Entergy Arkansas, LLC
White Bluff Plant
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Executive Summary

Entergy Arkansas, LLC (Entergy) performed the most recent semiannual detection monitoring sampling (2nd Half 2021) in December 2021 for Cells 1 through 4 of the coal ash disposal landfill (CADL) pursuant to the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, 40 CFR Part 257 (CCR Rule). Cells 1 through 4 of the CADL constitute the coal combustion residuals (CCR) Unit per the CCR Rule. Per 40 CFR 257.94, the samples were analyzed for the Appendix III detection monitoring parameters. Upon receipt of the laboratory analytical results, statistical analysis was performed during March 2022.

In accordance with the statistical analyses, the following 19 statistically significant increases (SSI) above background concentrations were identified in three monitoring wells in Stratum I and four monitoring wells in Stratum III, based on either increasing trends at 98% confidence levels using Sen's Slope test and/or intrawell prediction limits statistical analyses:

- Calcium, fluoride, sulfate and total dissolved solids (TDS) (MW-106S);
- Boron and calcium (MW-110S);
- Boron, calcium, fluoride, sulfate and TDS (MW-111S);
- Calcium (MW-101D);
- Boron, calcium and TDS (MW-112D);
- Calcium (MW-114D); and
- Calcium, fluoride, sulfate (MW-118D).

The information provided in this report serves as Entergy's alternate source demonstration (ASD) prepared in accordance with 40 CFR 257.94(e)(2) and successfully demonstrates that the SSIs are not due to a release from the CCR Unit to groundwater, but are due to the following:

- Natural groundwater geochemistry conditions such as pH, electrical conductivity (EC), oxidation-reduction potential (ORP) and the naturally occurrence of sulfide minerals;
- Natural variation in groundwater quality;
- Releases from historic fill or portions of the CADL closed before the effective date of the CCR Rule (October 19, 2015); and/or
- Surface water that has come into contact with on-site CCR and has migrated into the subsurface.

Therefore, based on the information provided in this ASD report, Entergy will continue to conduct semiannual detection monitoring for Appendix III constituents in accordance with 40 CFR 257.94 at the certified groundwater monitoring well system (Certified Monitoring Well Network) for the CCR Unit and will continue to implement improvements to stormwater management practices at the CADL.

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Section 1
Introduction

1.1 Background

Entergy Arkansas, LLC (Entergy) operates the Entergy White Bluff Plant (Plant), a coal-fired power plant, to generate electricity. The Plant is located at 1100 White Bluff Road in Redfield, Jefferson County, Arkansas as shown on Figure 1. Coal combustion residuals (CCR) are produced as part of the electrical generation operations. The Plant has been generating and disposing of CCR in a portion of the on-site coal ash disposal landfill (CADL) since it began operations in 1981. The CADL is a Class 3N non-commercial industrial landfill and operates under Arkansas Division of Environmental Quality (ADEQ) Solid Waste Permit No. 0199-S3N-R3.

The ADEQ-permitted CADL consists of approximately 153-acres at the Plant and encompasses the following three areas:

- Approximately 50-acre portion of the CADL historically used for CCR disposal from 1981 until prior to the effective date of the CCR Rule (October 19, 2015). CCR was placed into ravines. This area was closed in accordance with the Plant's original solid waste permit (TRC, 2018a);
- Cells 1 through 4, which are the current cells used for CCR disposal and were constructed on top of, and adjacent to, the above-noted closed CCR disposal areas prior to the effective date of the CCR Rule. Cells 1 through 4 encompass approximately 30 acres and were constructed as follows:
  - Cells 1, 2, and 3 were constructed with an 18-inch thick compacted clay bottom liner;
  - Cell 4 was constructed with a two-foot thick compacted clay bottom liner and a leachate collection system; and
- Approximately 100-acre portion of the CADL that is currently undeveloped and may be used for CCR and/or non-CCR disposal.

In addition to the current 153-acre permitted landfill, there is an approximately 25 acre area to the immediate west of Cells 1 through 4 where during the initial period of operation of the Plant, ash was placed pursuant to the permits issued at that time. This historic fill area is covered with soil and vegetated.

Cells 1 through 4 accept CCR for disposal in accordance with the federal *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule* (CCR

Rule), effective October 19, 2015, and subsequent Final Rules promulgated by the United States Environmental Protection Agency (USEPA). Cells 1 through 4 comprise the CCR management unit (CCR Unit) per the CCR Rule and are the focus of this ASD. The approximate limits of Cells 1 through 4, the closed disposal areas, and the undeveloped, future disposal areas within the ADEQ-permitted footprint of the CADL are shown in Figure 2.

Historical CCR management by Entergy has consisted of the following activities:

- Beneficial use in local construction projects;
- Beneficial use as roadbed material at the CADL; and
- Placement into the CADL.

1.1.1 Groundwater Monitoring and Statistical Analysis

In accordance with 40 CFR 257.90 through 257.94, Entergy installed a groundwater monitoring system for Cells 1 through 4 and has collected samples from the Certified Monitoring Well Network for laboratory analysis for CCR constituents and performed statistical analysis of the collected samples. Entergy installed a Certified Monitoring Well Network for the CCR Unit in accordance with 40 CFR 257.90 and 257.91. The Certified Monitoring Well Network consists of 23 wells installed into two stratigraphic units as follows:

- Eight wells are installed into an upper silty and clayey sand unit (Stratum I), which are designated as "S" monitoring wells; and
- Fifteen wells are installed into a lower silty and clayey sand and clay unit (Stratum III), which are designated as "D" monitoring wells.

Pursuant to 40 CFR 257.91(f), Entergy obtained certification by a qualified Arkansas-registered professional engineer (P.E.) stating that the Certified Monitoring Well Network has been designed and constructed to meet the requirements of 40 CFR 257.91 (see Groundwater Monitoring System Certification, TRC, February 26, 2018) of the CCR Rule (TRC 2018b).

As discussed above, Stratum I and Stratum III are currently being monitored pursuant to the CCR Rule. A groundwater sampling and analysis program including selection of statistical procedures to evaluate groundwater data was prepared per the CCR Rule (see Groundwater Sampling and Analysis Plan (FTN, 2017b)). Eight quarterly background CCR detection monitoring events were performed from October 2015 through June 2017 in accordance with 40 CFR 257.93(d) and 257.94(b). The eight quarterly detection monitoring background samples were analyzed for Appendix III to Part 257 – Constituents for Detection Monitoring and for Appendix IV to Part 257 – Constituents for Assessment Monitoring.

Following completion of quarterly background detection monitoring in June 2017, Entergy implemented semiannual detection monitoring per 40 CFR 257.94(b) for the CCR Unit. The first semiannual detection monitoring event was performed in August 2017 (2nd Half 2017). Subsequent detection monitoring events, with associated verification sampling when appropriate, have been performed on a semiannual basis since August 2017. Entergy performed the most recent semiannual detection monitoring event (2nd Half 2021) in December 2021. Per the CCR Rule, the semiannual detection monitoring event samples were analyzed for Appendix III constituents.

After completion of each semiannual detection monitoring event, the Appendix III laboratory analytical data were statistically evaluated to identify potential SSIs for Appendix III constituents above background levels. In accordance with 40 CFR 257.93(f)(6), Entergy obtained certification by a qualified Arkansas-registered P.E. stating that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR Unit (see Statistical Methods Certification, TRC, October 16, 2017).

Pursuant to 40 CFR 257.93(h), statistical analysis and re-analysis of the laboratory analytical data were performed to identify potential SSIs for the 2nd Half 2021 semiannual detection monitoring event. A total of 19 SSIs were identified for five Appendix III constituents: boron, calcium, fluoride, sulfate, and total dissolved solids (TDS). SSIs were identified in three Stratum I and four Stratum III monitoring wells.

1.2 Purpose

Pursuant to 40 CFR 257.94(e)(2), Entergy may demonstrate that a source other than the CCR Unit caused the SSIs identified or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The purpose of this report is to provide written documentation of the successful ASD for the SSIs identified for the 2nd Half 2021 semiannual detection monitoring event, pursuant to 40 CFR 257.94(e)(2) of the CCR Rule.

Section 2
Hydrogeology and Geochemistry

2.1 Site Hydrogeology

Historical subsurface investigations have identified the following three stratigraphic horizons of the Jackson Group (Kresse, et. al., 2014) and their associated hydrogeology for the CCR Unit and the CADL:

- **Stratum 1. Interbedded Clay, Silt, and Sand.**
  Stratum 1 ranges from approximately 10 to 54-feet thick and consists of interbedded silty sand (SM), clayey sand (SC), silts (ML and MH), and clay (CL and CH). Occasional deposits of carbonaceous material are present throughout Stratum 1. Based on the results of in-situ slug tests, hydraulic conductivity values range from 4.0×10^{-5} to 4.0×10^{-4} cm/sec;

- **Stratum 2. Clay.**
  Stratum 2 ranges from approximately 14 to 49-feet thick and consists of a very stiff clay (CH) with occasional silt and/or very fine-grained sand laminations. Occasional deposits of carbonaceous mater are present throughout Stratum 2. Based on the results of in-situ slug tests, hydraulic conductivity values range from 4.7×10^{-6} to 1.4×10^{-8} cm/sec;

- **Stratum 3. Clayey and Silty Sand.**
  Stratum 3 ranges from approximately 5 to 19-feet thick and consists primarily of clayey sand (SC) and/or silty sand (SM). A poorly graded, fine-grained sand (SM) was identified in one piezometer. The upper limits of Stratum 3 were encountered at elevations of 263 to 289-feet NGVD (depths ranging from 19 to 97-feet bgs). Based on results of in-situ slug tests, hydraulic conductivity was determined to be spatially variable and ranged from 4.2×10^{-7} to 2.5×10^{-4} cm/sec; and

- **Underlying Clay.**
  A clay unit underlies Stratum 3 and is described as a very dark grey clay that is highly laminated with light grey silt and very fined-grained sand. Based on results of an in-situ slug test, the vertical hydraulic conductivity was 3.7×10^{-8} cm/sec.

It was concluded that Stratum 1 was not laterally continuous across the approximately 153-acre landfill. The estimated calculated seepage velocities in Stratums 1 and 3 were as follows:

- Stratum 1: 2 to 20 feet/year; and
- Stratum 3: <1 to 10 feet/year.

While Stratum I and Stratum III have been monitored per the CCR Rule since October 2015, it is unclear whether Stratum I and Stratum III are aquifers that are capable of providing sustainable well yields consistent with USEPA aquifer use criteria (*e.g.*, 0.1 gallons per minute). This uncertainty is based on the following evidence:

- Stratum I is present to the west of the CADL and only present within the western portion of the ADEQ-permitted boundaries of the CADL, approximately corresponding to the boundaries of the closed portions of the CADL. The CCR Unit and Stratum I are not continuous to the east across the entire footprint of the CADL;
- In-situ hydraulic conductivities are low to very low for both Stratum I and Stratum III, indicating that sustainable well yields may not be obtainable from Stratum I and Stratum III at volumes that meet the minimum USEPA well use criteria (*e.g.*, 0.1 gallons per minute); and
- During the quarterly and semiannual detection monitoring events performed from October 2015 through December 2021, which have been performed using the low-flow purge and sample methodology, the sampling teams have consistently documented that turbidity values are often greater than 10 Nephelometric Turbidity Units (NTU). Furthermore, wells have been pumped dry during sampling for both Stratum I and Stratum III, indicating that neither sustainable well yields nor useable drinking water are associated with Stratum I and Stratum III.

To evaluate this uncertainty, Entergy began performing hydrogeologic investigations during 2019 and 2020, continuing through 2021 to evaluate both the stratigraphy and hydrogeology beneath the CCR Unit and to identify the aquifer(s) making up the uppermost aquifer system at the CCR Unit and CADL and the appropriateness of the current Certified Monitioring Well Network.

2.2 General Groundwater Quality

Regionally, groundwater quality in the Jackson Group consists of a sodium- and calcium-sulfate water type, with generally poor water quality (FTN 2014, Kresse et. al 2014). Reported water quality concentrations for select secondary drinking water contaminants compared to USEPA secondary maximum contaminant levels (MCLs) are provided in the table below.

Jackson Group Groundwater Water Quality

Constituent	Concentration Range		USEPA Secondary MCL
	Low	High	
Iron (mg/L)	0.05	19	0.3
pH (s.u.)	2.9	8.0	6.5 - 8.5
Sulfate (mg/L)	0.6	3,080	250
TDS (mg/L)	11	5,330	500

As noted in the table above, the natural range of groundwater quality within the Jackson Group, which includes both Stratum I and Stratum III, exceeds the secondary drinking water MCLs established by the USEPA for drinking water or, in the case of pH, is less than its secondary MCL. Finally, the results of historical groundwater monitoring at the Plant conducted from 1991 through 1996 showed that normal indicator parameters were masked by naturally elevated concentrations of the monitored constituents (FTN 2014, TRC 2018a).

2.3 Groundwater Geochemistry

Understanding the geochemistry of groundwater is essential to examining the groundwater monitoring data, explaining the relationships between the characteristics, and analyzing natural as well as anthropogenic impacts on groundwater systems. Source apart, geochemical processes play an important role in controlling the chemical composition of groundwater, including carbonate equilibrium, oxidation-reduction reactions and adsorption-desorption processes. Based the site geological conditions, several groundwater parameters are discussed as follows, including boron, fluoride, sulfate, calcium, and TDS.

2.3.1 Boron in Groundwater

Boron in normally considered as a minor constituent in groundwater as it is generally present in low concentrations (Palmucci & Rusi, 2014). Source apart, the primary origin of boron in groundwater is the process of sorption and desorption to the mineral surfaces including rocks and soils (Ravenscroft & McArthur, 2004). The regulatory guideline values of boron in drinking water are given at 0.5 mg/L by WHO and 0.9 mg/L by USEPA in human consumption for long-term exposure (WHO, 2008; USEPA, 2008). Boron is often cited as contamination tracer and usually occurs as a non-ionized form as H_3BO_3 in soils at pH<8.5, but above this pH, it exists as an anion, $B(OH)_4^-$ (Upadhyaya et al., 2014).

The factors that may influence the boron concentration in groundwater include weathering, human activity, evaporative concentration, ion-exchange, electrical conductivity (EC), and pH. Ravenscroft & McArthur (2004) studied the mechanism of regional boron enrichment groundwater and the results indicated that the main process caused high boron enriched in groundwater was the flushing by fresh groundwater other than geolofical setting, climate or age. The desorption of Boron from mineral surfaces could be affected by pH, ionic strength, salinity and HCO_3/CO_3. Decreasing of pH will increase the dissolution of boron from the mineral surfaces. Boron adsorption favors high pH and boron desorption favors low pH on rocks, soils and organic matters (Hollis et al., 1988; Keren & Communar, 2009; Tabelin et al., 2014).

A few more research studies confirmed that the presence of boron in groundwater depends on the EC (salinity), such that it increases with increasing EC. Halim et al. (2010) reported that the increasing of Cl^- concentration contributes to increase in EC value since a strong linear correlation ($R^2 = 0.88$) between EC and Cl^- was observed. Palmucci & Rusi (2014) observed a clear correlation between the high concentrations of boron and the chloride-sodium facies, which are characterized by high saline content, negative redox potential, and low value of the SO_4^{2-}/Cl^- ratio. Rodriguez-Espinosa et al. (2020) found that the Boron concentration in groundwater was related to the SO_4^{2-} and age affect.

Regarding to the Boron concentration level on the sites, the main source of Boron is more natural than anthropogenic. Therefore, the detected increasing of Boron concentration is likely due to the geochemistry condition changes, such as pH, ion exchanges, EC and salinity.

