Entergy Arkansas, LLC
Independence Steam Electric Station
Landfill Cells 12-15

2021 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:

PO Box 551
Little Rock, Arkansas 72203

Prepared by:

8550 United Plaza Blvd. Suite 502
Baton Rouge, LA 70809

January 31, 2022

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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 Independence Steam Electric Station (Plant) located near Newark, Arkansas. The Landfill receives CCR generated from the combustion of coal at the Plant. Management of 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 2021 for the Landfill CCR Unit monitoring well network per 40 CFR § 257.94. The statistical analyses completed for the second semi-annual 2020 identified potential statistically significant increases (SSIs); therefore, an alternate source demonstration (ASD) was performed for the second half 2020 detection monitoring event and is attached to this report. The ASD was successful which resulted in the landfill continuing to operate under the detection monitoring program. The first semi-annual 2021 sampling event analytical data did not identify SSIs. The Landfill CCR unit operated under the detection monitoring program (40 CFR § 257.94) during the duration of 2021.

1. INTRODUCTION

Entergy Arkansas, LLC (Entergy), operates the Landfill for the disposal of CCR at the Plant located near Newark, Arkansas (Lat: 35.67826 / Long: -91.408848). 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 in 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 11 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 2021

Entergy did not install any new wells or decommission any existing wells in the certified groundwater monitoring system during 2021.

4. GROUNDWATER MONITORING DATA

In accordance with §257.90(e)(3), all monitoring data obtained under §§257.90 through 257.98 during 2021 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 2021 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 2021 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) of 2021 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 2020 semi-annual detection monitoring event. The ASD was certified by an Arkansas-registered professional engineer. 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 2021 semi-annual detection monitoring sampling was performed during June 2021. Based on statistical evaluation of the data; resampling was performed during August 2021 to verify potential statistical exceedances. Resample results did not confirm potential SSIs for calcium, chloride, sulfate, and total dissolved solids (TDS).

- No SSIs were identified in the first half of 2021 semi-annual detection monitoring event; therefore, Entergy did not prepare alternative source demonstrations (ASDs) per §257.94(e)(2) for either of the detection monitoring events for the CADL CCR Unit.

- The second half 2021 detection monitoring sampling was performed during November 2021. 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 2021 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 during the duration of 2021.

6. PROJECTED ACTIVITIES FOR 2022

Planned activities for the program during 2022 are listed below:

- Statistical evaluation of the second half 2021 and first-half 2022 detection monitoring sampling data will be performed during 2022 to determine if any SSIs are identified.
- Semiannual detection monitoring is planned for June and November 2022.

APPENDIX A
SITE MAP

LEGEND

- CADL MONITORING WELLS
- CCR UNIT BOUNDARY

NOTES

1. BASE MAP IMAGERY FROM ESRI/DIGITAL GLOBE, 2016.

0 900 1,800 Feet

1 " = 900 '

1:10,800

PROJECT:
ENTERGY INDEPENDENCE PLANT
555 POINT FERRY ROAD
NEWARK, ARKANSAS

TITLE:
MONITORING WELL LOCATIONS FOR CCR GROUNDWATER MONITORING NETWORK

DRAWN BY:	S. MAJOR	PROJ. NO.:	341479
CHECKED BY:	J. HOUSE		
APPROVED BY:	J. HOUSE		**FIGURE 1**
DATE:	January 2022		

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

FILE NO.: 341479-005IND.mxd

Plot Date: 1/5/2021, 15:59:32 PM by SMAJOR -- LAYOUT: ANSI B(11"x17")
Path: S:\1-PROJECTS\Entergy\MadisonLegacyProjects\Arkansas\2018_270853\341479-005IND.mxd
Coordinate System: NAD 1983 StatePlane Arkansas North FIPS 0301 Feet (Foot US)
Map Rotation: 0

TRC - GIS

APPENDIX B
GROUNDWATER MONITORING DATA

Sampling Schedule, Entergy Independence CADL Network			
	Detection Monitoring Sampling Dates and Wells Sampled		
Well ID	6/17-6/23/2021	11/15-11/17/2021	Number of Samples Collected
MW-1R	X	X	2
MW-3	X	X	2
MW-6	X	X	2
MW-7	X	X	2
MW-8	X	X	2
MW-9	X	X	2
MW-10	X	X	2
MW-11	X	X	2
MW-13	X	X	2
MW-17	X	X	2
MW-18	-	X	1

Notes: All samples collected in 2021 were part of the detection monitoring program. No samples collected in 2021 were part of an assessment monitoring program.

[1] MW-18 (a background well) was inaccessible during 1st Half sampling (6/17-6/18/2021) due to site construction activities.

Field pH data collected during 2021, Entergy Independence CADL network		
Well ID	Date Collected	pH (su)
MW-1R	6/18/2021	6.74
	11/16/2021	7.06
MW-3	6/18/2021	6.69
	11/15/2021	7.26
MW-6	6/18/2021	6.57
	11/16/2021	6.62
MW-7	6/18/2021	7.55
	11/15/2021	7.48
MW-8	6/17/2021	6.20
	11/16/2021	6.96
MW-9	6/17/2021	6.24
	11/16/2021	7.02
MW-10	6/18/2021	7.10
	11/15/2021	7.24
MW-11	6/23/2021	6.47
	11/15/2021	6.42
MW-13	6/18/2021	7.14
	11/15/2021	6.52
MW-17	6/18/2021	5.89
	11/17/2021	6.81
MW-18	6/18/2021	[1]
	11/16/2021	6.94

[1] MW-18 (a background well) was inaccessible during 1st Half sampling (6/17-6/18/2021) due to site construction activities.

ANALYTICAL REPORT

July 13, 2021

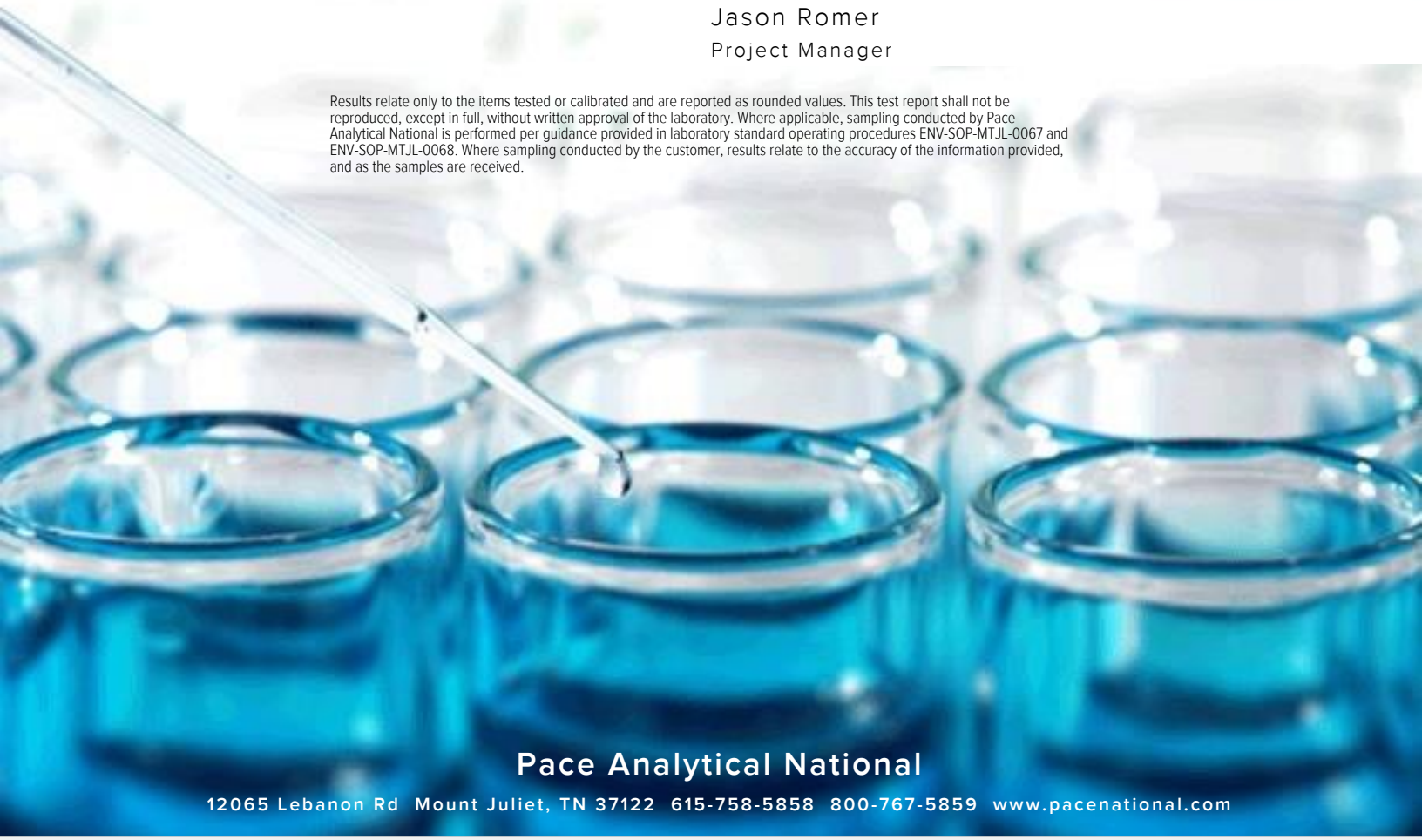
TRC Solutions - Dallas, TX

Sample Delivery Group:	L1369462
Samples Received:	06/22/2021
Project Number:	
Description:	Entergy Independence

Report To: Zak Sabatka
700 Highlander Blvd, Ste 210
Arlington, TX 76015

Entire Report Reviewed By:

Jason Romer
Project Manager



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SAMPLE SUMMARY

FB-01 L1369462-01 GW

Collected by: Z. Sabatka
Collected date/time: 06/18/21 10:40
Received date/time: 06/22/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1694171	1	06/23/21 21:55	06/24/21 03:19	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1696532	1	06/28/21 16:09	06/28/21 16:09	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1701003	1	07/07/21 16:32	07/07/21 16:32	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1701049	1	07/09/21 10:20	07/09/21 15:53	KMG	Mt. Juliet, TN

CASE NARRATIVE

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

Jason Romer
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	ND		10000	1	06/24/2021 03:19	WG1694171

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	5.79	T8	1	06/28/2021 16:09	WG1696532

Sample Narrative:

L1369462-01 WG1696532: 5.79 at 22.4C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	907	J	379	1000	1	07/07/2021 16:32	WG1701003
Fluoride	U		64.0	150	1	07/07/2021 16:32	WG1701003
Sulfate	U		594	5000	1	07/07/2021 16:32	WG1701003

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	U		20.0	200	1	07/09/2021 15:53	WG1701049
Calcium	U		79.3	1000	1	07/09/2021 15:53	WG1701049

Method Blank (MB)

(MB) R3672881-1 06/24/21 03:19

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

L1369424-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1369424-01 06/24/21 03:19 • (DUP) R3672881-3 06/24/21 03:19

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1470000	1470000	1	0.136		5

L1369484-18 Original Sample (OS) • Duplicate (DUP)

(OS) L1369484-18 06/24/21 03:19 • (DUP) R3672881-4 06/24/21 03:19

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	358000	367000	1	2.48		5

Laboratory Control Sample (LCS)

(LCS) R3672881-2 06/24/21 03:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8900000	101	77.4-123	

L1369263-18 Original Sample (OS) • Duplicate (DUP)

(OS) L1369263-18 06/28/21 16:09 • (DUP) R3673068-2 06/28/21 16:09

Analyte	Original Result su	DUP Result su	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
pH	11.9	11.9	1	0.000		1

Sample Narrative:

OS: 11.93 at 19.1C

DUP: 11.93 at 19.1C

L1369484-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1369484-09 06/28/21 16:09 • (DUP) R3673068-3 06/28/21 16:09