2.3.2 Fluoride in Groundwater

The common natural source of fluoride in groundwater is the dissolution of natural fluoride-bearing mineral, such as fluorspar, fluorapatite, amphiboles, hornblende, tremolite and biotite (Luo et al., 2018). The natural concentration of fluoride in groundwater depends on the geological, chemical and physical characteristics of the aquifer, the porosity and acidity of the soil and rocks, the surrounding temperature, the action of other chemical elements, depth of the aquifer and intensity of weathering (Brindha & Elango, 2011). Due to the concentration range of this site, geochemical process is the main factor controlling fluoride in groundwater.

Ion exchange, evaporation, adsorption-desorption, ion competition, mixing, salinization and anthropogenic pollution are geochemical processes that can take place and cause the occurrence of fluoride in groundwater (Luo et al., 2018). Main factors that might cause the increase of fluoride concentration in groundwater include alkaline pH, high concentration of sodium and bicarbonate, and low concentration of calcium.

Alkaline pH can increase the fluoride dissolution from mineral surfaces into groundwater. Saxena & Ahmed (2001) observed that alkaline conditions with pH ranging between 7.6 and 8.6 are favorable for dissolution of fluorite mineral from the host rocks.

Sodium bicarbonate type waters are typical of high fluoride waters. Many research studies have demonstrated positive correlations between fluoride and both bicarbonate and sodium as well as an inverse relation between fluoride and calcium. (Mondal et al., 2014; Guo et al., 2012; Chen et al., 2020). The chemical reactions for the dissolution of fluoride in the presence of high bicarbonate and sodium, and low calcium content is described as follows (Kimambo et al., 2019):

$$\mathrm{Na^+ + \ + HCO_3^- - \rightarrow NaHCO_3}$$

$$\mathrm{CaF_2 + \ + 2NaHCO_3 \ \rightarrow CaCO_3 + 2Na^+ + 2F^- + \ H_2O + CO_2}$$

Luo et al. (2018) reported that cation exchange can increase the fluoride concentration when increasing the Na/Ca molar ratio via ion complexation, and salt effect can further increase the fluoride dissolution from mineral surfaces.

In addition, evaporation is another potential reason to increase the fluoride concentration in shallow groundwater. Evaporation could directly remove water from shallow aquifers and elevate the fluoride concentration. Evaporation could increase ion concentrations, leading to the precipitation of some major minerals, reducing the calcium concentration, and favoring the dissolution of fluoride. Anthropogenic sources may also increase the fluoride in groundwater, such as pesticide and fertilizer use, and industrial waste discharge.

2.3.3 Sulfate in Groundwater

Sulfate is ubiquitous in groundwater, with both natural and anthropogenic sources. There are many potential sources of sulfate including mineral dissolution, atmospheric deposition, and other anthropogenic sources (mining, fertilizer, synthetic detergents, industrial wastewater etc.) (Miao et al., 2012). As water moves through soil and rock formations that contain sulfate minerals, some of the sulfate dissolves into the groundwater. Minerals that contain sulfate include magnesium sulfate (Epsom salt), sodium sulfate (Glauber's salt), and calcium sulfate (gypsum). Gypsum is an important contributor to the high levels of sulphate in many aquifers of the world. Higher levels of sulfate in groundwater are common in the western part of the United States (MDH, 2008).

Sulfate is mobile in soil and inputs to soil will impact groundwater eventually. Many research studies indicated that atmospheric deposition, dissolution of gypsum, oxidation of sulfide mineral and anthropogenic inputs will contribute to sulfate. Based on the geological condition of the site, atmospheric deposition and anthropogenic activities could be the main factors (Einsiedl & Mayer, 2005; Pu et al., 2012).

2.3.4 Calcium in Groundwater

Calcium is one of the most important ionic constituents in groundwater (Razowska-jaworek, 2014). Water-rock interaction occurs when water meets rocks or minerals, limestone, marble, calcite, dolomite, gypsum, fluorite and apatite. Natural dissolution of carbonate rocks and minerals is the primary source of calcium in groundwater (Jiang et al., 2009). Calcium is an important determinant of water hardness (Ca^{2+}), while magnesium is the other hardness determinant. The most common shallow groundwater type is Ca-HCO_3 dominated and Ca(Mg)-HCO_3 dominated.

A literature review indicates the major factors that may influence the calcium concentration in groundwater include rock weathering, pH, electrical conductivity and anthropogenic activities (mining, concrete material dissolution, fertilizer etc.) (Hájek et al., 2021; Schot & Wassen, 1993; Shi et al., 2018). Based on the geological condition of the site, pH, electrical conductivity and anthropogenic activities could be the potential reasons for the calcium SSI.

2.3.5 TDS in Groundwater

Total dissolved solids represent the combined total of inorganic and organic substances contained in the groundwater, and it can be a general indicator of water quality. These solids are primarily minerals, salts, and organic matters, which may originate from sources such as weathering of minerals, urban runoff, sewage, effluent discharges, agricultural, decaying organisms, and other human activities (de-icing roads, water softer use). Common salts that contribute to TDS are sodium, chloride, calcium, magnesium, potassium, sulfates, and bicarbonates (Olumuyiwa I. Ojo, 2012).

TDS levels in groundwater is usually higher than surface water due to the longer contact time with the underlying rocks and sediments. Since many minerals are water soluble, high concentrations can accumulate over time through the constantly reoccurring process of precipitation and evaporation.

TDS is related to other water quality parameters like hardness, which may occur if the high TDS content is due to the presence of carbonates. A few research studies simulated the relationship between TDS and other groundwater parameters such as EC and salinity, using different models. Due to the complicated geological conditions, the observation was not consistent at different study sites (Atekwana et al., 2004; Banadkooki et al., 2020; Poursaeid et al., 2020).

Section 3
Alternate Source Demonstration

Pursuant to 40 CFR 257.94(e)(2), Entergy may demonstrate that a source other than the CCR Unit caused the SSI or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. As discussed previously, the 2nd Half 2021 semiannual detection monitoring event was performed in December 2021. Statistical analysis of the 2nd Half 2021 semiannual detection monitoring data was performed pursuant to 40 CFR 257.93(f) and (g) and in accordance with the Statistical Methods Certification (TRC 2017b) and the Statistical Analysis Plan (FTN 2017a). Based on either increasing trends at 98% confidence levels using Sen's Slope test and/or intrawell prediction limits statistical analyses, the following 19 SSIs were identified:

- Calcium, fluoride, sulfate and TDS (MW-106S);
- Boron and calcium (MW-110S);
- Boron, calcium, fluoride, sulfate and TDS (MW-111S);
- Calcium (MW-101D);
- Boron, calcium and TDS (MW-112D);
- Calcium (MW-114D); and
- Calcium, fluoride and sulfate (MW-118D).

Other Appendix III constituent concentrations were within their trends at 98% confidence levels using Sen's slope test and/or intrawell prediction limits in the CCR Rule groundwater monitoring system wells.

A discussion for each of the individual SSIs identified for the Stratum I and III wells and associated evidence demonstrating that the 19 SSIs were not caused by a release from the CCR Unit is provided in the subsections below.

3.1 MW-106S: Calcium, Fluoride, Sulfate, and TDS

The potential SSIs identified at MW-106S (calcium, fluoride, sulfate, and TDS) are a result of the acidic geochemistry condition in groundwater, potential impact of CCR disposed at the CADL prior to October 19, 2015, or potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-106S. The following evidence supports this determination:

- Calcium was detected in MW-106S at a concentration of 40.2 mg/L in the December 2021 sample. Compared to the value of 32.5 mg/L in the June 2021 sample, the calcium concentration increased by 24%. Normality analysis of the calcium data set at MW-106S was non-normal requiring trend analysis of the data set to determine a potential significance increase. The Mann-Kendal statistic of 116 exceeded the critical value of 58 indicating a significant increasing trend at the 98% confidence level. As discussed in Section 2.3, pH and EC could affect calcium concentrations in groundwater. A low pH value of 3.91 was detected in the December 2021 sample and the historical data review shows pH in MW-106S stays in a steady range of 3.6 – 4.5, which indicates the groundwater in this area is acidic and it was related to pre-CCR Rule disposal source or natural geochemistry conditions. The acidic groundwater condition favors the dissolution of calcium from soil and mineral surfaces to water phase. The significant increasing trend of calcium from 16 mg/L in 2015 to 40 mg/L in 2021 could be a result of the acidic geochemistry condition. The increasing cation and anion concentrations will also lead to the increasing EC, which will affect other metals dissolution.
- The concentrations of calcium in MW-101S, which is a background well, have varied from 14 to 98.5 mg/L during the overall time period of CCR detection monitoring. The calcium concentration of 98.5 mg/L for MW-101S is greater than the calcium concentration of 40.2 mg/L measured at MW-106S during the 2nd Half 2021 semiannual detection monitoring event. Therefore, the calcium concentration measured at MW-106S is within the range of natural variation in background groundwater quality.
- Based on review of potentiometric surface mapping, locations of closed portions of the CADL underlying the CCR Unit, and the CCR Unit relative to MW-106S, it appears that MW-106S may monitor groundwater associated with the underlying pre-CCR Rule closed portions of the CADL rather than the CCR Unit; therefore, concentrations measured in MW-106S are likely more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-106S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-106S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to

MW-106S, it appears likely that surface water infiltration may have impacted the MW-106S monitoring results.

3.2 Fluoride at MW-106S

The Fluoride SSI identified at MW-106S is a result of potential favorable geochemistry condition in groundwater, potential impact of CCR disposed at the CADL prior to October 19, 2015, and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-106S. The following evidence supports this determination:

- Fluoride was detected in MW-106S at a concentration of 0.681 mg/L in the December 2021 sample, which was consistent with 0.683 mg/L in the June 2021 sample. This concentration exceeded the intrawell prediction limit of 0.545 mg/L and the maximum fluoride concentrations of 0.1 to 0.135 mg/L measured in the three Stratum I background monitoring wells (MW-101S, MW-102S, and MW-104S). However, it should be noted that the measured fluoride concentrations are less than the federal primary drinking water maximum contaminant level (MCL) standard of 4.0 mg/L.

- The fluoride concentration in MW-106S stayed in a narrow range of 0.6-0.68 mg/L in the past two years. pH of the groundwater is not an impact of the exceedance since fluoride dissolution favors alkaline pH. As discussed in Section 2.3, fluoride has positive correlation with both bicarbonate and sodium, and an inverse relation with calcium. With the increasing trend of calcium in the groundwater, ion exchange process with high sodium and bicarbonate can result in the increasing of fluoride in groundwater.

- Based on review of potentiometric surface mapping, locations of closed portions of the CADL underlying the CCR Unit, and the CCR Unit relative to MW-106S, it appears that MW-106S may monitor groundwater associated with the underlying pre-CCR Rule closed portions of the CADL rather than the CCR Unit; therefore, concentrations measured in MW-106S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-106S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-106S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-106S, it appears likely that surface water infiltration may have impacted the MW-106S monitoring results.

3.3 Sulfate at MW-106S

The sulfate SSI identified at MW-106S is a result of natural geochemistry condition in soil and groundwater, potential impact of CCR disposed at the CADL prior to October 19, 2015, and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-106S. The following evidence supports this determination:

- Sulfate was detected in MW-106S at a concentration of 710 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 538 mg/L. Compared to the value of 640 mg/L in the June 2021 sample, the sulfate concentration increased by 11%. The sulfate increasing proportion was consistent with TDS, which indicated that more salts were dissoved into groundwater. It could be caused by the acidic geochemistry condition discussed above or an anthropogenic source since sulfate is mobile in soils and can get into groundwater via surface water infiltration. Another potential reseaon is the natural occurrence of sulfide minerals in the soil, such as pyrite. The oxidation of sulfide minerals will slowly release sulfate and hydrogen ion into groundwater, which will lead to the increasing of sulfate and decreasing of pH.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-106S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-106S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-106S, it appears likely that surface water infiltration may have impacted the MW-106S monitoring results.
- Based on review of potentiometric surface mapping and locations of closed portions of the CADL, and the CCR Unit relative to MW-106S, MW-106S may monitor groundwater associated with the pre-CCR Rule closed portions of the CADL rather than the CCR unit; therefore, concentrations measured in MW-106S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

3.4 TDS at MW-106S

The TDS SSI identified at MW-106S is a result of the acidic groundwater geochemistry condition, sodium sulfate source, potential impact of CCR disposed at the CADL prior to October 19, 2015, and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-106S. The following evidence supports this determination:

- TDS was detected in MW-106S at a concentration of 1090 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 765.5 mg/L and the maximum TDS concentrations (196 mg/L to 421 mg/L) detected in the three Stratum I background wells (MW-101S, MW-102S, and MW-104S). Compared to the value of 980 mg/L in the June 2021 sample, the TDS concentration increased by 11%, which indicated that more salts were dissoved into groundwater. As discussed in Section 2.2, the Jackson Group groundwater is sodium- and calcium-sulfate water type. Sodium could be another main contribution to the TDS exceedance with calcium and sulfate. High sodium concentration can also cause the fluoride exceedance. The acidic groundwater could be one of the potential reasons. An alternate source containing sodium sulfate should also be considered, which can be mineral dissolution, surface water flux or atmospheric deposition.

- Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-106S, MW-106S may monitor groundwater associated with the pre-CCR Rule closed portions of the CADL rather than the CCR Unit. Therefore, concentrations measured in MW-106S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-106S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-106S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-106S, it appears likely that surface water infiltration may be impacting the MW-106S monitoring results.

3.5 Boron at MW-110S

The Boron SSI identified at MW-110S is a result of the acidic groundwater geochemistry condition and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- Boron was detected in MW-110S at a concentration of 1.47 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 1.299 mg/L. Compared to the value of 1.83 mg/L in the June 2021 sample, the boron concentration decreased by 24%. The Mann-Kendal statistic of 102 exceeded the critical value of 58 indicating a significant increasing trend at the 98% confidence level. As discussed in Section 2.3, the main factors that may influence boron concentration in groundwater are pH and EC. Decreasing of pH will increase the dissolution of boron from the mineral surfaces. Boron in groundwater will increase with the increasing of EC. The historical data review shows the relatively low salts concentrations in MW-110S area, which indicates EC is not the factor causing the boron increasing trend. A low pH value of 4.55 was detected in the December 2021 sample. The acidic groundwater condition favors the boron dissolution from soil and mineral surface. Based on the consistent boron levels in groundwater, the significant increasing trend of boron is more likely relative to the acidic geochemistry condition other than a contamination source.

- Based on review of potentiometric surface mapping, locations of historic fill, locations of closed portions of the CADL underlying the CCR Unit, and the CCR Unit relative to MW-110S, it appears that MW-110S may monitor groundwater associated with the underlying pre-CCR Rule closed portions of the CADL rather than the CCR Unit; therefore, concentrations measured in MW-110S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

3.6 Calcium at MW-110S

The calcium SSI identified at MW-110S is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- Calcium was detected in MW-110S at a concentration of 6.16 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 5.915 mg/L. Compared to the value of 16.1 mg/L in the June 2021 sample, the calcium concentration decreased by 62%. Background concentrations of calcium have varied from 14 to 98.5 mg/L at upgradient monitoring well MW-101S, which is greater than the calcium concentration of 6.16 mg/L detected in MW-110S during the 2nd Half 2021 semiannual detection monitoring event. Therefore, the calcium exceedance is within the range of natural variation in background groundwater quality and is not a potential environmental concern.
- Based on review of potentiometric surface mapping, locations of historic fill, locations of closed portions of the CADL underlying and adjoining the CCR Unit, and the CCR Unit relative to MW-110S, MW-110S may monitor groundwater associated with the pre-CCR Rule closed portions of the CADL rather than the unit; therefore, concentrations measured in MW-110S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

3.7 Boron at MW-111S

The boron SSI identified at MW-111S is a result of natural groundwater geochemistry conditions with low pH and high EC, potential impact of CCR disposed at the CADL prior to October 19, 2015, and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-111S. The following evidence supports this determination:

- Boron was detected in MW-111S at a concentration of 5.82 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 4.209 mg/L. Compared to the value of 4.86 mg/L in the June 2021 sample, the boron concentration increased by 20%. The Mann-Kendal statistic of 95 exceeded the critical value of 58 indicating a significant increasing trend at the 98% confidence level. As discussed in Section 2.3, the main factors that may influence boron concentration in groundwater are pH and EC. Decreasing of pH will increase the dissolution of boron from the mineral surfaces. Boron in groundwater will increase with the increasing of EC. A low pH value of 3.76 was detected in the December 2021 sample and the pH of groundwater in the area of MW-111S stayed in a steady range of 3.6 to 4.5 in the past five years. The acidic groundwater condition favors the boron dissolution from soil and mineral surface. The increasing of calcium, sulfate and TDS in MW-111S demonstrates that the groundwater in this area has relatively high EC, which will cause the increasing of boron concentration in groundwater. Based on the consistent boron levels, the significant increasing trend of boron is more likely relative to the geochemistry conditions with low pH and high EC other than a contamination source.

- Based on review of potentiometric surface mapping and locations of closed portions of the CADL, and the CCR Unit relative to MW-111S, MW-111S may monitor groundwater associated with the pre-CCR Rule closed portions of the CADL rather than the CCR Unit. Therefore, concentrations measured in MW-111S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-111S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-111S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-111S, it appears likely that surface water infiltration may be impacting the MW-111S monitoring results.

3.8 Calcium at MW-111S

The calcium SSI identified at MW-111S is a result of natural groundwater geochemistry conditions with low pH and high EC, potential impact of CCR disposed at the CADL prior to October 19, 2015, and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-111S. The following evidence supports this determination:

- Calcium was detected in MW-111S at a concentration of 110 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 34.76 mg/L. Compared to the value of 83.5 mg/L in the June 2021 sample, the calcium concentration increased by 32%. Normality analysis of the calcium data set at MW-111S was non-normal requiring trend analysis of the data set to determine a potential significance increase. The Mann-Kendal statistic of 116 exceeded the critical value of 58 indicating a significant increasing trend at the 98% confidence level. As discussed in Section 2.3, pH and EC could affect calcium concentrations in groundwater. A low pH value of 3.76 was detected in the December 2021 sample and the pH of groundwater in the area of MW-111S stayed in a steady range of 3.6 to 4.5 in the past five years. The acidic condition favors the dissolution of calcium from soil and mineral surfaces to water phase. The relatively high EC in groundwater discussed above can also increase the calcium concentration. The significant increasing trend of calcium could be a result of the natural geochemistry conditions with low pH and high EC.

- Background concentrations of calcium have varied from 14 to 98.5 mg/L at upgradient monitoring well MW-101S. The calcium concentration of 110 mg/L at MW-110S during the 2nd Half 2021 semiannual detection monitoring event is beyond but close to the top background concnetration. Therefore, the calcium exceedance is still in the range of natural variation in background groundwater quality.
- Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-111S, MW-111S may monitor groundwater associated with the underlying pre-CCR Rule closed portions of the CADL rather than the CCR Unit. Therefore, concentrations measured in MW-111S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-111S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-111S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-111S, it appears likely that surface water infiltration may have impacted the MW-111S monitoring results.

3.9 Fluoride at MW-111S

The fluoride SSI identified at MW-111S is a result of natural groundwater geochemistry conditions, potential impact of CCR disposed at the CADL prior to October 19, 2015 and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-111S. The following evidence supports this determination:

- Fluoride was detected in MW-111S at a concentration of 0.782 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 0.2466 mg/L and the maximum fluoride concentrations of 0.1 to 0.135 mg/L measured in the three Stratum I background monitoring wells (MW-101S, MW-102S, and MW-104S). Compared to the value of 0.604 mg/L in the June 2021 sample, the fluoride concentration increased by 29%. The Mann-Kendal statistic of 112 exceeded the critical value of 58 indicating a significant increasing trend at the 98% confidence level. However, it should be noted that the measured fluoride concentrations are less than the federal primary drinking water MCL of 4.0 mg/L. pH of the groundwater is not an impact of the exceedance since fluoride dissoluction favors alkaline pH. As discussed in Section 2.3, fluoride has positive correlation with both bicarbonate and sodium, and an inverse relation with calcium. With the increasing trend of calcium in the groundwater, ion exchange process with high sodium and bicarbonate can result in the increasing of fluoride in groundwater. The fluoride increasing trend could also be a result of continouse dissoved salts from the soils and minerals associated with the increased TDS.

- Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-111S, MW-111S may monitor groundwater associated with the pre-CCR Rule closed portions of the CADL rather than the CCR Unit. Therefore, concentrations measured in MW-111S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-111S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-111S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-111S, it appears likely that surface water infiltration may have impacted the MW-111S monitoring results.

3.10 Sulfate at MW-111S

The sulfate SSI identified at MW-111S is a result of natural groundwater geochemistry condition of low pH and potential oxidation of sulfide minerals, potential impact of CCR disposed at the CADL prior to October 19, 2015, and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-111S. The following evidence supports this determination:

- Sulfate was detected in MW-111S at a concentration of 841 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 348 mg/L. Compared to the value of 649 mg/L in the June 2021 sample, the sulfate concentration increased by 29%. The Mann-Kendal statistic of 104 exceeded the critical value of 58 indicating a significant increasing trend at the 98% confidence level. The sulfate increasing was consistent with the TDS increasing, which indicated that more salts were dissoved into groundwater. It could be caused by the acidic geochemistry condition discussed above or an anthropogenic source since sulfate is soluble in soils and can get into groundwater via surface water infiltration. Another potential reseaon is the naturally occurrence of sulfide minerals in the soil, such as pyrite. The oxidation of sulfide minerals will slowly release sulfate and hydrogen ion into groundwater, which will lead to the increasing of sulfate and decreasing of pH. To further investigate this hypothesis, the analysis of ORP is recommended for MW-111S in the next sampling event.

- Based on review of potentiometric surface mapping and locations of closed portions of the CADL, and the CCR Unit relative to MW-111S, MW-111S may monitor groundwater associated with the pre-CCR Rule closed portions of the CADL rather than the CCR Unit; therefore, concentrations measured in MW-111S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-111S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-111S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-111S, it appears likely that surface water infiltration may have impacted the MW-111S monitoring results.

3.11 TDS at MW-111S

The TDS SSI identified at MW-111S is a result of the acidic groundwater geochemistry conditions with natural occurrence of sulfide minerals, sodium sulfate source, the potential impact of CCR disposed at the CADL prior to October 19, 2015 and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-111S. The following evidence supports this determination:

- TDS was detected in MW-111S at a concentration of 1240 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 765.5 mg/L and the maximum TDS concentrations (196 mg/L to 421 mg/L) detected in the three Stratum I background wells (MW-101S, MW-102S, and MW-104S). Compared to the value of 1030 mg/L in the June 2021 sample, the TDS concentration increased by 20%. The Mann-Kendal statistic of 117 exceeded the critical value of 58 indicating a significant increasing trend at the 98% confidence level. As discussed in Section 2.2, the Jackson Group groundwater is sodium- and calcium-sulfate water type. Sodium could be another main contribution to the TDS exceedance with the increasing of calcium and sulfate. High sodium concentration can also cause the fluoride exceedance. The acidic groundwater could be one of the potential reasons. An alternate source containing sodium sulfate should also be considered, which can be mineral dissolution, surface water flux or atmospheric deposition.
- Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-111S, MW-111S may monitor groundwater associated with the pre-CCR Rule closed portions of the CADL rather than the CCR Unit. Therefore, concentrations measured in MW-111S may be more reflective of pre-CCR Rule disposal rather than of the Unit.

- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-111S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-111S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-111S, it appears likely that surface water infiltration may have impacted the MW-111S monitoring results.

3.12 Calcium at MW-101D

The calcium SSI identified at MW-101D is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- Calcium was detected in MW-101D at a concentration of 56.3 mg/L in the December 2021 sample, which was consistent with 55.3 mg/L in the June 2021 sample. This concentration exceeded the intrawell prediction limit of 48.1 mg/L. Calcium concentrations measured at MW-118D have ranged from 68.4 to 83.2 mg/L. MW-118D likely represents background groundwater quality for Stratum III, since it is located approximately 1,650 feet to the east of the CCR Unit. Therefore, the calcium exceedance at MW-101D appears to be within the range of variation in background groundwater quality.
- Based on review of potentiometric surface mapping, locations of historic fill, locations of closed portions of the CADL, and the CCR Unit relative to MW-101D, MW-101D is located approximately 325 feet to historic fill areas, but approximately 850 feet from the CCR Unit. Therefore, the concentrations of calcium measured in MW-101D may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

3.13 Boron at MW-112D

The boron SSI identified at MW-112D is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- Boron was detected in MW-112D at a concentration of 0.27 mg/L in the December 2021 sample, which was consistent with 0.278 mg/L in the June 2021 sample. This concentration exceeds the intrawell prediction limit of 0.236 mg/L. Boron concentrations measured at MW-118D (background well for Stratum III) have ranged from 0.274 to 0.355 mg/L. Therefore, the boron exceedance at MW-112D is within the range of variation in background groundwater quality and is not a potential environmental concern.

- Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-112D, MW-112D is located immediately adjacent (approximately 25 feet) to historic fill, but approximately 950 feet from the CCR Unit. Therefore, the concentrations of boron measured in MW-112D may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- Groundwater flow velocities are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-112D is located approximately 950 feet from the CCR unit, any release from the CCR Unit would be detected in Stratum III at MW-112D within approximately 95 years, which is significantly longer than the CCR Unit has been in operation. Therefore, the concentration of boron at MW-112D likely represents either potential pre-CCR Rule migration from historic fill or background groundwater quality for Stratum III.

3.14 Calcium at MW-112D

The calcium SSI identified at MW-112D is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- Calcium was detected in MW-112D at a concentration of 35.4 mg/L in the December 2021 sample, which was consistent with 55.3 mg/L in the June 2021 sample. This concentration exceeds the intrawell prediction limit of 19.2 mg/L. A pH value of 8.27 was detected at in the December 2021 sample and the historical data review shows MW-112D area has a netural pH condition in groundwater. The relatively low TDS indicated that EC in groundwater is not a factor to the calcium exceedance. Calcium concentrations measured at MW-118D (background well for Stratum III) have ranged from 68.4 to 83.2 mg/L. Therefore, the calcium exceedance at MW-101D is within the range of variation in background groundwater quality and is not a potential environmental concern.
- Based on review of potentiometric surface mapping, locations of historic fill, locations of closed portions of the CADL, and the CCR Unit relative to MW-112D, MW-112D is located immediately adjacent (approximately 25 feet) to historic fill, but approximately 950 feet from the CCR Unit. Therefore, the concentrations of calcium measured in MW-112D may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- As discussed previously, groundwater flow velocities are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-112D is located approximately 950 feet from the CCR Unit, any release from the CCR Unit would be detected in Stratum III at MW-112D within approximately 95 years, which is significantly longer than the CCR Unit has been in operation. Therefore, the concentration of calcium at MW-112D likely represents either potential pre-CCR Rule migration from historic fill or background groundwater quality for Stratum III.

3.15 TDS at MW-112D

The TDS SSI identified at MW-112D is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- TDS was detected in MW-112D at a concentration of 275 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 187.6 mg/L. Compared to the value of 292 mg/L in the June 2021 sample, the TDS concentration decreased by 6%. TDS concentrations measured at MW-118D (background well for Stratum III) have ranged from 415 to 484 mg/L. A review of groundwater parameters in Stratum III indicates that sulfate is a great contributor to TDS and the sulfte concentration at MW-112D is very low (less than 4 mg/L). It could be a result of the lack of sulfide minerals in soil. Therefore, the TDS exceedance at MW-112D is within the range of variation in background groundwater quality and is not a potential environmental concern.
- Based on review of potentiometric surface mapping, locations of historic fill, locations of closed portions of the CADL, and the CCR Unit relative to MW-112D, MW-112D is located immediately adjacent (approximately 25 feet) to historic fill, but approximately 950 feet from the CCR Unit. Therefore, the concentrations of TDS measured in MW-112D may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- As discussed previously, groundwater flow velocities are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-112D is located approximately 950 feet from the CCR unit, any release from the CCR Unit would be detected in Stratum III at MW-112D within approximately 95 years, which is significantly longer than the CCR Unit has been in operation. Therefore, the concentration of TDS at MW-112D likely represents either potential pre-CCR Rule migration from the historic fill or background groundwater quality for Stratum III.

3.16 Calcium at MW-114D

The calcium SSI identified at MW-114D is a result of natural variation in groundwater quality. The following evidence supports this determination:

- Calcium was detected in MW-114D at a concentration of 53.4 mg/L in the December 2021 sample, which was consistent with 51.7 mg/L in the June 2021 sample. This concentration exceeds the intrawell prediction limit of 48.9 mg/L. A pH value of 8 was detected at in the December 2021 sample and the historical data review shows MW-114D area has a netural pH condition in groundwater. Calcium concentrations measured at MW-118D (background well for Stratum III) have ranged from 68.4 to 83.2 mg/L. Therefore, the calcium exceedance at MW-114D is within the range of variation in background groundwater quality and is not a potential environmental concern.

- Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-114D, MW-114D is located 950 feet from the CCR Unit. Therefore, the concentrations of calcium measured in MW-114D may be more reflective of background natural water quality rather than of the CCR Unit.
- As discussed previously, groundwater flow velocities in Stratum III are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-114D is located approximately 950 feet from the CCR Unit, any release from the pre-CCR Rule closed portions of the CADL or the CCR Unit would be detected in Stratum III at MW-114D within approximately 95 years, which is significantly longer than either the CADL or the CCR Unit has been in operation. Therefore, the concentration of calcium at MW-114D likely represents background natural groundwater quality for Stratum III.

3.17 Calcium at MW-118D

The calcium SSI identified at MW-118D is a result of natural groundwater geochemistry conditions with high EC. The following evidence supports this determination:

- Calcium was detected in MW-118D at a concentration of 103 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 86.24 mg/L. Compared to the value of 76.4 mg/L in the June 2021 sample, the calcium concentration increased by 35%. The netural pH range of 6.7 to 7.4 at MW-118D indicates that pH of groundwater is not a factor to the calcium exceedance. The increasing sulfate and TDS concentrations can lead to the increasing EC in groundwater, which favors calcium dissolution and thus increases the calcium concentration in groundwater. Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-118D, MW-118D is located 1,650 feet east of the CCR Unit. Therefore, the calcium exceedance detected in MW-118D is more likey relative to the geochemistry conditions with increasing EC rather than to the CCR Unit.
- As discussed previously, groundwater flow velocities in Stratum III are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-118D is located approximately 1,650 feet from the CCR Unit, any release from the CCR Unit would be detected in Stratum III at MW-118D within approximately 165 years, which is significantly longer than either the the CCR Unit has been in operation. Therefore, the concentration of calcium at MW-118D likely represents background natural groundwater quality for Stratum III.

3.18 Fluoride at MW-118D

The fluoride SSI identified at MW-118D is a result of natural variation in groundwater quality. The following evidence supports this determination:

- Fluoride was detected in MW-118D at a concentration of 0.156 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 0.116 mg/L. Compared to the value of 0.305 mg/L in the June 2021 sample, the fluoride concentration decreased by 49%. A historical groundwater parameter data review of MW-118D suggests that it is possible there was an analysis error in June 2021 sampling event and the fluoride concentration of 0.156 mg/L is within the range of natural variation in groundwater quality. No geochemical factor that could increase the fluoride concentration in groundwater was found. Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-118D, MW-118D is located 1,650 feet east of the CCR Unit. Therefore, the concentrations of fluoride measured in MW-118D may be more reflective of background natural water quality rather than of the CCR Unit.
- As discussed previously, groundwater flow velocities in Stratum III are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-118D is located approximately 1,650 feet from the CCR Unit, any release from the CCR Unit would be detected in Stratum III at MW-118D within approximately 165 years, which is significantly longer than either the the CCR Unit has been in operation. Therefore, the concentration of fluoride at MW-118D likely represents background natural groundwater quality for Stratum III.