Analyte	Original Result su	DUP Result su	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
pH	7.70	7.71	1	0.130		1

Sample Narrative:

OS: 7.7 at 22.1C

DUP: 7.71 at 24.1C

Laboratory Control Sample (LCS)

(LCS) R3673068-1 06/28/21 16:09

Analyte	Spike Amount su	LCS Result su	LCS Rec. %	Rec. Limits %	LCS Qualifier
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.02 at 26C

Method Blank (MB)

(MB) R3677130-1 07/07/21 13:12

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

L1369467-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1369467-09 07/07/21 19:51 • (DUP) R3677130-3 07/07/21 20:30

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	11500	11600	1	0.935		15
Fluoride	253	247	1	2.36		15

L1369293-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1369293-01 07/07/21 14:59 • (DUP) R3677130-6 07/07/21 21:23

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	6540	6350	1	2.99		15
Fluoride	106	115	1	8.44	J	15
Sulfate	U	U	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3677130-2 07/07/21 13:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39100	97.8	80.0-120	
Fluoride	8000	8120	101	80.0-120	
Sulfate	40000	39700	99.1	80.0-120	

L1369467-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1369467-10 07/07/21 20:44 • (MS) R3677130-4 07/07/21 20:57 • (MSD) R3677130-5 07/07/21 21:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	17400	66200	66100	97.6	97.5	1	80.0-120			0.122	15
Fluoride	5000	196	4880	4900	93.6	94.1	1	80.0-120			0.503	15

L1369467-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1369467-10 07/07/21 20:44 • (MS) R3677130-4 07/07/21 20:57 • (MSD) R3677130-5 07/07/21 21:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	50000	303000	324000	323000	42.8	41.5	1	80.0-120	E V	E V	0.210	15

L1369263-21 Original Sample (OS) • Matrix Spike (MS)

(OS) L1369263-21 07/08/21 10:31 • (MS) R3677130-7 07/07/21 21:38

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	17800	66500	97.5	1	80.0-120	
Fluoride	5000	273	4960	93.8	1	80.0-120	
Sulfate	50000	310000	325000	29.0	1	80.0-120	E V

Method Blank (MB)

(MB) R3677764-1 07/09/21 14:50

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

Laboratory Control Sample (LCS)

(LCS) R3677764-2 07/09/21 14:52

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	997	99.7	80.0-120	
Calcium	10000	10000	100	80.0-120	

L1369263-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1369263-21 07/09/21 14:55 • (MS) R3677764-4 07/09/21 15:01 • (MSD) R3677764-5 07/09/21 15:04

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	58.3	1090	1070	104	101	1	75.0-125			1.94	20
Calcium	10000	145000	154000	153000	94.4	77.9	1	75.0-125			1.07	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
TRC Solutions - Dallas, TX
700 Highlander Blvd, Ste 210
Arlington, TX 76015

Billing Information:
Accounts Payable
21 Griffin Rd. N.
Windsor, CT 06095

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®

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

Report to: Zak Sabatka / Jason House

Email To: ZSabatka@trccompanies.com
jhouse@trccompanies.com

Project Description: Entergy Independence

City/State Collected: Redfield, AR

Please Circle: PT MT (CT) ET

Phone: 817-522-1026

Client Project #

Lab Project # TRCDTX-ENTERGYINDY

SDG # L1369462

G157

Table #

Collected by (print): Z Sabatka

Site/Facility ID #

P.O. #

Acctnum: TRCDTX
Template: T189406
Prelogin: P854270
PM: 134 - Mark W. Beasley
PB: [initials] 6/11/21
Shipped Via: FedEX Ground

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y ✓

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

Quote #

Date Results Needed: 7/6/21

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cl, F, pH, SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Total B, Ca 250mlHDPE-HNO3							Remarks	Sample # (lab only)
FB-01	Grab	GW		6/18/21	1040	3	X	X	X								-01
		GW															
		GW															
		GW															
		GW															

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

Remarks: Run on separate COC as stand alone sample

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier ________

Tracking # 5163 7497 5064

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]	6/21/21	1230		

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: AT 6d °C 1.2±.05=1.2	Bottles Received: 3	If preservation required by Login: Date/Time

Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:	Hold:	Condition: NCF / (OK)
			Bailee Rolman	6/22/21	0900		

ANALYTICAL REPORT

July 13, 2021

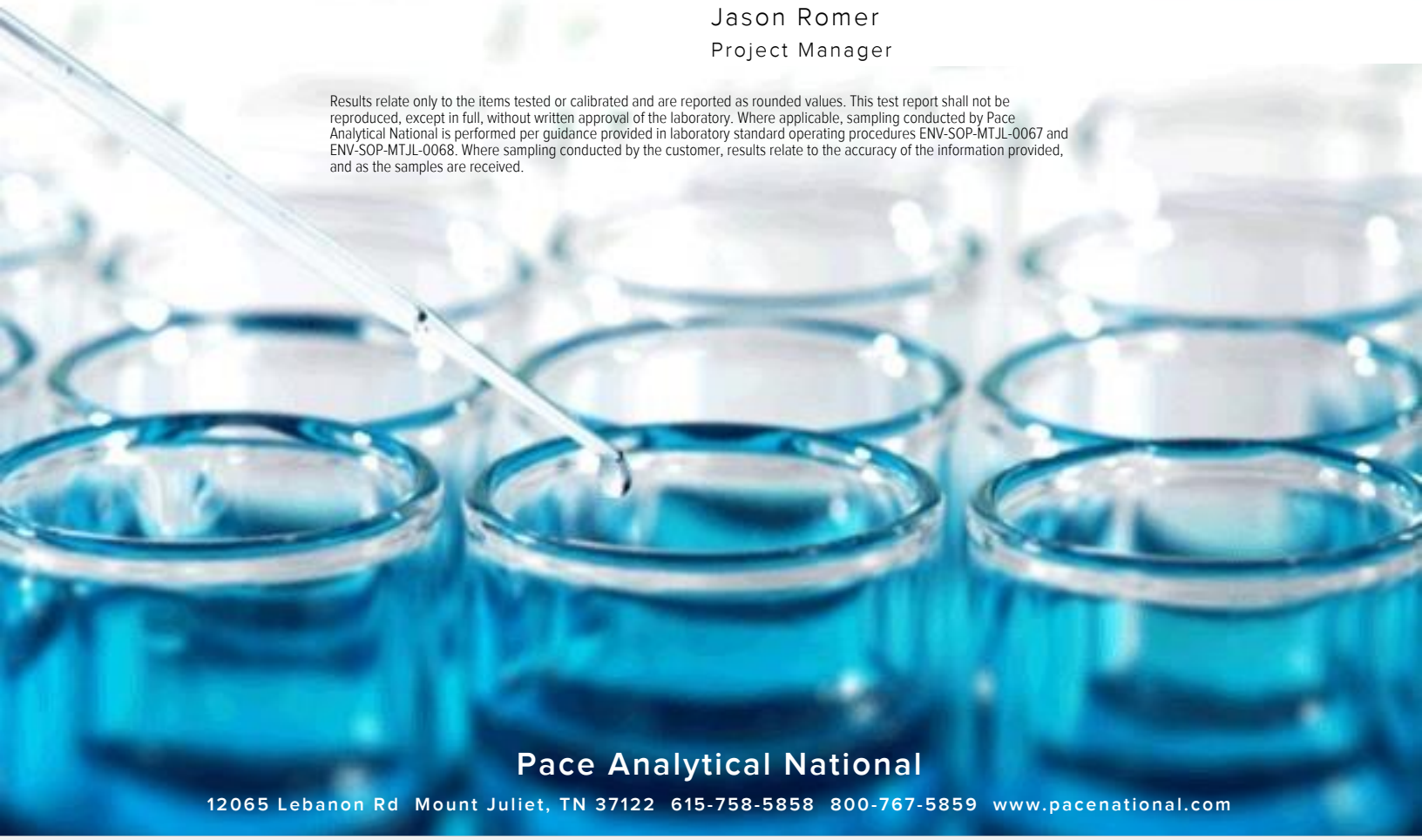
TRC Solutions - Dallas, TX

Sample Delivery Group:	L1369522
Samples Received:	06/22/2021
Project Number:	419735
Description:	Entergy Independence

Report To: Zak Sabatka
700 Highlander Blvd, Ste 210
Arlington, TX 76015

Entire Report Reviewed By:

Jason Romer
Project Manager



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

TABLE OF CONTENTS

MW-1R L1369522-01 GW

Collected by: Z. Sabatka | Collected date/time: 06/18/21 10:51 | Received date/time: 06/22/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1694174	1	06/23/21 21:51	06/24/21 06:44	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1696929	1	06/29/21 12:00	06/29/21 12:00	SAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1701516	1	07/10/21 23:31	07/10/21 23:31	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1703802	5	07/13/21 01:20	07/13/21 01:20	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1701050	1	07/09/21 13:01	07/09/21 18:37	KMG	Mt. Juliet, TN

MW-2 L1369522-02 GW

Collected by: Z. Sabatka | Collected date/time: 06/17/21 15:02 | Received date/time: 06/22/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1694174	1	06/23/21 21:51	06/24/21 06:44	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1696929	1	06/29/21 12:00	06/29/21 12:00	SAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1701516	1	07/10/21 23:43	07/10/21 23:43	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1703802	5	07/13/21 01:33	07/13/21 01:33	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1701050	1	07/09/21 13:01	07/09/21 18:40	KMG	Mt. Juliet, TN

MW-3 L1369522-03 GW

Collected by: Z. Sabatka | Collected date/time: 06/18/21 14:36 | Received date/time: 06/22/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1694183	1	06/23/21 22:12	06/24/21 08:02	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1696929	1	06/29/21 12:00	06/29/21 12:00	SAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1701516	1	07/10/21 23:54	07/10/21 23:54	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1701050	1	07/09/21 13:01	07/09/21 18:43	KMG	Mt. Juliet, TN

MW-6 L1369522-04 GW

Collected by: Z. Sabatka | Collected date/time: 06/18/21 13:57 | Received date/time: 06/22/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1694183	1	06/23/21 22:12	06/24/21 08:02	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1696929	1	06/29/21 12:00	06/29/21 12:00	SAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1701516	1	07/11/21 00:06	07/11/21 00:06	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1701050	1	07/09/21 13:01	07/09/21 18:46	KMG	Mt. Juliet, TN

MW-7 L1369522-05 GW

Collected by: Z. Sabatka | Collected date/time: 06/18/21 16:56 | Received date/time: 06/22/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1694183	1	06/23/21 22:12	06/24/21 08:02	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1696929	1	06/29/21 12:00	06/29/21 12:00	SAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1701516	1	07/11/21 00:17	07/11/21 00:17	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1701050	1	07/09/21 13:01	07/09/21 18:49	KMG	Mt. Juliet, TN

MW-8 L1369522-06 GW

Collected by: Z. Sabatka | Collected date/time: 06/17/21 10:57 | Received date/time: 06/22/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1694183	1	06/23/21 22:12	06/24/21 08:02	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1696929	1	06/29/21 12:00	06/29/21 12:00	SAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1701516	1	07/11/21 00:29	07/11/21 00:29	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1703802	5	07/13/21 02:12	07/13/21 02:12	ELN	Mt. Juliet, TN

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

MW-8 L1369522-06 GW

Collected by: Z. Sabatka | Collected date/time: 06/17/21 10:57 | Received date/time: 06/22/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1701050	1	07/09/21 13:01	07/09/21 18:52	KMG	Mt. Juliet, TN

MW-9 L1369522-07 GW

Collected by: Z. Sabatka | Collected date/time: 06/17/21 10:05 | Received date/time: 06/22/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1694183	1	06/23/21 22:12	06/24/21 08:02	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1696929	1	06/29/21 12:00	06/29/21 12:00	SAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1701516	1	07/11/21 00:52	07/11/21 00:52	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1703802	5	07/13/21 02:25	07/13/21 02:25	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1701050	1	07/09/21 13:01	07/09/21 18:55	KMG	Mt. Juliet, TN