3.19 Sulfate at MW-118D

The sulfate SSI identified at MW-118D is a result of natural groundwater geochemistry conditions with potential high ORP or an alternative sulfate source. The following evidence supports this determination:

- Sulfate was detected in MW-118D at a concentration of 222 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 157.2 mg/L. Compared to the value of 157 mg/L in the June 2021 sample, the calcium concentration increased by 41%. The increasing of sulfate was consistent with the increasing of TDS, which indicated that more sulfate salts dissoved into groundwater from or through soils. Since sulfate is mobile in soils, anthropogenic sulfate source with surface water infiltration is a potential reason. Another potential reseaon is the naturally occurrence of sulfide minerals in the soil, such as pyrite. The oxidation of sulfide minerals will slowly release sulfate into groundwater, which will lead to the increasing of sulfate. Based on the hydrogeology location of Stratum III, the sulfate exceedance is more likely related to geochemistry conditions with sulfide minerals releasing rather than surface water infiltration. To further investigate this hypothesis, the analysis of ORP is recommended for MW-118D in the next sampling event.
- Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-118D, MW-118D is located 1,650 feet east of the CCR Unit. Therefore, the concentrations of sulfate measured in MW-118D may be more reflective of background natural water quality rather than of the CCR Unit.

- As discussed previously, groundwater flow velocities in Stratum III are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-118D is located approximately 1,650 feet from the CCR Unit, any release from the CCR Unit would be detected in Stratum III at MW-118D within approximately 165 years, which is significantly longer than either the the CCR Unit has been in operation. Therefore, the concentration of sulfate at MW-118D likely represents background natural groundwater quality for Stratum III.

Section 4
Conclusions

The information provided in this report serves as the ASD prepared in accordance with 40 CFR 257.94(e)(2) of the CCR Rule. Statistical evaluation identified 19 potential SSIs in three monitoring wells in Stratums I and four monitoring wells in Stratums III. This ASD has demonstrated the following lines of reasoning that support alternative sources for the identified SSIs:

- Low pH detected in Stratums I indicated the acidic groundwater geochemistry conditions in MW-106S, MW-110S and MW111-S. The 11 SSIs identified in Stratums I are related to the naurtal groundwater geochemistry conditions, such as low pH, high electrical conductivity, potential presence of sulfide minerals in soils and relatively high oxidation-reduction potential.
- The 8 SSIs identified in Stratums III are mostly within the natural variation in groundwater quality compared to MW-118D, which likely represents background natural groundwater quality for Stratum III due to its location to CCR Unit and groundwater flow velocities.
- Releases from historic fill or portions of the CADL closed before the effective date of the CCR Rule (October 19, 2015); and/or
- Surface water that has come into contact with on-site CCR and has migrated into the subsurface.

Therefore, the SSIs determined based on statistical analysis of the 2nd Half 2021 semiannual detection monitoring event performed in December of 2021 are not due to a release from the CCR Unit to Stratums I and III of the Jackson Group.Based on the information provided in this ASD report, Entergy will continue to conduct semiannual detection monitoring in accordance with 40 CFR 257.94 at the Certified Monitoring Well Network for the CCR Unit.

Section 5
References

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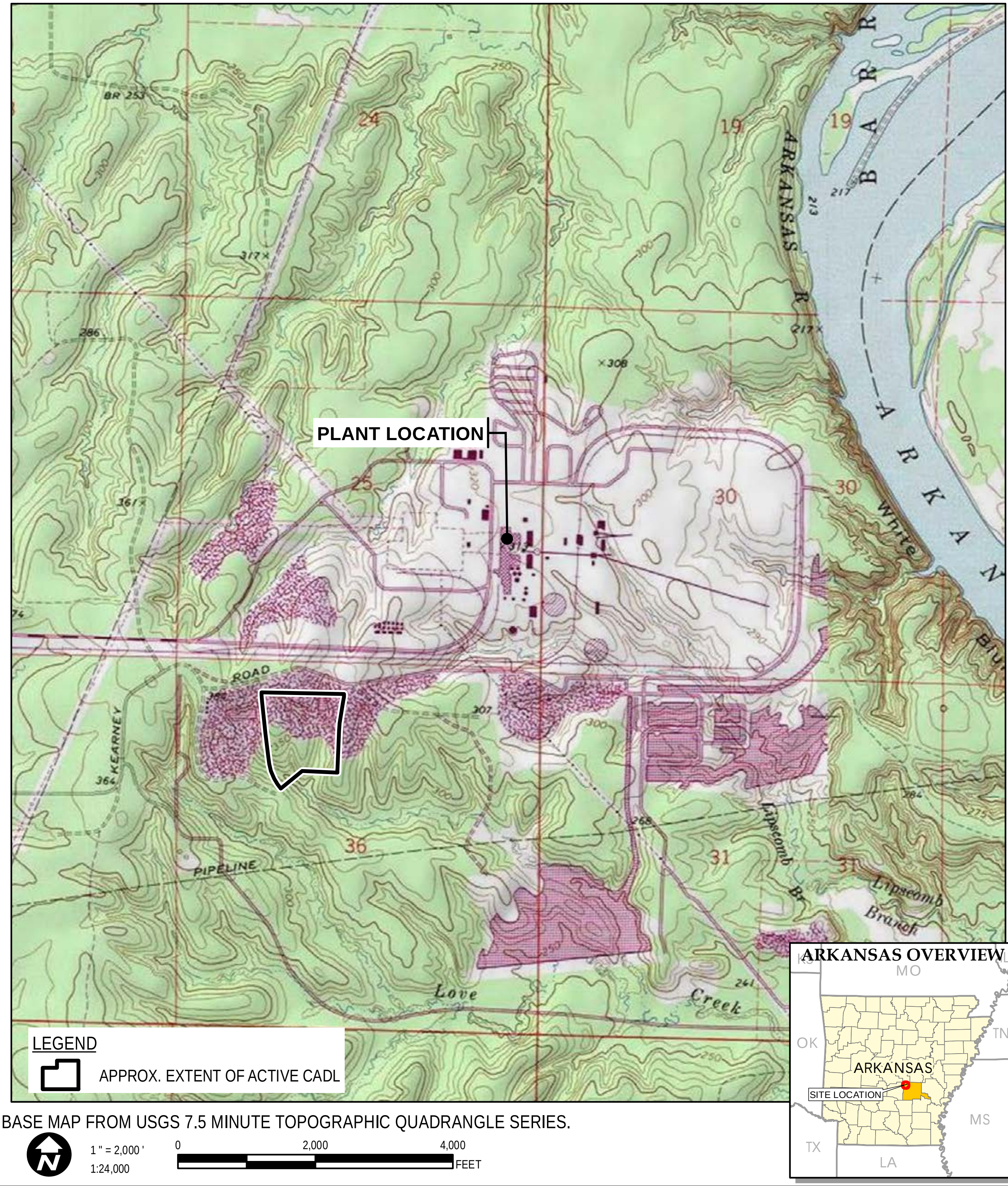


BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

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

0 2,000 4,000 FEET

TRC

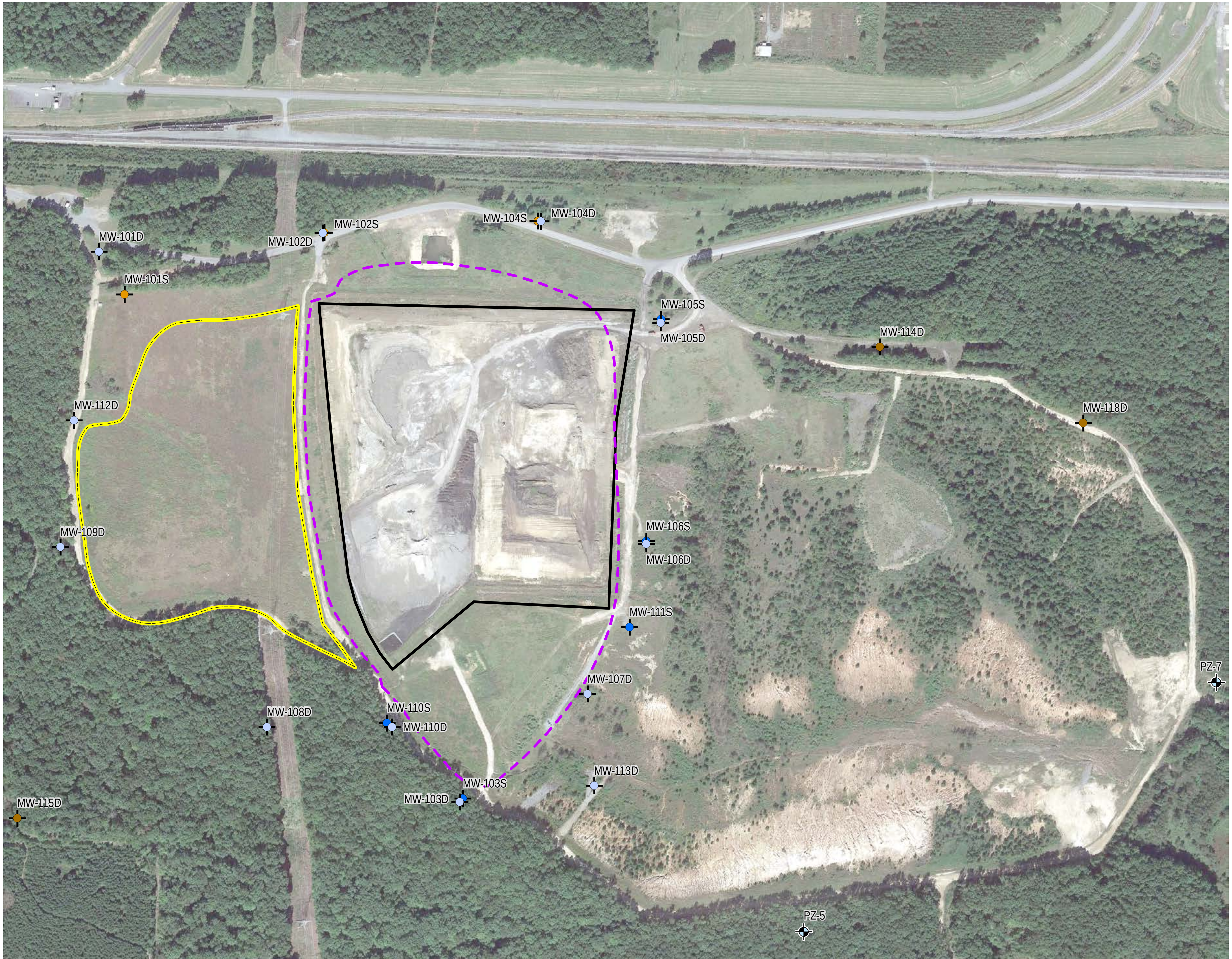
Two United Plaza
8550 United Plaza Blvd., Suite 502
Baton Rouge, LA
Phone: 225.216.7483

TRC - GIS

PROJECT:	ENTERGY WHITE BLUFF PLANT 1100 WHITE BLUFF ROAD REDFIELD, ARKANSAS
TITLE:	ENTERGY WHITE BLUFF PLANT LOCATION MAP

DRAWN BY:	S. MAJOR
CHECKED BY:	G. TIEMAN
APPROVED BY:	J. HOUSE
DATE:	JANUARY 2022
PROJ. NO.:	341458
FILE:	341458-001slm_20220105.mxd

FIGURE 1



LEGEND

- STRATUM I BACKROUND WELL
- STRATUM I MONITORING WELL
- STRATUM III BACKROUND WELL
- STRATUM III MONITORING WELL
- STRATUM III PIEZOMETER
- APPROX. EXTENT OF ACTIVE CADL
- APPROX. EXTENT OF CLOSED CADL
- HISTORIC FILL AREA

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, 2018.
2. COAL ASH DISPOSAL LANDFILL (CADL)

N

0 400 800 Feet

1 " = 371 '
1:4,458

PROJECT:

ENTERGY WHITE BLUFF PLANT
1100 WHITE BLUFF ROAD
REDFIELD, ARKANSAS

TITLE:

CADL EXTENT AND CCR GROUNDWATER MONITORING LOCATIONS

DRAWN BY:	S. MAJOR	PROJ. NO.:	341458
CHECKED BY:	S. SELLWOOD		
APPROVED BY:	J. HOUSE	**FIGURE 2**	
DATE:	JANUARY 2022		

TRC

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FILE NO.: 341458-002_01052022.mxd

TRC - GIS

Coordinate System: NAD 1983 StatePlane Arkansas South FIPS 0302 Feet (Foot US)
Map Rotation: 0
Plot Date: 1/5/2022, 15:55:41 PM by DSTITCHER -- LAYOUT: ANSI B(11"x17")
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Alternate Source Demonstration

1st Half 2022 Sampling Event

Entergy White Bluff Plant
Coal Ash Disposal Landfill
Redfield, Jefferson County, Arkansas

December 2022

Prepared For
Entergy Arkansas, LLC
White Bluff Plant
1100 White Bluff Road
Redfield, Arkansas 72132

Jason S. House
Senior Project Manager

Executive Summary

Entergy Arkansas, LLC (Entergy) performed the most recent semiannual detection monitoring sampling (1st Half 2022) in June 2022 for Cells 1 through 4 of the coal ash disposal landfill (CADL) pursuant to the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, 40 CFR Part 257 (CCR Rule). Cells 1 through 4 of the CADL constitute the coal combustion residuals (CCR) Unit per the CCR Rule. Per 40 CFR 257.94, the samples were analyzed for the Appendix III detection monitoring parameters. Upon receipt of the laboratory analytical results, statistical analysis was performed during March 2022.

In accordance with the statistical analyses, the following 26 statistically significant increases (SSI) above background concentrations were identified in three monitoring wells in Stratum I and four monitoring wells in Stratum III, based on either increasing trends at 98% confidence levels using Sen's Slope test and/or intrawell prediction limits statistical analyses:

- Calcium, fluoride, sulfate and TDS (MW-106S);
- Boron, sulfate and TDS (MW-110S);
- Boron, calcium, chloride, fluoride, sulfate and TDS (MW-111S);
- Calcium (MW-101D);
- TDS (MW-106D);
- TDS (MW-109D);
- Boron, calcium, chloride and TDS (MW-112D);
- Chloride (MW-113D);
- Calcium and TDS (MW-114D);
- Calcium (MW-115D); and
- Calcium and TDS (MW-118D).
- The information provided in this report serves as Entergy's alternate source demonstration (ASD) prepared in accordance with 40 CFR 257.94(e)(2) and successfully demonstrates that the SSIs are not due to a release from the CCR Unit to groundwater, but are due to the following:
- Natural groundwater geochemistry conditions such as pH, electrical conductivity (EC), oxidation-reduction potential (ORP) and the naturally occurrence of sulfide minerals;
- Natural variation in groundwater quality;
- Releases from historic fill or portions of the CADL closed before the effective date of the CCR Rule (October 19, 2015); and/or

- Surface water that has come into contact with on-site CCR and has migrated into the subsurface.

Therefore, based on the information provided in this ASD report, Entergy will continue to conduct semiannual detection monitoring for Appendix III constituents in accordance with 40 CFR 257.94 at the certified groundwater monitoring well system (Certified Monitoring Well Network) for the CCR Unit and will continue to implement improvements to stormwater management practices at the CADL.

Table of Contents

List of Figures

Section 1
Introduction

1.1 Background

Entergy Arkansas, LLC (Entergy) operates the Entergy White Bluff Plant (Plant), a coal-fired power plant, to generate electricity. The Plant is located at 1100 White Bluff Road in Redfield, Jefferson County, Arkansas as shown on Figure 1. Coal combustion residuals (CCR) are produced as part of the electrical generation operations. The Plant has been generating and disposing of CCR in a portion of the on-site coal ash disposal landfill (CADL) since it began operations in 1981. The CADL is a Class 3N non-commercial industrial landfill and operates under Arkansas Division of Environmental Quality (ADEQ) Solid Waste Permit No. 0199-S3N-R3.

The ADEQ-permitted CADL consists of approximately 153-acres at the Plant and encompasses the following three areas:

- Approximately 50-acre portion of the CADL historically used for CCR disposal from 1981 until prior to the effective date of the CCR Rule (October 19, 2015). CCR was placed into ravines. This area was closed in accordance with the Plant's original solid waste permit (TRC, 2018a);
- Cells 1 through 4, which are the current cells used for CCR disposal and were constructed on top of, and adjacent to, the above-noted closed CCR disposal areas prior to the effective date of the CCR Rule. Cells 1 through 4 encompass approximately 30 acres and were constructed as follows:
  - Cells 1, 2, and 3 were constructed with an 18-inch thick compacted clay bottom liner;
  - Cell 4 was constructed with a two-foot thick compacted clay bottom liner and a leachate collection system; and
- Approximately 100-acre portion of the CADL that is currently undeveloped and may be used for CCR and/or non-CCR disposal.

In addition to the current 153-acre permitted landfill, there is an approximately 25 acre area to the immediate west of Cells 1 through 4 where during the initial period of operation of the Plant, ash was placed pursuant to the permits issued at that time. This historic fill area is covered with soil and vegetated.

Cells 1 through 4 accept CCR for disposal in accordance with the federal *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule* (CCR

Rule), effective October 19, 2015, and subsequent Final Rules promulgated by the United States Environmental Protection Agency (USEPA). Cells 1 through 4 comprise the CCR management unit (CCR Unit) per the CCR Rule and are the focus of this ASD. The approximate limits of Cells 1 through 4, the closed disposal areas, and the undeveloped, future disposal areas within the ADEQ-permitted footprint of the CADL are shown in Figure 2.

Historical CCR management by Entergy has consisted of the following activities:

- Beneficial use in local construction projects;
- Beneficial use as roadbed material at the CADL; and
- Placement into the CADL.

1.1.1 Groundwater Monitoring and Statistical Analysis

In accordance with 40 CFR 257.90 through 257.94, Entergy installed a groundwater monitoring system for Cells 1 through 4 and has collected samples from the Certified Monitoring Well Network for laboratory analysis for CCR constituents and performed statistical analysis of the collected samples. Entergy installed a Certified Monitoring Well Network for the CCR Unit in accordance with 40 CFR 257.90 and 257.91. The Certified Monitoring Well Network consists of 23 wells installed into two stratigraphic units as follows:

- Eight wells are installed into an upper silty and clayey sand unit (Stratum I), which are designated as "S" monitoring wells; and
- Fifteen wells are installed into a lower silty and clayey sand and clay unit (Stratum III), which are designated as "D" monitoring wells.

Pursuant to 40 CFR 257.91(f), Entergy obtained certification by a qualified Arkansas-registered professional engineer (P.E.) stating that the Certified Monitoring Well Network has been designed and constructed to meet the requirements of 40 CFR 257.91 (see Groundwater Monitoring System Certification, TRC, February 26, 2018) of the CCR Rule (TRC 2018b).

As discussed above, Stratum I and Stratum III are currently being monitored pursuant to the CCR Rule. A groundwater sampling and analysis program including selection of statistical procedures to evaluate groundwater data was prepared per the CCR Rule (see Groundwater Sampling and Analysis Plan (FTN, 2017b)). Eight quarterly background CCR detection monitoring events were performed from October 2015 through June 2017 in accordance with 40 CFR 257.93(d) and 257.94(b). The eight quarterly detection monitoring background samples were analyzed for Appendix III to Part 257 – Constituents for Detection Monitoring and for Appendix IV to Part 257 – Constituents for Assessment Monitoring.

Following completion of quarterly background detection monitoring in June 2017, Entergy implemented semiannual detection monitoring per 40 CFR 257.94(b) for the CCR Unit. The first semiannual detection monitoring event was performed in August 2017 (2nd Half 2017). Subsequent detection monitoring events, with associated verification sampling when appropriate, have been performed on a semiannual basis since August 2017. Entergy performed the most recent semiannual detection monitoring event (1st Half 2022) in June 2022. Per the CCR Rule, the semiannual detection monitoring event samples were analyzed for Appendix III constituents.

After completion of each semiannual detection monitoring event, the Appendix III laboratory analytical data were statistically evaluated to identify potential SSIs for Appendix III constituents above background levels. In accordance with 40 CFR 257.93(f)(6), Entergy obtained certification by a qualified Arkansas-registered P.E. stating that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR Unit (see Statistical Methods Certification, TRC, October 16, 2017).

Pursuant to 40 CFR 257.93(h), statistical analysis and re-analysis of the laboratory analytical data were performed to identify potential SSIs for the 1st Half 2022 semiannual detection monitoring event. A total of 26 SSIs were identified for six Appendix III constituents: boron, calcium, chloride, fluoride, sulfate, and total dissolved solids (TDS). SSIs were identified in three Stratum I and eight Stratum III monitoring wells.

1.2 Purpose

Pursuant to 40 CFR 257.94(e)(2), Entergy may demonstrate that a source other than the CCR Unit caused the SSIs identified or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The purpose of this report is to provide written documentation of the successful ASD for the SSIs identified for the 1st Half 2022 semiannual detection monitoring event, pursuant to 40 CFR 257.94(e)(2) of the CCR Rule.

Section 2
Hydrogeology and Geochemistry

2.1 Site Hydrogeology

Historical subsurface investigations have identified the following three stratigraphic horizons of the Jackson Group (Kresse, et. al., 2014) and their associated hydrogeology for the CCR Unit and the CADL:

- **Stratum 1. Interbedded Clay, Silt, and Sand.**
  Stratum 1 ranges from approximately 10 to 54-feet thick and consists of interbedded silty sand (SM), clayey sand (SC), silts (ML and MH), and clay (CL and CH). Occasional deposits of carbonaceous material are present throughout Stratum 1. Based on the results of in-situ slug tests, hydraulic conductivity values range from 4.0 x 10^{-5} to 4.0 x 10^{-4} cm/sec;
- **Stratum 2. Clay.**
  Stratum 2 ranges from approximately 14 to 49-feet thick and consists of a very stiff clay (CH) with occasional silt and/or very fine-grained sand laminations. Occasional deposits of carbonaceous mater are present throughout Stratum 2. Based on the results of in-situ slug tests, hydraulic conductivity values range from 4.7 x 10^{-6} to 1.4 x 10^{-8} cm/sec;
- **Stratum 3. Clayey and Silty Sand.**
  Stratum 3 ranges from approximately 5 to 19-feet thick and consists primarily of clayey sand (SC) and/or silty sand (SM). A poorly graded, fine-grained sand (SM) was identified in one piezometer. The upper limits of Stratum 3 were encountered at elevations of 263 to 289-feet NGVD (depths ranging from 19 to 97-feet bgs). Based on results of in-situ slug tests, hydraulic conductivity was determined to be spatially variable and ranged from 4.2 x 10^{-7} to 2.5 x 10^{-4} cm/sec; and
- **Underlying Clay.**
  A clay unit underlies Stratum 3 and is described as a very dark grey clay that is highly laminated with light grey silt and very fined-grained sand. Based on results of an in-situ slug test, the vertical hydraulic conductivity was 3.7 x 10^{-8} cm/sec.

It was concluded that Stratum 1 was not laterally continuous across the approximately 153-acre landfill. The estimated calculated seepage velocities in Stratums 1 and 3 were as follows:

- Stratum 1: 2 to 20 feet/year; and
- Stratum 3: <1 to 10 feet/year.

While Stratum I and Stratum III have been monitored per the CCR Rule since October 2015, it is unclear whether Stratum I and Stratum III are aquifers that are capable of providing sustainable well yields consistent with USEPA aquifer use criteria (*e.g.*, 0.1 gallons per minute). This uncertainty is based on the following evidence:

- Stratum I is present to the west of the CADL and only present within the western portion of the ADEQ-permitted boundaries of the CADL, approximately corresponding to the boundaries of the closed portions of the CADL. The CCR Unit and Stratum I are not continuous to the east across the entire footprint of the CADL;
- In-situ hydraulic conductivities are low to very low for both Stratum I and Stratum III, indicating that sustainable well yields may not be obtainable from Stratum I and Stratum III at volumes that meet the minimum USEPA well use criteria (*e.g.*, 0.1 gallons per minute); and
- During the quarterly and semiannual detection monitoring events performed from October 2015 through June 2022, which have been performed using the low-flow purge and sample methodology, the sampling teams have consistently documented that turbidity values are often greater than 10 Nephelometric Turbidity Units (NTU). Furthermore, wells have been pumped dry during sampling for both Stratum I and Stratum III, indicating that neither sustainable well yields nor useable drinking water are associated with Stratum I and Stratum III.

To evaluate this uncertainty, Entergy began performing hydrogeologic investigations during 2019 and 2020, continuing through 2022 to evaluate both the stratigraphy and hydrogeology beneath the CCR Unit and to identify the aquifer(s) making up the uppermost aquifer system at the CCR Unit and CADL and the appropriateness of the current Certified Monitioring Well Network.

2.2 General Groundwater Quality

Regionally, groundwater quality in the Jackson Group consists of a sodium- and calcium-sulfate water type, with generally poor water quality (FTN 2014, Kresse et. al 2014). Reported water quality concentrations for select secondary drinking water contaminants compared to USEPA secondary maximum contaminant levels (MCLs) are provided in the table below.

Jackson Group Groundwater Water Quality

Constituent	Concentration Range		USEPA Secondary MCL
	Low	High	
Iron (mg/L)	0.05	19	0.3
pH (s.u.)	2.9	8.0	6.5 - 8.5
Sulfate (mg/L)	0.6	3,080	250
TDS (mg/L)	11	5,330	500

As noted in the table above, the natural range of groundwater quality within the Jackson Group, which includes both Stratum I and Stratum III, exceeds the secondary drinking water MCLs established by the USEPA for drinking water or, in the case of pH, is less than its secondary MCL. Finally, the results of historical groundwater monitoring at the Plant conducted from 1991 through 1996 showed that normal indicator parameters were masked by naturally elevated concentrations of the monitored constituents (FTN 2014, TRC 2018a).

2.3 Groundwater Geochemistry

Understanding the geochemistry of groundwater is essential to examining the groundwater monitoring data, explaining the relationships between the characteristics, and analyzing natural as well as anthropogenic impacts on groundwater systems. Source apart, geochemical processes play an important role in controlling the chemical composition of groundwater, including carbonate equilibrium, oxidation-reduction reactions and adsorption-desorption processes. Based the site geological conditions, several groundwater parameters are discussed as follows, including boron, fluoride, sulfate, calcium, and TDS.

2.3.1 Boron in Groundwater

Boron in normally considered as a minor constituent in groundwater as it is generally present in low concentrations (Palmucci & Rusi, 2014). Source apart, the primary origin of boron in groundwater is the process of sorption and desorption to the mineral surfaces including rocks and soils (Ravenscroft & McArthur, 2004). The regulatory guideline values of boron in drinking water are given at 0.5 mg/L by WHO and 0.9 mg/L by USEPA in human consumption for long-term exposure (WHO, 2008; USEPA, 2008). Boron is often cited as contamination tracer and usually occurs as a non-ionized form as H_3BO_3 in soils at pH<8.5, but above this pH, it exists as an anion, $B(OH)_4^-$ (Upadhyaya et al., 2014).

The factors that may influence the boron concentration in groundwater include weathering, human activity, evaporative concentration, ion-exchange, electrical conductivity (EC), and pH. Ravenscroft & McArthur (2004) studied the mechanism of regional boron enrichment groundwater and the results indicated that the main process caused high boron enriched in groundwater was the flushing by fresh groundwater other than geolofical setting, climate or age. The desorption of Boron from mineral surfaces could be affected by pH, ionic strength, salinity and HCO_3/CO_3. Decreasing of pH will increase the dissolution of boron from the mineral surfaces. Boron adsorption favors high pH and boron desorption favors low pH on rocks, soils and organic matters (Hollis et al., 1988; Keren & Communar, 2009; Tabelin et al., 2014).

A few more research studies confirmed that the presence of boron in groundwater depends on the EC (salinity), such that it increases with increasing EC. Halim et al. (2010) reported that the increasing of Cl^- concentration contributes to increase in EC value since a strong linear correlation ($R^2 = 0.88$) between EC and Cl^- was observed. Palmucci & Rusi (2014) observed a clear correlation between the high concentrations of boron and the chloride-sodium facies, which are characterized by high saline content, negative redox potential, and low value of the SO_4^{2-}/Cl^- ratio. Rodriguez-Espinosa et al. (2020) found that the Boron concentration in groundwater was related to the SO_4^{2-} and age affect.

Regarding to the Boron concentration level on the sites, the main source of Boron is more natural than anthropogenic. Therefore, the detected increasing of Boron concentration is likely due to the geochemistry condition changes, such as pH, ion exchanges, EC and salinity.

2.3.2 Fluoride in Groundwater

The common natural source of fluoride in groundwater is the dissolution of natural fluoride-bearing mineral, such as fluorspar, fluorapatite, amphiboles, hornblende, tremolite and biotite (Luo et al., 2018). The natural concentration of fluoride in groundwater depends on the geological, chemical and physical characteristics of the aquifer, the porosity and acidity of the soil and rocks, the surrounding temperature, the action of other chemical elements, depth of the aquifer and intensity of weathering (Brindha & Elango, 2011). Due to the concentration range of this site, geochemical process is the main factor controlling fluoride in groundwater.

Ion exchange, evaporation, adsorption-desorption, ion competition, mixing, salinization and anthropogenic pollution are geochemical processes that can take place and cause the occurrence of fluoride in groundwater (Luo et al., 2018). Main factors that might cause the increase of fluoride concentration in groundwater include alkaline pH, high concentration of sodium and bicarbonate, and low concentration of calcium.

Alkaline pH can increase the fluoride dissolution from mineral surfaces into groundwater. Saxena & Ahmed (2001) observed that alkaline conditions with pH ranging between 7.6 and 8.6 are favorable for dissolution of fluorite mineral from the host rocks.

Sodium bicarbonate type waters are typical of high fluoride waters. Many research studies have demonstrated positive correlations between fluoride and both bicarbonate and sodium as well as an inverse relation between fluoride and calcium. (Mondal et al., 2014; Guo et al., 2012; Chen et al., 2020). The chemical reactions for the dissolution of fluoride in the presence of high bicarbonate and sodium, and low calcium content is described as follows (Kimambo et al., 2019):

$$\mathrm{Na^+} + \ +\mathrm{HCO_3^-} - \rightarrow \mathrm{NaHCO_3}$$

$$\mathrm{CaF_2} + \ +2\mathrm{NaHCO_3} \ \rightarrow \mathrm{CaCO_3} + 2\mathrm{Na^+} + 2\mathrm{F^-} + \ \mathrm{H_2O} + \mathrm{CO_2}$$

Luo et al. (2018) reported that cation exchange can increase the fluoride concentration when increasing the Na/Ca molar ratio via ion complexation, and salt effect can further increase the fluoride dissolution from mineral surfaces.

In addition, evaporation is another potential reason to increase the fluoride concentration in shallow groundwater. Evaporation could directly remove water from shallow aquifers and elevate the fluoride concentration. Evaporation could increase ion concentrations, leading to the precipitation of some major minerals, reducing the calcium concentration, and favoring the dissolution of fluoride. Anthropogenic sources may also increase the fluoride in groundwater, such as pesticide and fertilizer use, and industrial waste discharge.