MW-10 L1369522-08 GW

Collected by: Z. Sabatka | Collected date/time: 06/18/21 15:23 | Received date/time: 06/22/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1694183	1	06/23/21 22:12	06/24/21 08:02	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1696929	1	06/29/21 12:00	06/29/21 12:00	SAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1701516	1	07/11/21 01:15	07/11/21 01:15	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1703802	5	07/13/21 02:38	07/13/21 02:38	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1701050	1	07/09/21 13:01	07/09/21 18:57	KMG	Mt. Juliet, TN

MW-13 L1369522-09 GW

Collected by: Z. Sabatka | Collected date/time: 06/18/21 09:55 | Received date/time: 06/22/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1694183	1	06/23/21 22:12	06/24/21 08:02	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1696929	1	06/29/21 12:00	06/29/21 12:00	SAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1701516	1	07/11/21 01:49	07/11/21 01:49	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1701050	1	07/09/21 13:01	07/09/21 19:00	KMG	Mt. Juliet, TN

DUP-01 L1369522-10 GW

Collected by: Z. Sabatka | Collected date/time: 06/17/21 08:00 | Received date/time: 06/22/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1694183	1	06/23/21 22:12	06/24/21 08:02	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1696929	1	06/29/21 12:00	06/29/21 12:00	SAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1701516	1	07/11/21 02:01	07/11/21 02:01	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1703802	5	07/13/21 02:51	07/13/21 02:51	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1701050	1	07/09/21 13:01	07/09/21 19:03	KMG	Mt. Juliet, TN

MW-17 L1369522-11 GW

Collected by: Z. Sabatka | Collected date/time: 06/17/21 08:00 | Received date/time: 06/22/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1695130	1	06/25/21 12:39	06/25/21 14:47	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1696929	1	06/29/21 12:00	06/29/21 12:00	SAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1701516	1	07/11/21 02:12	07/11/21 02:12	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1701050	1	07/09/21 13:01	07/09/21 19:12	KMG	Mt. Juliet, TN

CASE NARRATIVE

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

Jason Romer
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	825000	J3	10000	1	06/24/2021 06:44	WG1694174

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.28	T8	1	06/29/2021 12:00	WG1696929

Sample Narrative:

L1369522-01 WG1696929: 8.28 at 23C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	183000		1900	5000	5	07/13/2021 01:20	WG1703802
Fluoride	173		64.0	150	1	07/10/2021 23:31	WG1701516
Sulfate	272000		2970	25000	5	07/13/2021 01:20	WG1703802

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	84.6	J	20.0	200	1	07/09/2021 18:37	WG1701050
Calcium	134000		79.3	1000	1	07/09/2021 18:37	WG1701050

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	656000		10000	1	06/24/2021 06:44	WG1694174

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.88	T8	1	06/29/2021 12:00	WG1696929

Sample Narrative:

L1369522-02 WG1696929: 7.88 at 22.8C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	19000		379	1000	1	07/10/2021 23:43	WG1701516
Fluoride	217		64.0	150	1	07/10/2021 23:43	WG1701516
Sulfate	298000		2970	25000	5	07/13/2021 01:33	WG1703802

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	52.2	J	20.0	200	1	07/09/2021 18:40	WG1701050
Calcium	144000		79.3	1000	1	07/09/2021 18:40	WG1701050

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	621000		10000	1	06/24/2021 08:02	WG1694183

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.24	T8	1	06/29/2021 12:00	WG1696929

Sample Narrative:

L1369522-03 WG1696929: 7.24 at 22.5C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	21200		379	1000	1	07/10/2021 23:54	WG1701516
Fluoride	365		64.0	150	1	07/10/2021 23:54	WG1701516
Sulfate	97100		594	5000	1	07/10/2021 23:54	WG1701516

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	400		20.0	200	1	07/09/2021 18:43	WG1701050
Calcium	66900		79.3	1000	1	07/09/2021 18:43	WG1701050

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	398000		10000	1	06/24/2021 08:02	WG1694183

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.81	T8	1	06/29/2021 12:00	WG1696929

Sample Narrative:

L1369522-04 WG1696929: 7.81 at 22.6C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	30200		379	1000	1	07/11/2021 00:06	WG1701516
Fluoride	131	J	64.0	150	1	07/11/2021 00:06	WG1701516
Sulfate	88000		594	5000	1	07/11/2021 00:06	WG1701516

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	80.2	J	20.0	200	1	07/09/2021 18:46	WG1701050
Calcium	62500		79.3	1000	1	07/09/2021 18:46	WG1701050

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	495000		10000	1	06/24/2021 08:02	WG1694183

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.97	T8	1	06/29/2021 12:00	WG1696929

Sample Narrative:

L1369522-05 WG1696929: 7.97 at 22.4C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	10600		379	1000	1	07/11/2021 00:17	WG1701516
Fluoride	710		64.0	150	1	07/11/2021 00:17	WG1701516
Sulfate	46800		594	5000	1	07/11/2021 00:17	WG1701516

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	60.6	J	20.0	200	1	07/09/2021 18:49	WG1701050
Calcium	45500		79.3	1000	1	07/09/2021 18:49	WG1701050

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1020000		10000	1	06/24/2021 08:02	WG1694183

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.45	T8	1	06/29/2021 12:00	WG1696929

Sample Narrative:

L1369522-06 WG1696929: 7.45 at 23.1C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	181000		1900	5000	5	07/13/2021 02:12	WG1703802
Fluoride	199		64.0	150	1	07/11/2021 00:29	WG1701516
Sulfate	308000		2970	25000	5	07/13/2021 02:12	WG1703802

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	178	J	20.0	200	1	07/09/2021 18:52	WG1701050
Calcium	136000		79.3	1000	1	07/09/2021 18:52	WG1701050

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	909000		10000	1	06/24/2021 08:02	WG1694183

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	5.96	T8	1	06/29/2021 12:00	WG1696929

Sample Narrative:

L1369522-07 WG1696929: 5.96 at 23.6C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	50700		379	1000	1	07/11/2021 00:52	WG1701516
Fluoride	183		64.0	150	1	07/11/2021 00:52	WG1701516
Sulfate	391000		2970	25000	5	07/13/2021 02:25	WG1703802

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	635		20.0	200	1	07/09/2021 18:55	WG1701050
Calcium	115000		79.3	1000	1	07/09/2021 18:55	WG1701050

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1030000		10000	1	06/24/2021 08:02	WG1694183

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	5.57	T8	1	06/29/2021 12:00	WG1696929

Sample Narrative:

L1369522-08 WG1696929: 5.57 at 23.2C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	20400		379	1000	1	07/11/2021 01:15	WG1701516
Fluoride	388		64.0	150	1	07/11/2021 01:15	WG1701516
Sulfate	419000		2970	25000	5	07/13/2021 02:38	WG1703802

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	3920		20.0	200	1	07/09/2021 18:57	WG1701050
Calcium	142000		79.3	1000	1	07/09/2021 18:57	WG1701050

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	485000		10000	1	06/24/2021 08:02	WG1694183

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	5.76	T8	1	06/29/2021 12:00	WG1696929

Sample Narrative:

L1369522-09 WG1696929: 5.76 at 23.5C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	11700		379	1000	1	07/11/2021 01:49	WG1701516
Fluoride	297		64.0	150	1	07/11/2021 01:49	WG1701516
Sulfate	98400		594	5000	1	07/11/2021 01:49	WG1701516

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	364		20.0	200	1	07/09/2021 19:00	WG1701050
Calcium	81000		79.3	1000	1	07/09/2021 19:00	WG1701050

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	851000		10000	1	06/24/2021 08:02	WG1694183

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.27	T8	1	06/29/2021 12:00	WG1696929

Sample Narrative:

L1369522-10 WG1696929: 8.27 at 23.8C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	19100		379	1000	1	07/11/2021 02:01	WG1701516
Fluoride	217		64.0	150	1	07/11/2021 02:01	WG1701516
Sulfate	298000		2970	25000	5	07/13/2021 02:51	WG1703802

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	56.6	J	20.0	200	1	07/09/2021 19:03	WG1701050
Calcium	144000		79.3	1000	1	07/09/2021 19:03	WG1701050

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	187000	T8	10000	1	06/25/2021 14:47	WG1695130

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.80	T8	1	06/29/2021 12:00	WG1696929

Sample Narrative:

L1369522-11 WG1696929: 6.8 at 23.8C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2530		379	1000	1	07/11/2021 02:12	WG1701516
Fluoride	102	J	64.0	150	1	07/11/2021 02:12	WG1701516
Sulfate	20600		594	5000	1	07/11/2021 02:12	WG1701516

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	69.3	J	20.0	200	1	07/09/2021 19:12	WG1701050
Calcium	35500		79.3	1000	1	07/09/2021 19:12	WG1701050

Method Blank (MB)

(MB) R3672882-1 06/24/21 06:44

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

L1369484-27 Original Sample (OS) • Duplicate (DUP)

(OS) L1369484-27 06/24/21 06:44 • (DUP) R3672882-3 06/24/21 06:44

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	374000	369000	1	1.35		5

L1369522-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1369522-01 06/24/21 06:44 • (DUP) R3672882-4 06/24/21 06:44

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	825000	1020000	1	20.9	J3	5

Laboratory Control Sample (LCS)

(LCS) R3672882-2 06/24/21 06:44

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8790000	99.9	77.4-123	

Method Blank (MB)

(MB) R3672889-1 06/24/21 08:02

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

L1368707-22 Original Sample (OS) • Duplicate (DUP)

(OS) L1368707-22 06/24/21 08:02 • (DUP) R3672889-3 06/24/21 08:02

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	5850000	5920000	1	1.19		5

L1369522-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1369522-06 06/24/21 08:02 • (DUP) R3672889-4 06/24/21 08:02

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1020000	1020000	1	0.686		5

Laboratory Control Sample (LCS)

(LCS) R3672889-2 06/24/21 08:02

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8860000	101	77.4-123	

Method Blank (MB)

(MB) R3673121-1 06/25/21 14:47

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

L1369293-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1369293-01 06/25/21 14:47 • (DUP) R3673121-3 06/25/21 14:47

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	624000	625000	1	0.213		5

L1369478-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1369478-01 06/25/21 14:47 • (DUP) R3673121-4 06/25/21 14:47

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1260000	1270000	1	0.158		5

Laboratory Control Sample (LCS)

(LCS) R3673121-2 06/25/21 14:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8710000	99.0	77.4-123	

L1369498-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1369498-01 06/29/21 12:00 • (DUP) R3673433-2 06/29/21 12:00

Analyte	Original Result su	DUP Result su	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
pH	7.76	7.79	1	0.386		1

Sample Narrative:
OS: 7.76 at 21.7C
DUP: 7.79 at 22C

L1369522-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1369522-10 06/29/21 12:00 • (DUP) R3673433-3 06/29/21 12:00

Analyte	Original Result su	DUP Result su	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
pH	8.27	8.28	1	0.121		1

Sample Narrative:
OS: 8.27 at 23.8C
DUP: 8.28 at 23C

Laboratory Control Sample (LCS)

(LCS) R3673433-1 06/29/21 12:00

Analyte	Spike Amount su	LCS Result su	LCS Rec. %	Rec. Limits %	LCS Qualifier
pH	10.0	10.1	101	99.0-101	

Sample Narrative:
LCS: 10.06 at 24.9C

Method Blank (MB)

(MB) R3678142-1 07/10/21 21:14

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

L1369510-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1369510-01 07/10/21 21:48 • (DUP) R3678142-3 07/10/21 22:00

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	15600	15700	1	0.987		15
Fluoride	113	112	1	0.534	J	15
Sulfate	70900	71000	1	0.124		15

L1369522-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1369522-06 07/11/21 00:29 • (DUP) R3678142-6 07/11/21 00:40