2.3.3 Sulfate in Groundwater

Sulfate is ubiquitous in groundwater, with both natural and anthropogenic sources. There are many potential sources of sulfate including mineral dissolution, atmospheric deposition, and other anthropogenic sources (mining, fertilizer, synthetic detergents, industrial wastewater etc.) (Miao et al., 2012). As water moves through soil and rock formations that contain sulfate minerals, some of the sulfate dissolves into the groundwater. Minerals that contain sulfate include magnesium sulfate (Epsom salt), sodium sulfate (Glauber's salt), and calcium sulfate (gypsum). Gypsum is an important contributor to the high levels of sulphate in many aquifers of the world. Higher levels of sulfate in groundwater are common in the western part of the United States (MDH, 2008).

Sulfate is mobile in soil and inputs to soil will impact groundwater eventually. Many research studies indicated that atmospheric deposition, dissolution of gypsum, oxidation of sulfide mineral and anthropogenic inputs will contribute to sulfate. Based on the geological condition of the site, atmospheric deposition and anthropogenic activities could be the main factors (Einsiedl & Mayer, 2005; Pu et al., 2012).

2.3.4 Calcium in Groundwater

Calcium is one of the most important ionic constituents in groundwater (Razowska-jaworek, 2014). Water-rock interaction occurs when water meets rocks or minerals, limestone, marble, calcite, dolomite, gypsum, fluorite and apatite. Natural dissolution of carbonate rocks and minerals is the primary source of calcium in groundwater (Jiang et al., 2009). Calcium is an important determinant of water hardness (Ca^{2+}), while magnesium is the other hardness determinant. The most common shallow groundwater type is Ca-HCO_3 dominated and Ca(Mg)-HCO_3 dominated.

A literature review indicates the major factors that may influence the calcium concentration in groundwater include rock weathering, pH, electrical conductivity and anthropogenic activities (mining, concrete material dissolution, fertilizer etc.) (Hájek et al., 2021; Schot & Wassen, 1993; Shi et al., 2018). Based on the geological condition of the site, pH, electrical conductivity and anthropogenic activities could be the potential reasons for the calcium SSI.

2.3.5 TDS in Groundwater

Total dissolved solids represent the combined total of inorganic and organic substances contained in the groundwater, and it can be a general indicator of water quality. These solids are primarily minerals, salts, and organic matters, which may originate from sources such as weathering of minerals, urban runoff, sewage, effluent discharges, agricultural, decaying organisms, and other human activities (de-icing roads, water softer use). Common salts that contribute to TDS are sodium, chloride, calcium, magnesium, potassium, sulfates, and bicarbonates (Olumuyiwa I. Ojo, 2012).

TDS levels in groundwater is usually higher than surface water due to the longer contact time with the underlying rocks and sediments. Since many minerals are water soluble, high concentrations can accumulate over time through the constantly reoccurring process of precipitation and evaporation.

TDS is related to other water quality parameters like hardness, which may occur if the high TDS content is due to the presence of carbonates. A few research studies simulated the relationship between TDS and other groundwater parameters such as EC and salinity, using different models. Due to the complicated geological conditions, the observation was not consistent at different study sites (Atekwana et al., 2004; Banadkooki et al., 2020; Poursaeid et al., 2020).

Section 3
Alternate Source Demonstration

Pursuant to 40 CFR 257.94(e)(2), Entergy may demonstrate that a source other than the CCR Unit caused the SSI or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. As discussed previously, the 1st Half 2022 semiannual detection monitoring event was performed in June 2022. Statistical analysis of the 1st Half 2022 semiannual detection monitoring data was performed pursuant to 40 CFR 257.93(f) and (g) and in accordance with the Statistical Methods Certification (TRC 2017b) and the Statistical Analysis Plan (FTN 2017a). Based on either increasing trends at 98% confidence levels using Sen's Slope test and/or intrawell prediction limits statistical analyses, the following 26 SSIs were identified:

- Calcium, fluoride, sulfate and TDS (MW-106S);
- Boron, sulfate and TDS (MW-110S);
- Boron, calcium, chloride, fluoride, sulfate and TDS (MW-111S);
- Calcium (MW-101D);
- TDS (MW-106D);
- TDS (MW-109D);
- Boron, calcium, chloride and TDS (MW-112D);
- Chloride (MW-113D);
- Calcium and TDS (MW-114D);
- Calcium (MW-115D); and
- Calcium and TDS (MW-118D).

Other Appendix III constituent concentrations were within their trends at 98% confidence levels using Sen's slope test and/or intrawell prediction limits in the CCR Rule groundwater monitoring system wells.

A discussion for each of the individual SSIs identified for the Stratum I and III wells and associated evidence demonstrating that the 25 SSIs were not caused by a release from the CCR Unit is provided in the subsections below.

3.1 Calcium at MW-106S

The potential SSIs identified at MW-106S (calcium, fluoride, sulfate, and TDS) are a result of the acidic geochemistry condition in groundwater, potential impact of CCR disposed at the CADL prior to October 19, 2015, or potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-106S. The following evidence supports this determination:

- Calcium was detected in MW-106S at a concentration of 30.0 mg/L in the June 2022 sample. As discussed in Section 2.3, pH and EC could affect calcium concentrations in groundwater. A low pH value of 4.01 was detected in the June 2022 sample and the historical data review shows pH in MW-106S stays in a steady range of 3.6 – 4.5, which indicates the groundwater in this area is acidic and it was related to pre-CCR Rule disposal source or natural geochemistry conditions. The acidic groundwater condition favors the dissolution of calcium from soil and mineral surfaces to water phase. The significant increasing trend of calcium from 16 mg/L in 2015 to 30 mg/L in 2022 could be a result of the acidic geochemistry condition. The increasing cation and anion concentrations will also lead to the increasing EC, which will affect other metals dissolution.
- The concentrations of calcium in MW-101S, which is a background well, have varied from 14 to 98.5 mg/L during the overall time period of CCR detection monitoring. The calcium concentration of 98.5 mg/L for MW-101S is greater than the calcium concentration of 30.0 mg/L measured at MW-106S during the 1st Half 2022 semiannual detection monitoring event. Therefore, the calcium concentration measured at MW-106S is within the range of natural variation in background groundwater quality.
- Based on review of potentiometric surface mapping, locations of closed portions of the CADL underlying the CCR Unit, and the CCR Unit relative to MW-106S, it appears that MW-106S may monitor groundwater associated with the underlying pre-CCR Rule closed portions of the CADL rather than the CCR Unit; therefore, concentrations measured in MW-106S are likely more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-106S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-106S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-106S, it appears likely that surface water infiltration may have impacted the MW-106S monitoring results.

3.2 Fluoride at MW-106S

The Fluoride SSI identified at MW-106S is a result of potential favorable geochemistry condition in groundwater, potential impact of CCR disposed at the CADL prior to October 19, 2015, and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-106S. The following evidence supports this determination:

- Fluoride was detected in MW-106S at a concentration of 0.661 mg/L in the June 2022 sample, which was consistent with 0.681 mg/L in the Decmber 2021 sample. This concentration exceeded the intrawell prediction limit of 0.545 mg/L and the maximum fluoride concentrations of 0.1 to 0.135 mg/L measured in the three Stratum I background monitoring wells (MW-101S, MW-102S, and MW-104S). However, it should be noted that the measured fluoride concentrations are less than the federal primary drinking water maximum contaminant level (MCL) standard of 4.0 mg/L.

- The fluoride concentration in MW-106S stayed in a narrow range of 0.6-0.68 mg/L in the past two years. pH of the groundwater is not an impact of the exceedance since fluoride dissolution favors alkaline pH. As discussed in Section 2.3, fluoride has positive correlation with both bicarbonate and sodium, and an inverse relation with calcium. With the increasing trend of calcium in the groundwater, ion exchange process with high sodium and bicarbonate can result in the increasing of fluoride in groundwater.

- Based on review of potentiometric surface mapping, locations of closed portions of the CADL underlying the CCR Unit, and the CCR Unit relative to MW-106S, it appears that MW-106S may monitor groundwater associated with the underlying pre-CCR Rule closed portions of the CADL rather than the CCR Unit; therefore, concentrations measured in MW-106S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-106S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-106S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-106S, it appears likely that surface water infiltration may have impacted the MW-106S monitoring results.

3.3 Sulfate at MW-106S

The sulfate SSI identified at MW-106S is a result of natural geochemistry condition in soil and groundwater, potential impact of CCR disposed at the CADL prior to October 19, 2015, and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-106S. The following evidence supports this determination:

- Sulfate was detected in MW-106S at a concentration of 633 mg/L in the June 2022 sample, which exceeded the intrawell prediction limit of 538 mg/L. It could be caused by the acidic geochemistry condition discussed above or an anthropogenic source since sulfate is mobile in soils and can get into groundwater via surface water infiltration. Another potential reseaon is the natural occurrence of sulfide minerals in the soil, such as pyrite. The oxidation of sulfide minerals will slowly release sulfate and hydrogen ion into groundwater, which will lead to the increasing of sulfate and decreasing of pH.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-106S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-106S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-106S, it appears likely that surface water infiltration may have impacted the MW-106S monitoring results.
- Based on review of potentiometric surface mapping and locations of closed portions of the CADL, and the CCR Unit relative to MW-106S, MW-106S may monitor groundwater associated with the pre-CCR Rule closed portions of the CADL rather than the CCR unit; therefore, concentrations measured in MW-106S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

3.4 TDS at MW-106S

The TDS SSI identified at MW-106S is a result of the acidic groundwater geochemistry condition, sodium sulfate source, potential impact of CCR disposed at the CADL prior to October 19, 2015, and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-106S. The following evidence supports this determination:

- TDS was detected in MW-106S at a concentration of 920 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 765.5 mg/L and the maximum TDS concentrations (196 mg/L to 421 mg/L) detected in the three Stratum I background wells (MW-101S, MW-102S, and MW-104S). As discussed in Section 2.2, the Jackson Group groundwater is sodium- and calcium-sulfate water type. Sodium could be another main contribution to the TDS exceedance with calcium and sulfate. High sodium concentration can also cause the fluoride exceedance. The acidic groundwater could be one of the potential reasons. An alternate source containing sodium sulfate should also be considered, which can be mineral dissolution, surface water flux or atmospheric deposition.

- Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-106S, MW-106S may monitor groundwater associated with the pre-CCR Rule closed portions of the CADL rather than the CCR Unit. Therefore, concentrations measured in MW-106S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-106S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-106S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-106S, it appears likely that surface water infiltration may be impacting the MW-106S monitoring results.

3.5 Boron at MW-110S

The Boron SSI identified at MW-110S is a result of the acidic groundwater geochemistry condition and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- Boron was detected in MW-110S at a concentration of 2.03 mg/L in the June 2022 sample, which exceeded the intrawell prediction limit of 1.299 mg/L. As discussed in Section 2.3, the main factors that may influence boron concentration in groundwater are pH and EC. Decreasing of pH will increase the dissolution of boron from the mineral surfaces. Boron in groundwater will increase with the increasing of EC. The historical data review shows the relatively low salts concentrations in MW-110S area, which indicates EC is not the factor causing the boron increasing trend. A low pH value of 5.49 was detected in the June 2022 sample. The acidic groundwater condition favors the boron dissolution from soil and mineral surface. Based on the consistent boron levels in groundwater, the significant increasing trend of boron is more likely relative to the acidic geochemistry condition other than a contamination source.
- Based on review of potentiometric surface mapping, locations of historic fill, locations of closed portions of the CADL underlying the CCR Unit, and the CCR Unit relative to MW-110S, it appears that MW-110S may monitor groundwater associated with the underlying pre-CCR Rule closed portions of the CADL rather than the CCR Unit; therefore,

concentrations measured in MW-110S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

3.6 Sulfate at MW-110S

The sulfate SSI identified at MW-110S is a result of natural geochemistry condition in soil and groundwater, potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- Sulfate was detected in MW-110S at a concentration of 244 mg/L in the June 2022 sample, which exceeded the intrawell prediction limit of 211.3 mg/L. It could be caused by the acidic geochemistry condition discussed above or an anthropogenic source since sulfate is mobile in soils and can get into groundwater via surface water infiltration. Another potential reseaon is the natural occurrence of sulfide minerals in the soil, such as pyrite. The oxidation of sulfide minerals will slowly release sulfate and hydrogen ion into groundwater, which will lead to the increasing of sulfate and decreasing of pH.
- Based on review of potentiometric surface mapping, locations of historic fill, locations of closed portions of the CADL underlying the CCR Unit, and the CCR Unit relative to MW-110S, it appears that MW-110S may monitor groundwater associated with the underlying pre-CCR Rule closed portions of the CADL rather than the CCR Unit; therefore, concentrations measured in MW-110S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

3.7 TDS at MW-110S

The TDS SSI identified at MW-110S is a result of the acidic groundwater geochemistry condition, sodium sulfate source, potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- TDS was detected in MW-110S at a concentration of 466 mg/L in the June 2022 sample, which exceeded the intrawell prediction limit of 429.9 mg/L and the maximum TDS concentrations (196 mg/L to 421 mg/L) detected in the three Stratum I background wells (MW-101S, MW-102S, and MW-104S). As discussed in Section 2.2, the Jackson Group groundwater is sodium- and calcium-sulfate water type. Sodium could be another main contribution to the TDS exceedance with calcium and sulfate. High sodium concentration can also cause the fluoride exceedance. The acidic groundwater could be one of the potential reasons. An alternate source containing sodium sulfate should also be considered, which can be mineral dissolution, surface water flux or atmospheric deposition.
- Based on review of potentiometric surface mapping, locations of historic fill, locations of closed portions of the CADL underlying the CCR Unit, and the CCR Unit relative to MW-110S, it appears that MW-110S may monitor groundwater associated with the underlying pre-CCR Rule closed portions of the CADL rather than the CCR Unit; therefore,

concentrations measured in MW-110S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

3.8 Boron at MW-111S

The boron SSI identified at MW-111S is a result of natural groundwater geochemistry conditions with low pH and high EC, potential impact of CCR disposed at the CADL prior to October 19, 2015, and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-111S. The following evidence supports this determination:

- Boron was detected in MW-111S at a concentration of 5.39 mg/L in the June 2022 sample, which exceeded the intrawell prediction limit of 4.209 mg/L. As discussed in Section 2.3, the main factors that may influence boron concentration in groundwater are pH and EC. Decreasing of pH will increase the dissolution of boron from the mineral surfaces. Boron in groundwater will increase with the increasing of EC. A low pH value of 4.05 was detected in the June 2022 sample and the pH of groundwater in the area of MW-111S stayed in a steady range of 3.6 to 4.5 in the past five years. The acidic groundwater condition favors the boron dissolution from soil and mineral surface. The increasing of calcium, sulfate and TDS in MW-111S demonstrates that the groundwater in this area has relatively high EC, which will cause the increasing of boron concentration in groundwater. Based on the consistent boron levels, the significant increasing trend of boron is more likely relative to the geochemistry conditions with low pH and high EC other than a contamination source.
- Based on review of potentiometric surface mapping and locations of closed portions of the CADL, and the CCR Unit relative to MW-111S, MW-111S may monitor groundwater associated with the pre-CCR Rule closed portions of the CADL rather than the CCR Unit. Therefore, concentrations measured in MW-111S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-111S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-111S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-111S, it appears likely that surface water infiltration may be impacting the MW-111S monitoring results.