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Fluoride	199	197	1	0.858		15

Laboratory Control Sample (LCS)

(LCS) R3678142-2 07/10/21 21:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39000	97.5	80.0-120	
Fluoride	8000	7720	96.5	80.0-120	
Sulfate	40000	41700	104	80.0-120	

L1369510-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1369510-02 07/10/21 22:11 • (MS) R3678142-4 07/10/21 22:23 • (MSD) R3678142-5 07/10/21 22:34

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	7000	55100	55100	96.1	96.3	1	80.0-120			0.136	15
Fluoride	5000	83.7	4900	4890	96.3	96.2	1	80.0-120			0.141	15
Sulfate	50000	50900	98000	97700	94.2	93.5	1	80.0-120			0.312	15

L1369522-07 Original Sample (OS) • Matrix Spike (MS)

(OS) L1369522-07 07/11/21 00:52 • (MS) R3678142-7 07/11/21 01:03

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	50700	101000	99.7	1	80.0-120	E
Fluoride	5000	183	4780	92.0	1	80.0-120	

Method Blank (MB)

(MB) R3678627-1 07/12/21 22:46

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

L1372166-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1372166-01 07/13/21 00:03 • (DUP) R3678627-3 07/13/21 00:16

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	2450	2310	1	5.83		15
Sulfate	92100	86500	1	6.26		15

L1371467-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1371467-01 07/13/21 04:08 • (DUP) R3678627-5 07/13/21 04:47

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	40500	39000	1	3.64		15
Sulfate	15600	15200	1	2.82		15

Laboratory Control Sample (LCS)

(LCS) R3678627-2 07/12/21 22:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40400	101	80.0-120	
Sulfate	40000	41000	102	80.0-120	

L1372166-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1372166-01 07/13/21 00:03 • (MS) R3678627-4 07/13/21 00:29

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	2450	53500	102	1	80.0-120	
Sulfate	50000	92100	135000	85.6	1	80.0-120	E

L1371467-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1371467-01 07/13/21 04:08 • (MS) R3678627-6 07/13/21 05:00 • (MSD) R3678627-7 07/13/21 05:13

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	40500	90700	87000	100	93.1	1	80.0-120			4.11	15
Sulfate	50000	15600	67900	65000	105	98.8	1	80.0-120			4.36	15

Method Blank (MB)

(MB) R3677766-1 07/09/21 18:02

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

Laboratory Control Sample (LCS)

(LCS) R3677766-2 07/09/21 18:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	954	95.4	80.0-120	
Calcium	10000	9670	96.7	80.0-120	

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

MDL	Method Detection Limit.
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.
T8	Sample(s) received past/too close to holding time expiration.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
TRC Solutions - Dallas, TX
700 Highlander Blvd, Ste 210
Arlington, TX 76015

Billing Information:
Accounts Payable
21 Griffin Rd. N.
Windsor, CT 06095

Report to: Zak Sabatka / Jason House
Email To: ZSabatka@trccompanies.com; jhouse@trccompanies.com

Project Description: Entergy Independence
City/State Collected: Redfield, AR
Please Circle: PT MT CT ET

Phone: 817-522-1026
Client Project # 419735
Lab Project # TRCDTX-ENTERGYINDY

Collected by (print): Z. Sabatka
Site/Facility ID #
P.O. #

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

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Quote #
Date Results Needed 7/6/21

Chain of Custody Page 1 of 1

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

SDG # L1369522
Table # G156
Acctnum: TRCDTX
Template: T189406
Prelogin: P854270
PM: 134 - Mark W. Beasley
PB: CB 6/11/21
Shipped Via: FedEX Ground

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cl, F, pH, SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Total B, Ca 250mlHDPE-HNO3	Pres Chk	Remarks	Sample # (lab only)
MW-1R	Grab	GW		6/18/21	1051	3	X	X	X			-01
MW-2		GW		6/17/21	1502							02
MW-3		GW		6/18/21	1436							03
MW-6		GW		6/18/21	1357							04
MW-7		GW		6/18/21	1056							05
MW-8		GW		6/17/21	1057							06
MW-9		GW		6/17/21	1005							07
MW-10		GW		6/18/21	1523							08
MW-13		GW		6/18/21	0955							09
DUP-01		GW		6/17/21	0800							10

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # ~~5163 7697 5215~~ / 5163 7697 5004 BR

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	6/21/21	1230			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.7+0.0=1.2 °C Bottles Received: 38	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 6/22/21 Time: 0900	Hold: / Condition: NCF / OK

L1369522 TRCDTX NCF

R5

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

Members

Jeremy Watkins (responsible) Mark Beasley

- [ ] Login Clarification needed
- [ ] Chain of custody is incomplete
- [ ] Please specify Metals requested
- [ ] Please specify TCLP requested
- [x] Received additional samples not listed on COC
- [ ] Sample IDs on containers do not match IDs on COC
- [ ] Client did not "X" analysis
- [ ] Chain of Custody is missing
- [ ] If no COC: Received by:_____
- [ ] If no COC: Date/Time:_____
- [ ] If no COC: Temp./Cont.Rec./pH:_____
- [ ] If no COC: Carrier:_____
- [ ] If no COC: Tracking #:_____
- [ ] Client informed by call
- [ ] Client informed by Email
- [ ] Client informed by Voicemail
- [ ] Date/Time:_____6/24/21_____
- [ ] PM initials:_____MB_____
- [ ] Client Contact:____Zak Sabatka_____

Comments

Jeremy Watkins *22 June 2021 5:36 PM*

Received MW-17 not on COC

Mark Beasley *24 June 2021 11:23 AM*

Add to COC and run

Jeremy Watkins *24 June 2021 5:42 PM*

Done

ANALYTICAL REPORT

July 16, 2021

TRC Solutions - Dallas, TX

Sample Delivery Group:	L1372320
Samples Received:	06/29/2021
Project Number:	419735
Description:	Entergy Independence

Report To: Zak Sabatka
700 Highlander Blvd, Ste 210
Arlington, TX 76015

Entire Report Reviewed By:

Jason Romer
Project Manager

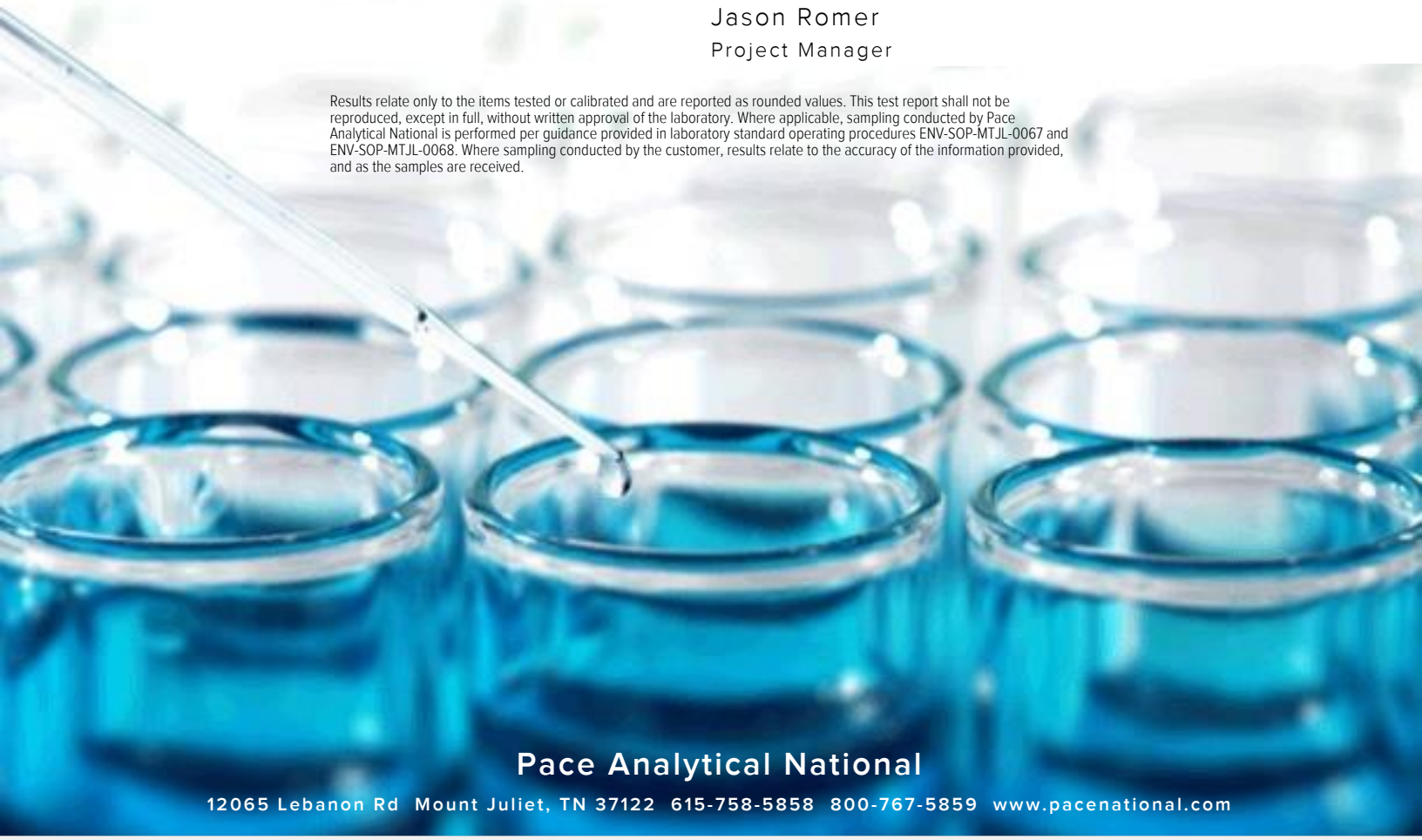


TABLE OF CONTENTS

SAMPLE SUMMARY

MW-11 L1372320-01 GW

Collected by: Z. Sabatka
Collected date/time: 06/23/21 11:02
Received date/time: 06/29/21 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1697728	1	06/30/21 14:49	06/30/21 15:32	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1700129	1	07/04/21 15:00	07/04/21 15:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1704443	1	07/14/21 14:44	07/14/21 14:44	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1704443	1	07/14/21 21:19	07/14/21 21:19	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1705205	1	07/15/21 17:15	07/16/21 01:16	CCE	Mt. Juliet, TN

CASE NARRATIVE

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

Jason Romer
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	372000		10000	1	06/30/2021 15:32	WG1697728

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.28	T8	1	07/04/2021 15:00	WG1700129

Sample Narrative:

L1372320-01 WG1700129: 7.28 at 19.5C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	48500		379	1000	1	07/14/2021 14:44	WG1704443
Fluoride	179		64.0	150	1	07/14/2021 21:19	WG1704443
Sulfate	35200		594	5000	1	07/14/2021 14:44	WG1704443

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	48.6	J	20.0	200	1	07/16/2021 01:16	WG1705205
Calcium	66800		79.3	1000	1	07/16/2021 01:16	WG1705205

Method Blank (MB)

(MB) R3677720-1 06/30/21 15:32

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

L1369926-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1369926-04 06/30/21 15:32 • (DUP) R3677720-3 06/30/21 15:32

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1870000	1850000	1	1.48		5

L1370209-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1370209-03 06/30/21 15:32 • (DUP) R3677720-4 06/30/21 15:32

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	830000	830000	1	0.000		5

Laboratory Control Sample (LCS)

(LCS) R3677720-2 06/30/21 15:32

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8770000	99.7	77.4-123	

L1372881-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1372881-01 07/04/21 15:00 • (DUP) R3675459-3 07/04/21 15:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.48	8.47	1	0.118		1

Sample Narrative:

OS: 8.48 at 21.3C

DUP: 8.47 at 21.9C

Laboratory Control Sample (LCS)

(LCS) R3675459-1 07/04/21 15:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	10.1	101	99.0-101	

Sample Narrative:

LCS: 10.08 at 21.5C

Method Blank (MB)

(MB) R3679465-1 07/14/21 10:38

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

L1372318-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1372318-01 07/14/21 12:35 • (DUP) R3679465-3 07/14/21 12:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	10100	9320	1	7.51		15
Fluoride	156	144	1	8.08	J	15

L1372318-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1372318-01 07/14/21 22:11 • (DUP) R3679465-8 07/14/21 22:24

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	104000	107000	5	2.38		15

L1372363-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1372363-05 07/14/21 23:16 • (DUP) R3679465-9 07/14/21 23:29

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	8710	9110	1	4.49		15
Fluoride	119	92.1	1	25.3	J P1	15
Sulfate	63600	66400	1	4.20		15

Laboratory Control Sample (LCS)

(LCS) R3679465-2 07/14/21 12:15

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	44800	112	80.0-120	
Fluoride	8000	9190	115	80.0-120	
Sulfate	40000	45900	115	80.0-120	

L1372318-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1372318-02 07/14/21 13:01 • (MS) R3679465-4 07/14/21 13:14 • (MSD) R3679465-5 07/14/21 13:27

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	2660	58500	58800	112	112	1	80.0-120			0.483	15
Fluoride	5000	243	5950	5970	114	114	1	80.0-120			0.342	15
Sulfate	50000	51600	106000	106000	109	109	1	80.0-120	E	E	0.0880	15

L1372363-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1372363-06 07/14/21 18:06 • (MS) R3679465-7 07/14/21 18:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	9850	64600	109	1	80.0-120	
Fluoride	5000	83.8	5530	109	1	80.0-120	
Sulfate	50000	63000	114000	103	1	80.0-120	E

Method Blank (MB)

(MB) R3680202-1 07/16/21 00:28

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

Laboratory Control Sample (LCS)

(LCS) R3680202-2 07/16/21 00:30

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	976	97.6	80.0-120	
Calcium	10000	9920	99.2	80.0-120	

L1370026-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1370026-01 07/16/21 00:33 • (MS) R3680202-4 07/16/21 00:38 • (MSD) R3680202-5 07/16/21 00:41

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	36.8	1010	1000	97.7	96.5	1	75.0-125			1.21	20
Calcium	10000	45600	54900	54700	93.7	91.4	1	75.0-125			0.412	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
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.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
TRC Solutions - Dallas, TX

700 Highlander Blvd, Ste 210
Arlington, TX 76015

Billing Information:
Accounts Payable
21 Griffin Rd. N.
Windsor, CT 06095

Pres Chk

Report to: **Zak Sabatka** / Jason House

Email To: ZSabatka@trccompanies.com jhouse@trccompanies.com

Project Description: **Entergy Independence**

City/State Collected: Newark, AR

Please Circle: PT MT (CT) ET

Phone: **817-522-1026**

Client Project # 419735

Lab Project # **TRCDTX-ENTERGYINDY**

Collected by (print): Z. Sabatka

Site/Facility ID #

P.O. #

Collected by (signature):

Quote #

Immediately Packed on Ice N ___ Y ___

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

Date Results Needed: 7/13/21

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cl, F, pH, SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Total B, Ca 250mlHDPE-HNO3	L2	Remarks	Sample # (lab only)
RP-7	Grab	GW		6/23/21	0849	3	X	X	X			
RP-8		GW			0910	3						
RP-9		GW			0835	3						
RP-10		GW			1018	3						-01
MW-11		GW			1102	3						

Chain of Custody Page ___ of ___

Pace Analytical®

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

SDG # A141

Table # 137320

Acctnum: TRCDTX

Template: T189403

Prelogin: P854263

PM: 134 - Mark W. Beasley

PB: 6/11/21

Shipped Via: FedEX Ground

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

Remarks: Run MW-11 on separate report to other Samples

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 521733057506

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)
	6/23/21	1545	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
	6-23-21	1740	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / (No) HCL / MeoH TBR

Temp: 3.6+1.0=3.8 Bottles Received: 15

Date: 6/24/21 Time: 1100

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

TRC

WATER SAMPLE LOG

PROJECT NAME: ISES	PREPARED		CHECKED	
PROJECT NUMBER: 419735	BY:	DATE:	BY:	DATE:

SAMPLE ID: 701S-R WELL DIAMETER: ☐ 2" ☐ 4" ☐ 6" ☐ OTHER _____

WELL MATERIAL: ☐ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER _____

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER _____

PURGING	TIME: 1031	DATE: 6/18/21	SAMPLE	TIME: 1051	DATE: 6/18/21

PURGE METHOD: ☐ PUMP _____ ☐ BAILER _____

DEPTH TO WATER: 25.67 T/ PVC

DEPTH TO BOTTOM: _____ T/ PVC

PUMP INTAKE DEPTH: _____ T/ PVC

FLOW-THRU CELL VOLUME _____ LITERS

WELL VOLUME: _____ ☐ LITERS ☐ GALLONS

VOLUME REMOVED: _____ ☐ LITERS ☐ GALLONS

COLOR: _____ ODOR: _____

TURBIDITY ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☐ OTHER

PH: _____ SU CONDUCTIVITY: _____ umhos/cm

ORP: _____ mV DO: _____ mg/L

TURBIDITY: _____ NTU ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: _____ °C OTHER: _____

COLOR: _____ ODOR: _____

FILTRATE (0.45 um) ☐ YES ☐ NO

FILTRATE COLOR: _____ FILTRATE ODOR: _____

QC SAMPLE: ☐ MS/MSD ☐ DUP- _____

COMMENTS: FB-01 @ 1040

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY MS (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GAL OR L)
1031	Start pump								INITIAL
1036	500	6.80	1.447	—	9.04	5.05	22.01	25.68	2.5L
1041	500	6.78	1.534	—	8.35	3.52	20.03	25.68	5L
1046	500	6.74	1.536	—	7.88	2.60	19.79	25.68	7.5L
1051	500	6.74	1.524	—	7.45	3.18	19.85	25.69	10L

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 10 % COND.: +/- 10 % ORP: +/- 10 % D.O.: +/- 10 % TURB: +/- 10 % or </= 5 TEMP.: +/- 0.5°C

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD: _____	DATE SHIPPED: _____	AIRBILL NUMBER: _____
COC NUMBER: _____	SIGNATURE: _____	DATE SIGNED: _____

TRC

WATER SAMPLE LOG

PROJECT NAME:	PREPARED		CHECKED	
PROJECT NUMBER:	BY:	DATE:	BY:	DATE:

SAMPLE ID: 7025 | WELL DIAMETER: ☐ 2" ☐ 4" ☐ 6" ☐ OTHER _____

WELL MATERIAL: ☐ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER _____

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER _____

PURGING	TIME: 1450	DATE: 6/17/21	SAMPLE	TIME: 1502	DATE: 6/17/21

PURGE METHOD: ☐ PUMP _____ ☐ BAILER _____

DEPTH TO WATER: 23.52 T/ PVC

DEPTH TO BOTTOM: _____ T/ PVC

PUMP INTAKE DEPTH: _____ T/ PVC

FLOW-THRU CELL VOLUME _____ LITERS

WELL VOLUME: _____ ☐ LITERS ☐ GALLONS

VOLUME REMOVED: _____ ☐ LITERS ☐ GALLONS

COLOR: _____ ODOR: _____

TURBIDITY ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☐ OTHER

PH: _____ SU | CONDUCTIVITY: _____ umhos/cm

ORP: _____ mV | DO: _____ mg/L

TURBIDITY: _____ NTU

☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: _____ °C | OTHER: _____

COLOR: _____ | ODOR: _____

FILTRATE (0.45 um) ☐ YES ☐ NO

FILTRATE COLOR: _____ | FILTRATE ODOR: _____

QC SAMPLE: ☐ MS/MSD ☐ DUP- _____

COMMENTS: MW-2

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GAL OR L)
1450	start		Sampling						INITIAL
1453		6.75	1.11	130	0.70	0.0	19.43	23.53	
1456		6.62	1.12	137	0.00	0.0	18.81	23.54	
1459		6.56	1.13	142	0.00	0.0	18.61	23.54	
1502		6.55	1.13	144	0.00	0.00	18.90	23.54	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 10 % COND.: +/- 10 % ORP: +/- 10 % D.O.: +/- 10 % TURB: +/- 10 % or </= 5 TEMP.: +/- 0.5°C

BOTTLES FILLED | PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD: _____	DATE SHIPPED: _____	AIRBILL NUMBER: _____
COC NUMBER: _____	SIGNATURE: _____	DATE SIGNED: _____

TRC

WATER SAMPLE LOG

PROJECT NAME: ISES	PREPARED		CHECKED	
PROJECT NUMBER: 419735	BY:	DATE:	BY:	DATE:

SAMPLE ID: 7035 | WELL DIAMETER: ☑ 2" ☐ 4" ☐ 6" ☐ OTHER _____

WELL MATERIAL: ☐ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER _____

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER _____

PURGING	TIME: 1418	DATE: 6/18/21	SAMPLE	TIME: 1436	DATE: 6/18/21

PURGE METHOD: ☐ PUMP _____ ☐ BAILER _____

DEPTH TO WATER: 25.63 T/ PVC

DEPTH TO BOTTOM: _____ T/ PVC

PUMP INTAKE DEPTH: _____ T/ PVC

FLOW-THRU CELL VOLUME _____ LITERS

WELL VOLUME: _____ ☐ LITERS ☐ GALLONS

VOLUME REMOVED: _____ ☐ LITERS ☐ GALLONS

COLOR: _____ ODOR: _____

TURBIDITY ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☐ OTHER

PH: _____ SU CONDUCTIVITY: _____ umhos/cm

ORP: _____ mV DO: _____ mg/L

TURBIDITY: _____ NTU ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: _____ °C OTHER: _____

COLOR: _____ ODOR: _____

FILTRATE (0.45 um) ☐ YES ☐ NO

FILTRATE COLOR: _____ FILTRATE ODOR: _____

QC SAMPLE: ☐ MS/MSD ☐ DUP- _____

COMMENTS: MW-3

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GAL OR L)
1418	Start Pump								INITIAL
1421		7.35	0.868	—	13.62	2.12	24.93	25.69	
1424		7.13	0.984	—	8.86	3.81	18.19	25.71	
1427		7.09	0.998	—	7.14	2.81	18.00	25.71	
1430		7.09	0.990	—	6.89	2.73	17.97	25.71	
1433		7.10	0.993	—	6.94	3.01	18.01	25.71	
1436		7.09	0.991	—	6.69	2.85	17.92	25.72	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 10 % COND.: +/- 10 % ORP: +/- 10 % D.O.: +/- 10 % TURB: +/- 10 % or </= 5 TEMP.: +/- 0.5°C

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD: _____	DATE SHIPPED: _____	AIRBILL NUMBER: _____
COC NUMBER: _____	SIGNATURE: _____	DATE SIGNED: _____

TRC

WATER SAMPLE LOG

PROJECT NAME: ISES	PREPARED		CHECKED	
PROJECT NUMBER: 419735	BY:	DATE:	BY:	DATE:

SAMPLE ID: 7065 | WELL DIAMETER: ☐ 2" ☐ 4" ☐ 6" ☐ OTHER _____

WELL MATERIAL: ☐ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER _____

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER _____

PURGING	TIME: 1342	DATE: 6/18/21

PURGE METHOD: ☐ PUMP _____ ☐ BAILER _____

DEPTH TO WATER: 23.03 T/ PVC

DEPTH TO BOTTOM: _____ T/ PVC

PUMP INTAKE DEPTH: _____ T/ PVC

FLOW-THRU CELL VOLUME _____ LITERS

WELL VOLUME: _____ ☐ LITERS ☐ GALLONS

VOLUME REMOVED: _____ ☐ LITERS ☐ GALLONS

COLOR: _____ ODOR: _____

TURBIDITY ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☐ OTHER

SAMPLE	TIME: 1357	DATE: 6/18/21

PH: _____ SU CONDUCTIVITY: _____ umhos/cm

ORP: _____ mV DO: _____ mg/L

TURBIDITY: _____ NTU ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: _____ °C OTHER: _____