3.9 Calcium at MW-111S

The calcium SSI identified at MW-111S is a result of natural groundwater geochemistry conditions with low pH and high EC, potential impact of CCR disposed at the CADL prior to October 19, 2015, and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-111S. The following evidence supports this determination:

- Calcium was detected in MW-111S at a concentration of 115 mg/L in the June 2022 sample, which exceeded the intrawell prediction limit of 34.76 mg/L. As discussed in Section 2.3, pH and EC could affect calcium concentrations in groundwater. A low pH value of 3.76 was detected in the December 2021 sample and the pH of groundwater in the area of MW-111S stayed in a steady range of 3.6 to 4.5 in the past five years. The acidic condition favors the dissolution of calcium from soil and mineral surfaces to water phase. The relatively high EC in groundwater discussed above can also increase the calcium concentration. The significant increasing trend of calcium could be a result of the natural geochemistry conditions with low pH and high EC.
- Background concentrations of calcium have varied from 14 to 98.5 mg/L at upgradient monitoring well MW-101S. The calcium concentration of 115 mg/L at MW-110S during the 1st Half 2022 semiannual detection monitoring event is beyond but close to the top background concnetration. Therefore, the calcium exceedance is still in the range of natural variation in background groundwater quality.
- Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-111S, MW-111S may monitor groundwater associated with the underlying pre-CCR Rule closed portions of the CADL rather than the CCR Unit. Therefore, concentrations measured in MW-111S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-111S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-111S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy’s NPDES permit. Based on the close proximity of this surface water to MW-111S, it appears likely that surface water infiltration may have impacted the MW-111S monitoring results.

3.10 Chloride at MW-111S

The chloride SSI identified at MW-111S is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- Chloride was detected in MW-111S at a concentration of 10.3 mg/L in the June 2022 sample. Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-111S, MW-111S may monitor groundwater associated with the underlying pre-CCR Rule closed portions of the CADL rather than the CCR Unit. Therefore, concentrations measured in MW-111S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-111S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-111S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-111S, it appears likely that surface water infiltration may have impacted the MW-111S monitoring results.

3.11 Fluoride at MW-111S

The fluoride SSI identified at MW-111S is a result of natural groundwater geochemistry conditions, potential impact of CCR disposed at the CADL prior to October 19, 2015 and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-111S. The following evidence supports this determination:

- Fluoride was detected in MW-111S at a concentration of 0.748 mg/L in the June 2022 sample, which exceeded the intrawell prediction limit of 0.2466 mg/L and the maximum fluoride concentrations of 0.1 to 0.135 mg/L measured in the three Stratum I background monitoring wells (MW-101S, MW-102S, and MW-104S). However, it should be noted that the measured fluoride concentrations are less than the federal primary drinking water MCL of 4.0 mg/L. pH of the groundwater is not an impact of the exceedance since fluoride dissoluction favors alkaline pH. As discussed in Section 2.3, fluoride has positive correlation with both bicarbonate and sodium, and an inverse relation with calcium. With the increasing trend of calcium in the groundwater, ion exchange process with high sodium and bicarbonate can result in the increasing of fluoride in groundwater. The fluoride increasing trend could also be a result of continouse dissoved salts from the soils and minerals associated with the increased TDS.

- Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-111S, MW-111S may monitor groundwater associated with the pre-CCR Rule closed portions of the CADL rather than the CCR Unit. Therefore, concentrations measured in MW-111S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-111S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-111S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-111S, it appears likely that surface water infiltration may have impacted the MW-111S monitoring results.

3.12 Sulfate at MW-111S

The sulfate SSI identified at MW-111S is a result of natural groundwater geochemistry condition of low pH and potential oxidation of sulfide minerals, potential impact of CCR disposed at the CADL prior to October 19, 2015, and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-111S. The following evidence supports this determination:

- Sulfate was detected in MW-111S at a concentration of 804 mg/L in the June 2021 s2mple, which exceeded the intrawell prediction limit of 348 mg/L. It could be caused by the acidic geochemistry condition discussed above or an anthropogenic source since sulfate is soluble in soils and can get into groundwater via surface water infiltration. Another potential reseaon is the naturally occurrence of sulfide minerals in the soil, such as pyrite. The oxidation of sulfide minerals will slowly release sulfate and hydrogen ion into groundwater, which will lead to the increasing of sulfate and decreasing of pH. To further investigate this hypothesis, the analysis of ORP is recommended for MW-111S in the next sampling event.
- Based on review of potentiometric surface mapping and locations of closed portions of the CADL, and the CCR Unit relative to MW-111S, MW-111S may monitor groundwater associated with the pre-CCR Rule closed portions of the CADL rather than the CCR Unit; therefore, concentrations measured in MW-111S may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within

the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-111S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-111S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-111S, it appears likely that surface water infiltration may have impacted the MW-111S monitoring results.

3.13 TDS at MW-111S

The TDS SSI identified at MW-111S is a result of the acidic groundwater geochemistry conditions with natural occurrence of sulfide minerals, sodium sulfate source, the potential impact of CCR disposed at the CADL prior to October 19, 2015 and potential infiltration of surface water impacted by on-site CCR into the subsurface in the area of MW-111S. The following evidence supports this determination:

- TDS was detected in MW-111S at a concentration of 1230 mg/L in the December 2021 sample, which exceeded the intrawell prediction limit of 765.5 mg/L and the maximum TDS concentrations (196 mg/L to 421 mg/L) detected in the three Stratum I background wells (MW-101S, MW-102S, and MW-104S). As discussed in Section 2.2, the Jackson Group groundwater is sodium- and calcium-sulfate water type. Sodium could be another main contribution to the TDS exceedance with the increasing of calcium and sulfate. High sodium concentration can also cause the fluoride exceedance. The acidic groundwater could be one of the potential reasons. An alternate source containing sodium sulfate should also be considered, which can be mineral dissolution, surface water flux or atmospheric deposition.
- Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-111S, MW-111S may monitor groundwater associated with the pre-CCR Rule closed portions of the CADL rather than the CCR Unit. Therefore, concentrations measured in MW-111S may be more reflective of pre-CCR Rule disposal rather than of the Unit.
- Surface water that has come into contact with on-site CCR at the CCR Unit has migrated from the perimeter drainage swale for the CCR Unit due to periodic build-up of sediment within the perimeter surface water swale. When this build-up occurs, surface water flows out of the swale and over the adjoining access road and then to the area of MW-111S. This drainage swale carries surface water runoff from closed portions of the CADL as well as from the CCR Unit. This surface water ultimately migrates from the MW-111S area via surface water swales within the ADEQ-permitted CADL footprint, with ultimate discharge into the site surge pond as per Entergy's NPDES permit. Based on the close proximity of this surface water to MW-111S, it appears likely that surface water infiltration may have impacted the MW-111S monitoring results.

3.14 Calcium at MW-101D

The calcium SSI identified at MW-101D is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- Calcium was detected in MW-101D at a concentration of 50.8 mg/L in the June 2022 sample, which was consistent with 56.3 mg/L in the December 2021 sample. This concentration exceeded the intrawell prediction limit of 48.1 mg/L. Calcium concentrations measured at MW-118D have ranged from 68.4 to 83.2 mg/L. MW-118D likely represents background groundwater quality for Stratum III, since it is located approximately 1,650 feet to the east of the CCR Unit. Therefore, the calcium exceedance at MW-101D appears to be within the range of variation in background groundwater quality.
- Based on review of potentiometric surface mapping, locations of historic fill, locations of closed portions of the CADL, and the CCR Unit relative to MW-101D, MW-101D is located approximately 325 feet to historic fill areas, but approximately 850 feet from the CCR Unit. Therefore, the concentrations of calcium measured in MW-101D may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

3.15 TDS at MW-106D

The TDS SSI identified at MW-106D is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- TDS was detected in MW-106D at a concentration of 531 mg/L in the June 2022 sample, which exceeded the intrawell prediction limit of 379.5 mg/L. concentrations measured at MW-118D (background well for Stratum III) have ranged from 415 to 585 mg/L. Therefore, the TDS exceedance at MW-106D is within the range of variation in background groundwater quality and is not a potential environmental concern.
- Based on review of potentiometric surface mapping, locations of historic fill, locations of closed portions of the CADL, and the CCR Unit relative to MW-106D, MW-106D is located immediately adjacent (approximately 25 feet) to historic fill. Therefore, the concentrations of TDS measured in MW-106D may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

3.16 TDS at MW-109D

The TDS SSI identified at MW-109D is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- TDS was detected in MW-109D at a concentration of 559 mg/L in the June 2022 sample, which exceeded the intrawell prediction limit of 423 mg/L. TDS concentrations measured at MW-118D (background well for Stratum III) have ranged from 415 to 585 mg/L. Therefore, the TDS exceedance at MW-109D is within the range of variation in background groundwater quality and is not a potential environmental concern.
- Based on review of potentiometric surface mapping, locations of historic fill, locations of closed portions of the CADL, and the CCR Unit relative to MW-109D, MW-109D is located immediately adjacent (approximately 25 feet) to historic fill, but approximately 1,000 feet from the CCR Unit. Therefore, the concentrations of TDS measured in MW-109D may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- As discussed previously, groundwater flow velocities are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-109D is located approximately 1000 feet from the CCR unit, any release from the CCR Unit would be detected in Stratum III at MW-109D within approximately 100 years, which is significantly longer than the CCR Unit has been in operation. Therefore, the concentration of TDS at MW-109D likely represents either potential pre-CCR Rule migration from the historic fill or background groundwater quality for Stratum III.

3.17 Boron at MW-112D

The boron SSI identified at MW-112D is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- Boron was detected in MW-112D at a concentration of 0.278 mg/L in the June 2022 sample, which was consistent with 0.27 mg/L in the December 2021 sample. This concentration exceeds the intrawell prediction limit of 0.236 mg/L. Boron concentrations measured at MW-118D (background well for Stratum III) have ranged from 0.274 to 0.355 mg/L. Therefore, the boron exceedance at MW-112D is within the range of variation in background groundwater quality and is not a potential environmental concern.
- Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-112D, MW-112D is located immediately adjacent (approximately 25 feet) to historic fill, but approximately 950 feet from the CCR Unit.

Therefore, the concentrations of boron measured in MW-112D may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

- Groundwater flow velocities are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-112D is located approximately 950 feet from the CCR unit, any release from the CCR Unit would be detected in Stratum III at MW-112D within approximately 95 years, which is significantly longer than the CCR Unit has been in operation. Therefore, the concentration of boron at MW-112D likely represents either potential pre-CCR Rule migration from historic fill or background groundwater quality for Stratum III.

3.18 Calcium at MW-112D

The calcium SSI identified at MW-112D is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- Calcium was detected in MW-112D at a concentration of 30.0 mg/L in the June 2022 sample, which was consistent with 35.4 mg/L in the December 2021 sample. This concentration exceeds the intrawell prediction limit of 19.2 mg/L. A pH value of 8.15 was detected at in the June 2022 sample and the historical data review shows MW-112D area has a netural pH condition in groundwater. The relatively low TDS indicated that EC in groundwater is not a factor to the calcium exceedance. Calcium concentrations measured at MW-118D (background well for Stratum III) have ranged from 68.4 to 83.2 mg/L. Therefore, the calcium exceedance at MW-101D is within the range of variation in background groundwater quality and is not a potential environmental concern.
- Based on review of potentiometric surface mapping, locations of historic fill, locations of closed portions of the CADL, and the CCR Unit relative to MW-112D, MW-112D is located immediately adjacent (approximately 25 feet) to historic fill, but approximately 950 feet from the CCR Unit. Therefore, the concentrations of calcium measured in MW-112D may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- As discussed previously, groundwater flow velocities are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-112D is located approximately 950 feet from the CCR Unit, any release from the CCR Unit would be detected in Stratum III at MW-112D within approximately 95 years, which is significantly longer than the CCR Unit has been in operation. Therefore, the concentration of calcium at MW-112D likely represents either potential pre-CCR Rule migration from historic fill or background groundwater quality for Stratum III.

3.19 Chloride at MW-112D

The chloride SSI identified at MW-112D is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- Chloride was detected in MW-112D at a concentration of 6.49 mg/L in the June 2022 sample. This concentration exceeds the intrawell prediction limit of 4.645 mg/L. Based on review of potentiometric surface mapping, locations of historic fill, locations of closed portions of the CADL, and the CCR Unit relative to MW-112D, MW-112D is located immediately adjacent (approximately 25 feet) to historic fill, but approximately 950 feet from the CCR Unit. Therefore, the concentrations of chloride measured in MW-112D may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

  As discussed previously, groundwater flow velocities are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-112D is located approximately 950 feet from the CCR Unit, any release from the CCR Unit would be detected in Stratum III at MW-112D within approximately 95 years, which is significantly longer than the CCR Unit has been in operation. Therefore, the concentration of chloride at MW-112D likely represents either potential pre-CCR Rule migration from historic fill or background groundwater quality for Stratum III.

3.20 TDS at MW-112D

The TDS SSI identified at MW-112D is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- TDS was detected in MW-112D at a concentration of 270 mg/L in the June 2022 sample, which exceeded the intrawell prediction limit of 187.6 mg/L. TDS concentrations measured at MW-118D (background well for Stratum III) have ranged from 415 to 585 mg/L. A review of groundwater parameters in Stratum III indicates that sulfate is a great contributor to TDS and the sulfte concentration at MW-112D is very low (less than 4 mg/L). It could be a result of the lack of sulfide minerals in soil. Therefore, the TDS exceedance at MW-112D is within the range of variation in background groundwater quality and is not a potential environmental concern.
- Based on review of potentiometric surface mapping, locations of historic fill, locations of closed portions of the CADL, and the CCR Unit relative to MW-112D, MW-112D is located immediately adjacent (approximately 25 feet) to historic fill, but approximately 950 feet from the CCR Unit. Therefore, the concentrations of TDS measured in MW-112D may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.

- As discussed previously, groundwater flow velocities are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-112D is located approximately 950 feet from the CCR unit, any release from the CCR Unit would be detected in Stratum III at MW-112D within approximately 95 years, which is significantly longer than the CCR Unit has been in operation. Therefore, the concentration of TDS at MW-112D likely represents either potential pre-CCR Rule migration from the historic fill or background groundwater quality for Stratum III.

3.21 Chloride at MW-113D

The chloride SSI identified at MW-113D is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- Chloride was detected in MW-113D at a concentration of 14.4 mg/L in the June 2022 sample. This concentration exceeds the intrawell prediction limit of 13.9 mg/L. Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-113D, MW-113D is located approximately 20 feet from closed portions of the CADL, but approximately 800 feet from the CCR Unit. Therefore, the concentrations of chloride measured in MW-113D may be more reflective of pre-CCR Rule disposal rather than of the CCR Unit.
- As discussed previously, groundwater flow velocities are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-113D is located approximately 800 feet from pre-CCR rule closed portions of the CADL, any release from the CCR Unit would be detected in Stratum III at MW-113D within approximately 80 years, which is significantly longer than the CCR Unit has been in operation. Therefore, the concentration of chloride at MW-113D likely represents either potential pre-CCR Rule migration from the closed portions of the CADL or background groundwater quality for Stratum III.

3.22 Calcium at MW-114D

The calcium SSI identified at MW-114D is a result of natural variation in groundwater quality. The following evidence supports this determination:

- Calcium was detected in MW-114D at a concentration of 53.1 mg/L in the June 2022 sample, which was consistent with 53.4 mg/L in the December 2021 sample. This concentration exceeds the intrawell prediction limit of 48.9 mg/L. A pH value of 8 was detected at in the June 2022 sample and the historical data review shows MW-114D area has a netural pH condition in groundwater. Calcium concentrations measured at MW-118D (background well for Stratum III) have ranged from 68.4 to 83.2 mg/L. Therefore, the calcium exceedance at

MW-114D is within the range of variation in background groundwater quality and is not a potential environmental concern.

- Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-114D, MW-114D is located 950 feet from the CCR Unit. Therefore, the concentrations of calcium measured in MW-114D may be more reflective of background natural water quality rather than of the CCR Unit.
- As discussed previously, groundwater flow velocities in Stratum III are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-114D is located approximately 950 feet from the CCR Unit, any release from the pre-CCR Rule closed portions of the CADL or the CCR Unit would be detected in Stratum III at MW-114D within approximately 95 years, which is significantly longer than either the CADL or the CCR Unit has been in operation. Therefore, the concentration of calcium at MW-114D likely represents background natural groundwater quality for Stratum III.