COLOR: _____ ODOR: _____

FILTRATE (0.45 um) ☐ YES ☐ NO

FILTRATE COLOR: _____ FILTRATE ODOR: _____

QC SAMPLE: ☐ MS/MSD ☐ DUP- _____

COMMENTS: MW-6

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GAL OR L)
1342									INITIAL
1345		6.66	0.640	—	9.63	9.06	18.26	23.06	
1348		6.64	0.643	—	10.70	9.33	18.12	23.06	
1351		6.59	0.461	—	17.21	6.44	18.01	23.06	
1354		6.53	0.457	—	15.84	5.31	17.88	23.06	
1357		6.57	0.468	—	15.97	4.24	17.90	23.06	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 10 % COND.: +/- 10 % ORP: +/- 10 % D.O.: +/- 10 % TURB: +/- 10 % or </= 5 TEMP.: +/- 0.5°C

BOTTLES FILLED | PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD: _____	DATE SHIPPED: _____	AIRBILL NUMBER: _____
COC NUMBER: _____	SIGNATURE: _____	DATE SIGNED: _____

TRC

WATER SAMPLE LOG

PROJECT NAME: ISES	PREPARED		CHECKED	
PROJECT NUMBER: 419735	BY:	DATE:	BY:	DATE:

SAMPLE ID: ~~207S~~ 707S WELL DIAMETER: ☐ 2" ☐ 4" ☐ 6" ☐ OTHER _____

WELL MATERIAL: ☐ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER _____

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER _____

PURGING	TIME: 1641	DATE: 6/18/21	SAMPLE	TIME: 1656	DATE: 6/18/21

PURGE METHOD: ☐ PUMP _____ ☐ BAILER _____

DEPTH TO WATER: 22.94 T/ PVC

DEPTH TO BOTTOM: _____ T/ PVC

PUMP INTAKE DEPTH: _____ T/ PVC

FLOW-THRU CELL VOLUME _____ LITERS

WELL VOLUME: _____ ☐ LITERS ☐ GALLONS

VOLUME REMOVED: _____ ☐ LITERS ☐ GALLONS

COLOR: _____ ODOR: _____

TURBIDITY ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☐ OTHER

PH: _____ SU CONDUCTIVITY: _____ umhos/cm

ORP: _____ mV DO: _____ mg/L

TURBIDITY: _____ NTU

☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: _____ °C OTHER: _____

COLOR: _____ ODOR: _____

FILTRATE (0.45 um) ☐ YES ☐ NO

FILTRATE COLOR: _____ FILTRATE ODOR: _____

QC SAMPLE: ☐ MS/MSD ☐ DUP- _____

COMMENTS: MW-7

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GAL OR L)
1641									INITIAL
1644		7.61	0.840	—	4.72	5.67	18.46		
1647		7.57	0.832	—	4.07	4.32	18.07		
1650		7.56	0.832	—	3.99	3.07	17.98		
1653		7.55	0.832	—	4.07	2.09	17.89		
1656		7.55	0.832	—	4.07	2.57	17.88		

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 10 % COND.: +/- 10 % ORP: +/- 10 % D.O.: +/- 10 % TURB: +/- 10 % or </= 5 TEMP.: +/- 0.5°C

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD: _____	DATE SHIPPED: _____	AIRBILL NUMBER: _____
COC NUMBER: _____	SIGNATURE: _____	DATE SIGNED: _____

REVISED 06/2011

TRC

WATER SAMPLE LOG

PROJECT NAME: ISES	PREPARED		CHECKED	
PROJECT NUMBER: 419735	BY:	DATE:	BY:	DATE:

SAMPLE ID: MW-6 ~~7~~ 8

WELL DIAMETER: ☐ 2" ☐ 4" ☐ 6" ☐ OTHER _____

WELL MATERIAL: ☐ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER _____

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER _____

PURGING	TIME: 1037	DATE: 6/17/21

PURGE METHOD: ☒ PUMP bladder ☐ BAILER 3 GPM

DEPTH TO WATER: 22.90 T/ PVC

DEPTH TO BOTTOM: _____ T/ PVC

PUMP INTAKE DEPTH: _____ T/ PVC

FLOW-THRU CELL VOLUME _____ LITERS

WELL VOLUME: _____ ☐ LITERS ☐ GALLONS

VOLUME REMOVED: _____ ☐ LITERS ☐ GALLONS

COLOR: _____ ODOR: _____

TURBIDITY

☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☐ OTHER

SAMPLE	TIME: 1057	DATE: 6/17/21

PH: _____ SU CONDUCTIVITY: _____ umhos/cm

ORP: _____ mV DO: _____ mg/L

TURBIDITY: _____ NTU

☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: _____ °C OTHER: _____

COLOR: _____ ODOR: _____

FILTRATE (0.45 um) ☐ YES ☐ NO

FILTRATE COLOR: _____ FILTRATE ODOR: _____

QC SAMPLE: ☐ MS/MSD ☐ DUP- _____

COMMENTS:

Also MW-708S

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GAL OR L)
1037	Start Pump								INITIAL
1042	600	7.22	1.40	164	5.68	0.0	21.63	22.98	
1047		6.22	1.53	223	3.31	0.0	18.70	22.99	
1052		6.19	1.53	226	3.27	0.0	18.85	23.00	
1057		6.20	1.52	226	3.20	0.0	18.91	23.00	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 10 % COND.: +/- 10 % ORP: +/- 10 % D.O.: +/- 10 % TURB: +/- 10 % or </= 5 TEMP.: +/- 0.5°C

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD: _____	DATE SHIPPED: _____	AIRBILL NUMBER: _____
COC NUMBER: _____	SIGNATURE: _____	DATE SIGNED: _____

TRC

WATER SAMPLE LOG

PROJECT NAME: ISES	PREPARED		CHECKED	
PROJECT NUMBER: 419735	BY:	DATE: 6/17/21	BY:	DATE:

SAMPLE ID: MW-709S | WELL DIAMETER: ☐ 2" ☐ 4" ☐ 6" ☐ OTHER _____

WELL MATERIAL: ☐ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER _____

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER _____

PURGING	TIME: 0950	DATE: 6/17/21	SAMPLE	TIME: 1005	DATE: 6/17/21

PURGE METHOD: ☒ PUMP Bladder (3 CPM) ☐ BAILER

DEPTH TO WATER: 21.85 T/ PVC

DEPTH TO BOTTOM: _____ T/ PVC

PUMP INTAKE DEPTH: _____ T/ PVC

FLOW-THRU CELL VOLUME _____ LITERS

WELL VOLUME: _____ ☐ LITERS ☐ GALLONS

VOLUME REMOVED: _____ ☐ LITERS ☐ GALLONS

COLOR: _____ ODOR: _____

TURBIDITY

☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☐ OTHER

PH: _____ SU CONDUCTIVITY: _____ umhos/cm

ORP: _____ mV DO: _____ mg/L

TURBIDITY: _____ NTU

☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: _____ °C OTHER: _____

COLOR: _____ ODOR: _____

FILTRATE (0.45 um) ☐ YES ☐ NO

FILTRATE COLOR: _____ FILTRATE ODOR: _____

QC SAMPLE: ☐ MS/MSD ☐ DUP- _____

COMMENTS: Also MW-9

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GAL OR L)
0950	↓	6.14	1.15	234	2.36	0.0	23.65	21.85	INITIAL
0955									
1000	600	6.23	1.18	233	1.64	0.0	22.13	21.86	
1005		6.24	1.19	237	1.49	0.0	21.94	21.87	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 10 % COND.: +/- 10 % ORP: +/- 10 % D.O.: +/- 10 % TURB: +/- 10 % or </= 5 TEMP.: +/- 0.5°C

BOTTLES FILLED | PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD: _____	DATE SHIPPED: _____	AIRBILL NUMBER: _____
COC NUMBER: _____	SIGNATURE: _____	DATE SIGNED: _____

TRC

WATER SAMPLE LOG

PROJECT NAME: Entergy Independence	PREPARED		CHECKED	
PROJECT NUMBER: 419735	BY:	DATE:	BY:	DATE:

SAMPLE ID: MW-11 WELL DIAMETER: ☑ 2" ☐ 4" ☐ 6" ☐ OTHER _____

WELL MATERIAL: ☑ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER _____

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER _____

PURGING	TIME: 1042	DATE: 6/23/21	SAMPLE	TIME: 1102	DATE: 6/23/21

PURGE METHOD: ☑ PUMP bladder ☐ BAILER _____

DEPTH TO WATER: 29.17 T/ PVC

DEPTH TO BOTTOM: _____ T/ PVC

PUMP INTAKE DEPTH: _____ T/ PVC

FLOW-THRU CELL VOLUME _____ LITERS

WELL VOLUME: _____ ☐ LITERS ☐ GALLONS

VOLUME REMOVED: _____ ☐ LITERS ☐ GALLONS

COLOR: _____ ODOR: _____

TURBIDITY ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☐ OTHER

PH: _____ SU CONDUCTIVITY: _____ umhos/cm

ORP: _____ mV DO: _____ mg/L

TURBIDITY: _____ NTU ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: _____ °C OTHER: _____

COLOR: _____ ODOR: _____

FILTRATE (0.45 um) ☐ YES ☐ NO

FILTRATE COLOR: _____ FILTRATE ODOR: _____

QC SAMPLE: ☐ MS/MSD ☐ DUP- _____

COMMENTS:

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GAL OR L)
1042	start	Pump							INITIAL
1047	400	6.50	0.561	176	1.02	234	18.52	29.31	
1050	400	6.51	0.562	85	0.64	72.9	18.27	29.49	
1053	400	6.46	0.560	58	0.28	33.5	18.17	29.41	
1056	400	6.46	0.559	53	0.28	19.3	17.98	29.46	
1059	400	6.47	0.562	49	1.47	10.6	18.00	29.55	
1102	400	6.47	0.563	49	1.51	6.9	17.99	29.59	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 10 % COND.: +/- 10 % ORP: +/- 10 % D.O.: +/- 10 % TURB: +/- 10 % or </= 5 TEMP.: +/- 0.5°C

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD: _____	DATE SHIPPED: _____	AIRBILL NUMBER: _____
COC NUMBER: _____	SIGNATURE: _____	DATE SIGNED: _____

TRC

WATER SAMPLE LOG

PROJECT NAME: ISES	PREPARED		CHECKED	
PROJECT NUMBER: 419735	BY:	DATE:	BY:	DATE:

SAMPLE ID: 705 WELL DIAMETER: ☐ 2" ☐ 4" ☐ 6" ☐ OTHER _____

WELL MATERIAL: ☐ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER _____

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER _____

PURGING	TIME: 1505	DATE: 6/18/21	SAMPLE	TIME: 1523	DATE: 6/18/21

PURGE METHOD: ☐ PUMP _____ ☐ BAILER _____

DEPTH TO WATER: 25.84 T/ PVC

DEPTH TO BOTTOM: _____ T/ PVC

PUMP INTAKE DEPTH: _____ T/ PVC

FLOW-THRU CELL VOLUME _____ LITERS

WELL VOLUME: _____ ☐ LITERS ☐ GALLONS

VOLUME REMOVED: _____ ☐ LITERS ☐ GALLONS

COLOR: _____ ODOR: _____

TURBIDITY ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☐ OTHER

PH: _____ SU CONDUCTIVITY: _____ umhos/cm

ORP: _____ mV DO: _____ mg/L

TURBIDITY: _____ NTU ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: _____ °C OTHER: _____

COLOR: _____ ODOR: _____

FILTRATE (0.45 um) ☐ YES ☐ NO

FILTRATE COLOR: _____ FILTRATE ODOR: _____

QC SAMPLE: ☐ MS/MSD ☐ DUP- _____

COMMENTS: MW-10

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GAL OR L)
1505									INITIAL
1508		7.19	1.487	—	7.11	3.80	19.45	25.87	
1511		7.13	1.471	—	7.01	2.22	19.51	25.88	
1514		7.11	1.476	—	6.67	1.46	19.58	25.88	
1517		7.10	1.469	—	6.20	2.31	19.27	25.93	
1520		7.10	1.470	—	6.19	0.99	19.13	25.88	
1523		7.10	1.466	—	6.06	0.95	19.05	25.89	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 10 % COND.: +/- 10 % ORP: +/- 10 % D.O.: +/- 10 % TURB: +/- 10 % or </= 5 TEMP.: +/- 0.5°C

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD: _____	DATE SHIPPED: _____	AIRBILL NUMBER: _____
COC NUMBER: _____	SIGNATURE: _____	DATE SIGNED: _____

TRC

WATER SAMPLE LOG

PROJECT NAME: ISES	PREPARED		CHECKED	
PROJECT NUMBER: 49735	BY:	DATE:	BY:	DATE:

SAMPLE ID: 711S WELL DIAMETER: ☐ 2" ☐ 4" ☐ 6" ☐ OTHER _____

WELL MATERIAL: ☐ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER _____

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER _____

PURGING	TIME: 1554	DATE: 6/18/21	SAMPLE	TIME: 1612	DATE: 6/18/21

PURGE METHOD: ☐ PUMP _____ ☐ BAILER _____

DEPTH TO WATER: 25.48 T/ PVC

DEPTH TO BOTTOM: _____ T/ PVC

PUMP INTAKE DEPTH: _____ T/ PVC

FLOW-THRU CELL VOLUME _____ LITERS

WELL VOLUME: _____ ☐ LITERS ☐ GALLONS

VOLUME REMOVED: _____ ☐ LITERS ☐ GALLONS

COLOR: _____ ODOR: _____

TURBIDITY ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☐ OTHER

PH: _____ SU CONDUCTIVITY: _____ umhos/cm

ORP: _____ mV DO: _____ mg/L

TURBIDITY: _____ NTU ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: _____ °C OTHER: _____

COLOR: _____ ODOR: _____

FILTRATE (0.45 um) ☐ YES ☐ NO

FILTRATE COLOR: _____ FILTRATE ODOR: _____

QC SAMPLE: ☐ MS/MSD ☐ DUP- _____

COMMENTS: Turbidity spiked during sampling MW-11

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GAL OR L)
1554									INITIAL
1557		6.96	0.590	—	12.25	0.40	18.33	25.48	
1600		6.98	0.592	—	15.08	58.9	18.09	25.47	
1603		6.97	0.576	—	15.00	25.8	17.96	25.47	
1606		6.94	0.578	—	14.41	16.6	17.89	25.47	
1609		6.94	0.581	—	14.17	17.9	17.87	25.48	
1612		6.94	0.581	—	14.22	19.3	17.80	25.50	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 10 % COND.: +/- 10 % ORP: +/- 10 % D.O.: +/- 10 % TURB: +/- 10 % or </= 5 TEMP.: +/- 0.5°C

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD: _____	DATE SHIPPED: _____	AIRBILL NUMBER: _____
COC NUMBER: _____	SIGNATURE: _____	DATE SIGNED: _____

TRC

WATER SAMPLE LOG

PROJECT NAME: ISES	PREPARED		CHECKED	
PROJECT NUMBER: #19735	BY:	DATE:	BY:	DATE:

SAMPLE ID: 715 WELL DIAMETER: ☐ 2" ☐ 4" ☐ 6" ☐ OTHER _____

WELL MATERIAL: ☐ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER _____

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER _____

PURGING	TIME: 1543	DATE: 6/18/21	SAMPLE	TIME: ~~1612~~	DATE: 6/18/21

PURGE METHOD: ☐ PUMP _____ ☐ BAILER _____

DEPTH TO WATER: 24.60 T/ PVC

DEPTH TO BOTTOM: _____ T/ PVC

PUMP INTAKE DEPTH: _____ T/ PVC

FLOW-THRU CELL VOLUME _____ LITERS

WELL VOLUME: _____ ☐ LITERS ☐ GALLONS

VOLUME REMOVED: _____ ☐ LITERS ☐ GALLONS

COLOR: yellowish/tan ODOR: _____

TURBIDITY

☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☐ OTHER

PH: _____ SU CONDUCTIVITY: _____ umhos/cm

ORP: _____ mV DO: _____ mg/L

TURBIDITY: _____ NTU

☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: _____ °C OTHER: _____

COLOR: _____ ODOR: _____

FILTRATE (0.45 um) ☐ YES ☐ NO

FILTRATE COLOR: _____ FILTRATE ODOR: _____

QC SAMPLE: ☐ MS/MSD ☐ DUP- _____

COMMENTS: MW-11

(3) DNS

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GAL OR L)
1543	Start	purging							INITIAL
1546		6.42	0.524	29	0.00	41.6	19.09	24.60	
1549		6.37	0.538	9	0.00	71.2	18.72	24.60	
1552		6.80	0.531	-12	0.00	40.8	20.40	24.61	
1555		6.81	0.526	-9	0.00	40.2	21.99	24.61	
1558		6.34	0.537	10	0.00	25.5	18.63	24.61	
1601		6.36	0.568	17	0.00	39.1	18.35	24.62	
1604		6.32	0.602	23	0.00	45.9	18.17	24.62	
1607		6.35	0.625	26	0.00	46.1	18.35	24.62	
1610		6.38	0.634	36	0.00	0.00	18.33	24.63	

Finish & Sample

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 10 % COND.: +/- 10 % ORP: +/- 10 % D.O.: +/- 10 % TURB: +/- 10 % or </= 5 TEMP.: +/- 0.5°C

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD: _____	DATE SHIPPED: _____	AIRBILL NUMBER: _____
COC NUMBER: _____	SIGNATURE: _____	DATE SIGNED: _____

PAGE ______ OF ______

TRC

WATER SAMPLE LOG

PROJECT NAME: ISES	PREPARED		CHECKED	
PROJECT NUMBER: 419735	BY:	DATE:	BY:	DATE:

SAMPLE ID: MW-13 WELL DIAMETER: ☐ 2" ☐ 4" ☐ 6" ☐ OTHER ______

WELL MATERIAL: ☐ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER ______

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER ______

PURGING	TIME: 0940	DATE: 6/18/21	SAMPLE	TIME: 0955	DATE: 6/18/21

PURGE METHOD: ☐ PUMP ______ ☐ BAILER ______

DEPTH TO WATER: 20.69 T/ PVC

DEPTH TO BOTTOM: ______ T/ PVC

PUMP INTAKE DEPTH: ______ T/ PVC

FLOW-THRU CELL VOLUME ______ LITERS

WELL VOLUME: ______ ☐ LITERS ☐ GALLONS

VOLUME REMOVED: ______ ☐ LITERS ☐ GALLONS

COLOR: ______ ODOR: ______

TURBIDITY: ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☐ OTHER

PH: ______ SU CONDUCTIVITY: ______ umhos/cm

ORP: ______ mV DO: ______ mg/L

TURBIDITY: ______ NTU ☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: ______ °C OTHER: ______

COLOR: ______ ODOR: ______

FILTRATE (0.45 um) ☐ YES ☐ NO

FILTRATE COLOR: ______ FILTRATE ODOR: ______

QC SAMPLE: ☐ MS/MSD ☐ DUP- ______

COMMENTS:

YSI from GBMC

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GAL OR L)
0940									INITIAL
0943	500	7.01	0.749	~~745~~	16.52	9.51	18.04	20.74	1.5L
0946	500	7.06	0.777	—	16.47	8.99	17.26	20.74	3.0L
0949	500	7.14	0.788	—	16.42	9.17	17.13	20.76	4.5L
0952	500	7.14	0.786	—	16.15	9.53	17.04	20.75	6.0L
0955	500	7.14	0.785	—	16.10	9.90	17.01	20.74	7.5L

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 10 % COND.: +/- 10 % ORP: +/- 10 % D.O.: +/- 10 % TURB: +/- 10 % or </= 5 TEMP.: +/- 0.5°C

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - ______

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD: ______	DATE SHIPPED: ______	AIRBILL NUMBER: ______
COC NUMBER: ______	SIGNATURE: ______	DATE SIGNED: ______

REVISED 06/2011

ANALYTICAL REPORT

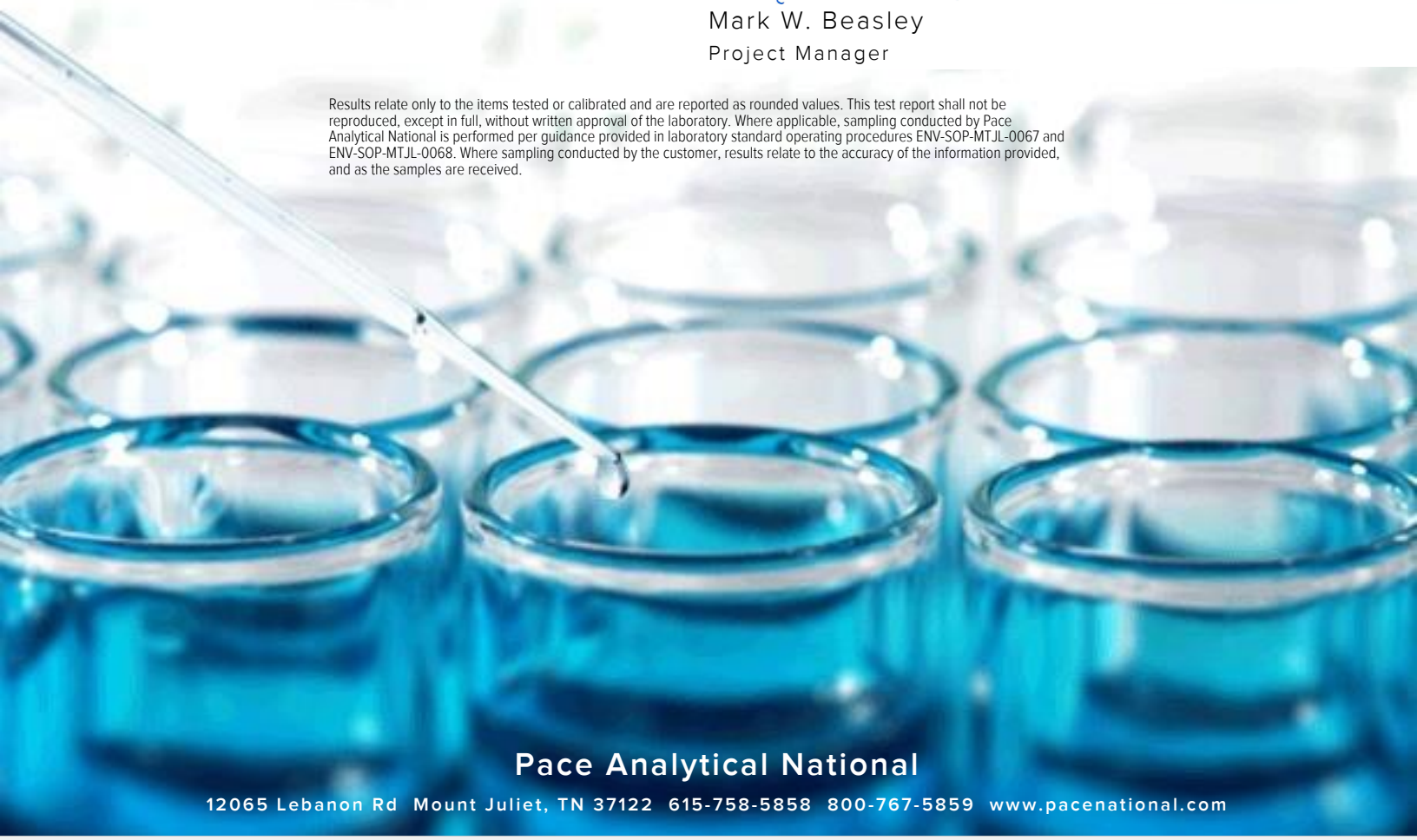
December 24, 2021

GBMc & Associates - Bryant, AR

Sample Delivery Group:	L1433506
Samples Received:	11/19/2021
Project Number:	1145-21-081
Description:	Entergy - Independence
Site:	LANDFILL - CCR
Report To:	Jonathan 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