3.23 TDS at MW-114D

The calcium SSI identified at MW-114D is a result of natural variation in groundwater quality. The following evidence supports this determination:

- TDS was detected in MW-114D at a concentration of 319 mg/L in the June 2022 sample. This concentration exceeds the intrawell prediction limit of 309.8 mg/L. TDS concentrations measured at MW-118D (background well for Stratum III) have ranged from 415 to 585 mg/L. Therefore, the TDS exceedance at MW-114D is within the range of variation in background groundwater quality and is not a potential environmental concern.
- Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-114D, MW-114D is located 950 feet from the CCR Unit. Therefore, the concentrations of TDS measured in MW-114D may be more reflective of background natural water quality rather than of the CCR Unit.
- As discussed previously, groundwater flow velocities in Stratum III are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-114D is located approximately 950 feet from the CCR Unit, any release from the pre-CCR Rule closed portions of the CADL or the CCR Unit would be detected in Stratum III at MW-114D within approximately 95 years, which is significantly longer than either the CADL or the CCR Unit has been in operation. Therefore, the concentration of TDS at MW-114D likely represents background natural groundwater quality for Stratum III.

3.24 Calcium at MW-115D

The calcium SSI identified at MW-115D is a result of natural variation in groundwater quality and potential impact of CCR disposed at the CADL prior to October 19, 2015. The following evidence supports this determination:

- Calcium was detected in MW-115D at a concentration of 43.6 mg/L in the June 2022 sample. This concentration exceeds the intrawell prediction limit of 42.9 mg/L. Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-115D, MW-115D is located 850 feet from pre-CCR Rule closed portions of the CADL and 1,450 feet from the CCR Unit. Therefore, the concentrations of calcium measured in MW-115D may be more reflective of background natural water quality rather than of the CCR Unit.
- The concentrations of calcium measured at MW-118D have ranged from 68.4 to 103 mg/L, which are greater than the concentration of calcium of 43.6 mg/L measured at MW-115D in June 2022. As discussed previously, MW-118D likely represents background groundwater quality for Stratum III, since it is located approximately 1,650 feet to the east of the CCR Unit. Therefore, the calcium concentration measured at MW-115D appears to be within the range of variation in background groundwater quality.
- As discussed previously, groundwater flow velocities in Stratum III are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-115D is located approximately 850 feet from pre-CCR Rule closed portions of the CADL and approximately 1,450 feet from the CCR Unit, any release from the pre-CCR Rule closed portions of the CADL or the CCR Unit would be detected in Stratum III at MW-115D within approximately 85 to 145 years, which is significantly longer than either the CADL or the CCR Unit has been in operation. Therefore, the concentration of calcium at MW-115D likely represents background natural groundwater quality for Stratum III.

3.25 Calcium at MW-118D

The calcium SSI identified at MW-118D is a result of natural groundwater geochemistry conditions with high EC. The following evidence supports this determination:

- Calcium was detected in MW-118D at a concentration of 91.2 mg/L in the June 2022 sample, which exceeded the intrawell prediction limit of 86.24 mg/L.. The netural pH range of 6.7 to 7.4 at MW-118D indicates that pH of groundwater is not a factor to the calcium exceedance. The increasing sulfate and TDS concentrations can lead to the increasing EC in groundwater, which favors calcium dissolution and thus increases the calcium concentration in groundwater. Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-118D, MW-118D is located 1,650 feet east of the CCR Unit. Therefore, the calcium exceedance detected in MW-118D is more likey relative to the geochemistry conditions with increasing EC rather than to the CCR Unit.

- As discussed previously, groundwater flow velocities in Stratum III are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-118D is located approximately 1,650 feet from the CCR Unit, any release from the CCR Unit would be detected in Stratum III at MW-118D within approximately 165 years, which is significantly longer than either the the CCR Unit has been in operation. Therefore, the concentration of calcium at MW-118D likely represents background natural groundwater quality for Stratum III.

3.26 TDS at MW-118D

The TDS SSI identified at MW-118D is a result of natural groundwater geochemistry conditions. The following evidence supports this determination:

- TDS was detected in MW-118D at a concentration of 585 mg/L in the June 2022 sample. This concentration exceeds the intrawell prediction limit of 516.2 mg/L. Based on review of potentiometric surface mapping, locations of closed portions of the CADL, and the CCR Unit relative to MW-118D, MW-118D is located 1,650 feet east of the CCR Unit. Therefore, the concentrations of TDS measured in MW-118D may be more reflective of background natural water quality rather than of the CCR Unit.
- As discussed previously, groundwater flow velocities in Stratum III are estimated to be approximately <1 ft/year to 10 ft/year (TRC 2018a). Since, MW-118D is located approximately 1,650 feet from the CCR Unit, any release from the CCR Unit would be detected in Stratum III at MW-118D within approximately 165 years, which is significantly longer than either the the CCR Unit has been in operation. Therefore, the concentration of TDS at MW-118D likely represents background natural groundwater quality for Stratum III.

Section 4
Conclusions

The information provided in this report serves as the ASD prepared in accordance with 40 CFR 257.94(e)(2) of the CCR Rule. Statistical evaluation identified 26 potential SSIs in three monitoring wells in Stratums I and eight monitoring wells in Strartums III. This ASD has demonstrated the following lines of reasoning that support alternative sources for the identified SSIs:

- Low pH detected in Stratums I indicated the acidic groundwater geochemistry conditions in MW-106S, MW-110S and MW111-S. The 11 SSIs identified in Strartums I are related to the naurtal groundwater geochemistry conditions, such as low pH, high electrical conductivity, potential presence of sulfide minerals in soils and relatively high oxidation-reduction potential.
- The SSIs identified in Stratums III are mostly within the natural variation in groundwater quality compared to MW-118D, which likely represents background natural groundwater quality for Stratum III due to its location to CCR Unit and groundwater flow velocities.
- Releases from historic fill or portions of the CADL closed before the effective date of the CCR Rule (October 19, 2015); and/or
- Surface water that has come into contact with on-site CCR and has migrated into the subsurface.

Therefore, the SSIs determined based on statistical analysis of the 1st Half 2022 semiannual detection monitoring event performed in June of 2022 are not due to a release from the CCR Unit to Stratums I and III of the Jackson Group.Based on the information provided in this ASD report, Entergy will continue to conduct semiannual detection monitoring in accordance with 40 CFR 257.94 at the Certified Monitoring Well Network for the CCR Unit.

Section 5
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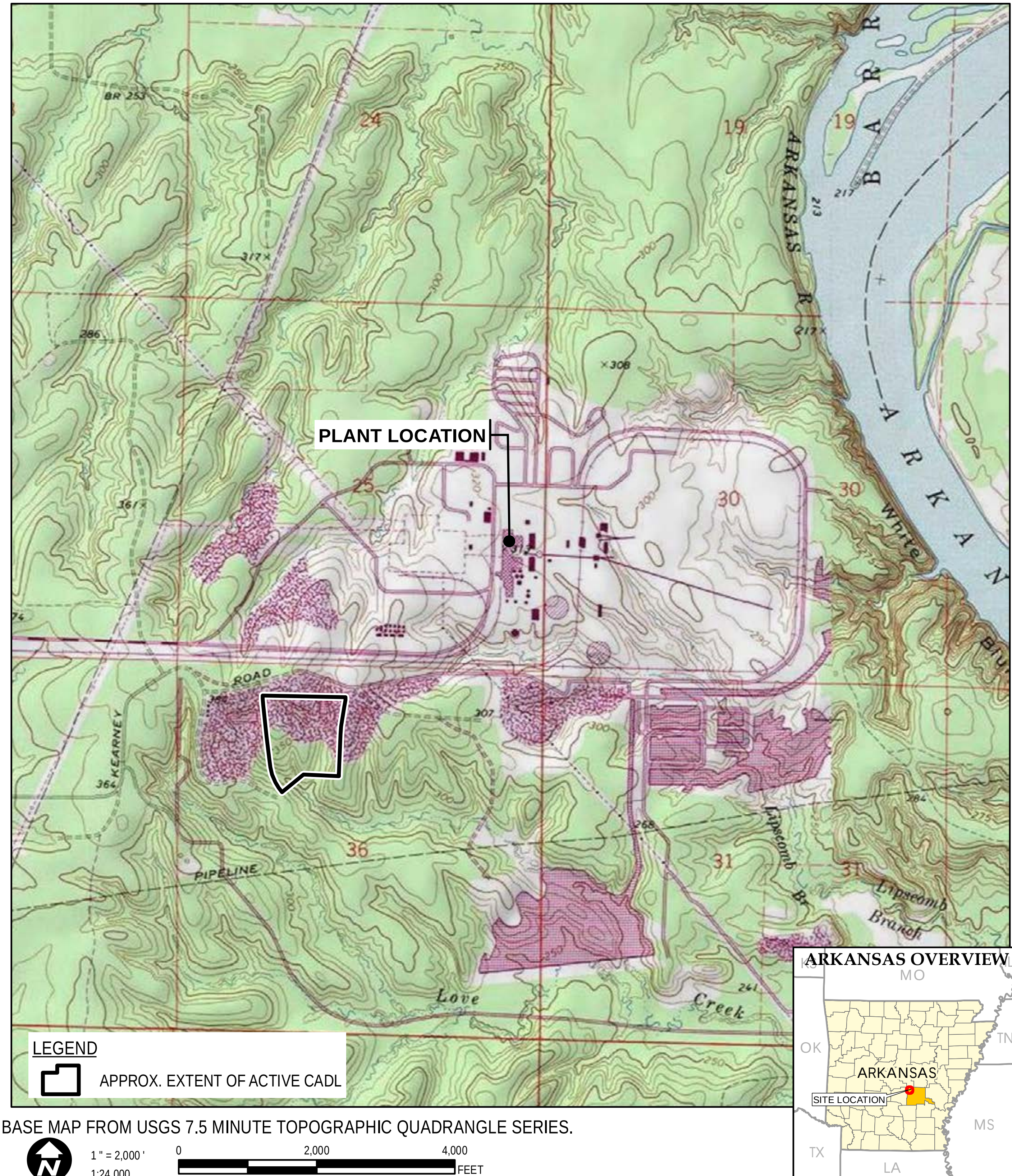

BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

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

0 2,000 4,000 FEET

TRC

Two United Plaza
8550 United Plaza Blvd., Suite 502
Baton Rouge, LA
Phone: 225.216.7483

TRC - GIS

PROJECT:	
ENTERGY WHITE BLUFF PLANT 1100 WHITE BLUFF ROAD REDFIELD, ARKANSAS	
TITLE:	
ENTERGY WHITE BLUFF PLANT LOCATION MAP	

DRAWN BY:	S. MAJOR
CHECKED BY:	G. TIEMAN
APPROVED BY:	J. HOUSE
DATE:	JANUARY 2022
PROJ. NO.:	341458
FILE:	341458-001slm_20220105.mxd

FIGURE 1

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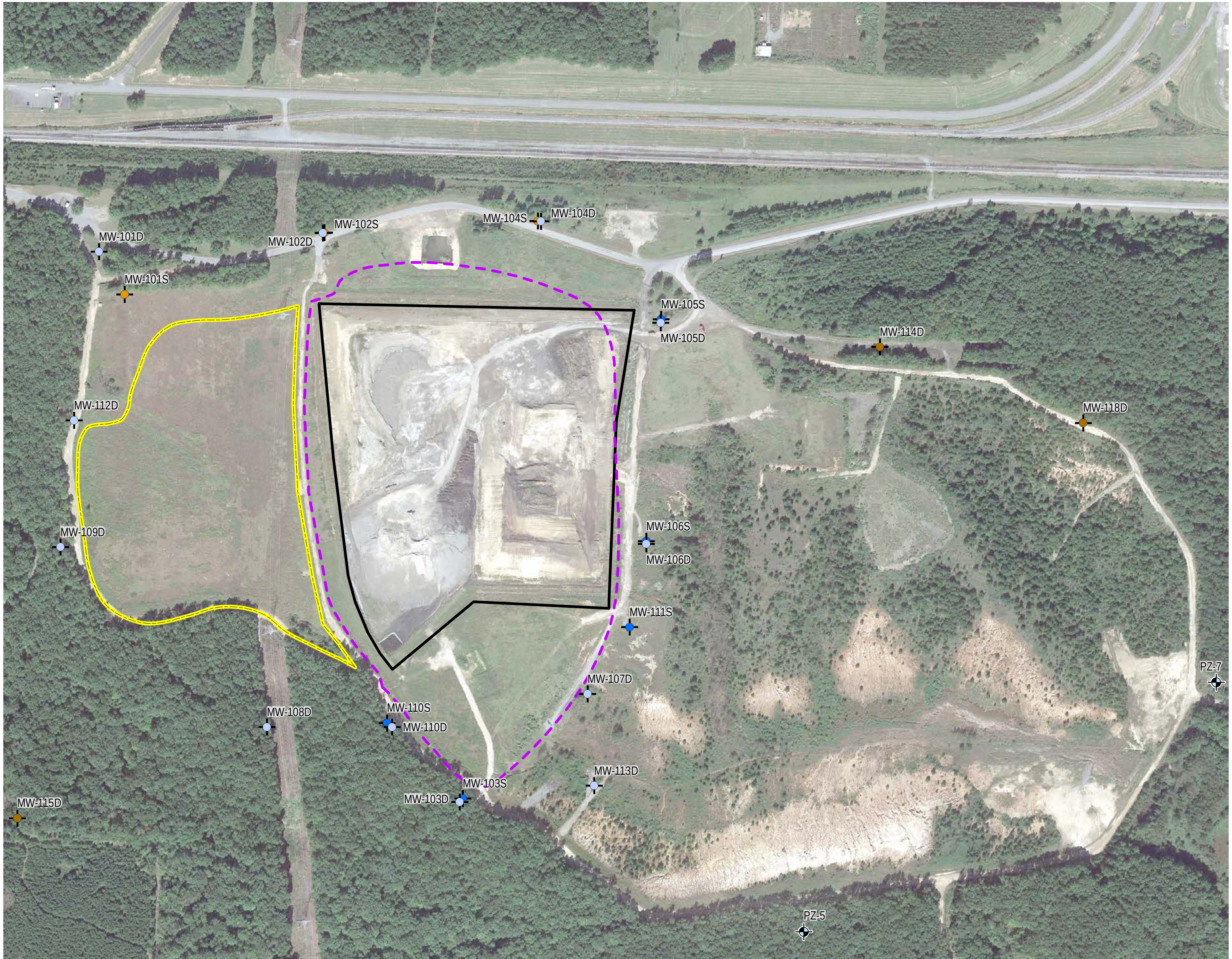

LEGEND

- STRATUM I BACKROUND WELL
- STRATUM I MONITORING WELL
- STRATUM III BACKROUND WELL
- STRATUM III MONITORING WELL
- STRATUM III PIEZOMETER
- APPROX. EXTENT OF ACTIVE CADL
- APPROX. EXTENT OF CLOSED CADL
- HISTORIC FILL AREA

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, 2018.
2. COAL ASH DISPOSAL LANDFILL (CADL)

N

0 400 800 Feet

1 " = 371 '
1:4,458

PROJECT:
ENTERGY WHITE BLUFF PLANT
1100 WHITE BLUFF ROAD
REDFIELD, ARKANSAS

TITLE:
CADL EXTENT AND CCR GROUNDWATER MONITORING LOCATIONS

DRAWN BY:	S. MAJOR	PROJ. NO.:	341458
CHECKED BY:	S. SELLWOOD		
APPROVED BY:	J. HOUSE	**FIGURE 2**	
DATE:	JANUARY 2022		

TRC

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FILE NO.: 341458-002_01052022.mxd

TRC - GIS

Coordinate System: NAD 1983 StatePlane Arkansas South FIPS 0302 Feet (Foot US)
Map Rotation: 0

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