TABLE OF CONTENTS

MW-1 (701S-R) L1433506-01 GW

Collected by: Danielle Braund | Collected date/time: 11/16/21 13:15 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779132	1	11/23/21 12:58	11/23/21 17:00	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786886	1	12/12/21 04:01	12/12/21 04:01	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786886	5	12/12/21 05:00	12/12/21 05:00	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792036	1	12/21/21 07:16	12/23/21 04:37	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1790950	1	12/20/21 04:29	12/20/21 11:45	LAT	Mt. Juliet, TN

MW-2 (702S) L1433506-02 GW

Collected by: Danielle Braund | Collected date/time: 11/16/21 10:45 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779132	1	11/23/21 12:58	11/23/21 17:00	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786886	1	12/12/21 05:19	12/12/21 05:19	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786886	5	12/13/21 16:27	12/13/21 16:27	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792036	1	12/21/21 07:16	12/23/21 04:04	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1790950	1	12/20/21 04:29	12/20/21 11:48	LAT	Mt. Juliet, TN

MW-3 (703S) L1433506-03 GW

Collected by: Danielle Braund | Collected date/time: 11/15/21 16:45 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1778738	1	11/22/21 17:16	11/22/21 18:06	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786873	1	12/10/21 03:10	12/10/21 03:10	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792036	1	12/21/21 07:16	12/23/21 04:39	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1790950	1	12/20/21 04:29	12/20/21 11:52	LAT	Mt. Juliet, TN

MW-6 (706S) L1433506-04 GW

Collected by: Danielle Braund | Collected date/time: 11/16/21 08:23 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779132	1	11/23/21 12:58	11/23/21 17:00	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786886	1	12/12/21 05:39	12/12/21 05:39	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786886	5	12/13/21 16:38	12/13/21 16:38	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792036	1	12/21/21 07:16	12/23/21 04:42	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1790950	1	12/20/21 04:29	12/20/21 11:55	LAT	Mt. Juliet, TN

MW-7 (707S) L1433506-05 GW

Collected by: Danielle Braund | Collected date/time: 11/15/21 14:46 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1778738	1	11/22/21 17:16	11/22/21 18:06	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786873	1	12/10/21 03:58	12/10/21 03:58	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792036	1	12/21/21 07:16	12/23/21 04:45	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1790950	1	12/20/21 04:29	12/20/21 11:58	LAT	Mt. Juliet, TN

MW-8 (708S) L1433506-06 GW

Collected by: Danielle Braund | Collected date/time: 11/16/21 14:28 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779132	1	11/23/21 12:58	11/23/21 17:00	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786886	1	12/12/21 05:59	12/12/21 05:59	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786886	5	12/12/21 06:19	12/12/21 06:19	ELN	Mt. Juliet, TN

MW-8 (708S) L1433506-06 GW

Collected by: Danielle Braund | Collected date/time: 11/16/21 14:28 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1792036	1	12/21/21 07:16	12/23/21 04:47	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1790950	1	12/20/21 04:29	12/20/21 12:02	LAT	Mt. Juliet, TN

MW-9 (709S) L1433506-07 GW

Collected by: Danielle Braund | Collected date/time: 11/16/21 13:50 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779132	1	11/23/21 12:58	11/23/21 17:00	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786886	1	12/12/21 06:38	12/12/21 06:38	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786886	5	12/13/21 16:50	12/13/21 16:50	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792036	1	12/21/21 07:16	12/23/21 04:50	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1790950	1	12/20/21 04:29	12/20/21 12:05	LAT	Mt. Juliet, TN

MW-10 (710S) L1433506-08 GW

Collected by: Danielle Braund | Collected date/time: 11/15/21 17:05 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1778738	1	11/22/21 17:16	11/22/21 18:06	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786873	1	12/10/21 04:14	12/10/21 04:14	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792036	1	12/21/21 07:16	12/23/21 04:53	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1790950	1	12/20/21 04:29	12/20/21 12:22	LAT	Mt. Juliet, TN

MW-11 (711S) L1433506-09 GW

Collected by: Danielle Braund | Collected date/time: 11/15/21 14:00 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1778738	1	11/22/21 17:16	11/22/21 18:06	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786873	1	12/10/21 04:30	12/10/21 04:30	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792036	1	12/21/21 07:16	12/23/21 04:55	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1790950	1	12/20/21 04:29	12/20/21 12:25	LAT	Mt. Juliet, TN

MW-13 (NOT 713S) L1433506-10 GW

Collected by: Danielle Braund | Collected date/time: 11/15/21 13:00 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1778738	1	11/22/21 17:16	11/22/21 18:06	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786873	1	12/10/21 04:46	12/10/21 04:46	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792036	1	12/21/21 07:16	12/23/21 05:03	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1790950	1	12/20/21 04:29	12/20/21 12:29	LAT	Mt. Juliet, TN

MW-17 L1433506-11 GW

Collected by: Danielle Braund | Collected date/time: 11/17/21 08:50 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779725	1	11/24/21 11:14	11/24/21 16:11	BRG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786873	1	12/10/21 05:01	12/10/21 05:01	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792036	1	12/21/21 07:16	12/23/21 05:06	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1790950	1	12/20/21 04:29	12/20/21 12:32	LAT	Mt. Juliet, TN

MW-18 L1433506-12 GW

Collected by: Danielle Braund | Collected date/time: 11/16/21 16:05 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779132	1	11/23/21 12:58	11/23/21 17:00	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786886	1	12/12/21 06:58	12/12/21 06:58	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792036	1	12/21/21 07:16	12/23/21 05:09	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1790950	1	12/20/21 04:29	12/20/21 12:35	LAT	Mt. Juliet, TN

FIELD BLANK 1 CCR L1433506-13 GW

Collected by: Danielle Braund | Collected date/time: 11/17/21 12:00 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779723	1	11/24/21 11:12	11/24/21 15:02	BRG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1788341	1	12/14/21 02:35	12/14/21 02:35	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792036	1	12/21/21 07:16	12/23/21 05:11	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1790950	1	12/20/21 04:29	12/20/21 12:39	LAT	Mt. Juliet, TN

DUPLICATE 1 MW-1R L1433506-14 GW

Collected by: Danielle Braund | Collected date/time: 11/16/21 13:15 | Received date/time: 11/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1779132	1	11/23/21 12:58	11/23/21 17:00	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786886	1	12/12/21 07:18	12/12/21 07:18	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1786886	5	12/12/21 07:37	12/12/21 07:37	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1792036	1	12/21/21 07:16	12/23/21 05:14	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1790956	1	12/21/21 04:23	12/23/21 14:02	LD	Mt. Juliet, TN

CASE NARRATIVE

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

Mark W. Beasley
Project Manager

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

Analyte	Result	Units
pH (On Site)	7.06	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	924		13.3	1	11/23/2021 17:00	WG1779132

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	146		5.00	5	12/12/2021 05:00	WG1786886
Fluoride	ND		0.150	1	12/12/2021 04:01	WG1786886
Sulfate	ND		5.00	1	12/12/2021 04:01	WG1786886

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	12/23/2021 04:37	WG1792036

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	119		1.00	1	12/20/2021 11:45	WG1790950

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

Analyte	Result	Units
pH (On Site)	8.04	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	750		10.0	1	11/23/2021 17:00	WG1779132

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	10.4		1.00	1	12/12/2021 05:19	WG1786886
Fluoride	0.202		0.150	1	12/12/2021 05:19	WG1786886
Sulfate	271		25.0	5	12/13/2021 16:27	WG1786886

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	12/23/2021 04:04	WG1792036

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	114		1.00	1	12/20/2021 11:48	WG1790950

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

Analyte	Result	Units
pH (On Site)	7.26	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	510		10.0	1	11/22/2021 18:06	WG1778738

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	55.6		1.00	1	12/10/2021 03:10	WG1786873
Fluoride	0.168		0.150	1	12/10/2021 03:10	WG1786873
Sulfate	98.9		5.00	1	12/10/2021 03:10	WG1786873

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	12/23/2021 04:39	WG1792036

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	70.1		1.00	1	12/20/2021 11:52	WG1790950

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

Analyte	Result	Units
pH (On Site)	6.62	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	422		10.0	1	11/23/2021 17:00	WG1779132

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	30.5		1.00	1	12/12/2021 05:39	WG1786886
Fluoride	ND		0.150	1	12/12/2021 05:39	WG1786886
Sulfate	103		25.0	5	12/13/2021 16:38	WG1786886

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	12/23/2021 04:42	WG1792036

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	63.7		1.00	1	12/20/2021 11:55	WG1790950

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

Analyte	Result	Units
pH (On Site)	7.48	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	627		10.0	1	11/22/2021 18:06	WG1778738

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	94.3		1.00	1	12/10/2021 03:58	WG1786873
Fluoride	0.522		0.150	1	12/10/2021 03:58	WG1786873
Sulfate	76.4		5.00	1	12/10/2021 03:58	WG1786873

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	12/23/2021 04:45	WG1792036

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	67.0		1.00	1	12/20/2021 11:58	WG1790950

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

Analyte	Result	Units
pH (On Site)	6.96	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	900		13.3	1	11/23/2021 17:00	WG1779132

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	141		5.00	5	12/12/2021 06:19	WG1786886
Fluoride	0.168		0.150	1	12/12/2021 05:59	WG1786886
Sulfate	246		25.0	5	12/12/2021 06:19	WG1786886

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.201		0.200	1	12/23/2021 04:47	WG1792036

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	123		1.00	1	12/20/2021 12:02	WG1790950

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

Analyte	Result	Units
pH (On Site)	7.02	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	839		13.3	1	11/23/2021 17:00	WG1779132

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	46.0		1.00	1	12/12/2021 06:38	WG1786886
Fluoride	0.159		0.150	1	12/12/2021 06:38	WG1786886
Sulfate	328		25.0	5	12/13/2021 16:50	WG1786886

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.771		0.200	1	12/23/2021 04:50	WG1792036

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	107		1.00	1	12/20/2021 12:05	WG1790950

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

Analyte	Result	Units
pH (On Site)	7.24	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	481		10.0	1	11/22/2021 18:06	WG1778738

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	59.1		1.00	1	12/10/2021 04:14	WG1786873
Fluoride	0.152		0.150	1	12/10/2021 04:14	WG1786873
Sulfate	79.4		5.00	1	12/10/2021 04:14	WG1786873

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	12/23/2021 04:53	WG1792036

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	66.0		1.00	1	12/20/2021 12:22	WG1790950

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

Analyte	Result	Units
pH (On Site)	6.42	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	476		10.0	1	11/22/2021 18:06	WG1778738

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	58.7		1.00	1	12/10/2021 04:30	WG1786873
Fluoride	0.187		0.150	1	12/10/2021 04:30	WG1786873
Sulfate	75.2		5.00	1	12/10/2021 04:30	WG1786873

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	12/23/2021 04:55	WG1792036

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	78.2		1.00	1	12/20/2021 12:25	WG1790950

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

Analyte	Result	Units
pH (On Site)	6.52	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	427		10.0	1	11/22/2021 18:06	WG1778738

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	9.97		1.00	1	12/10/2021 04:46	WG1786873
Fluoride	0.276		0.150	1	12/10/2021 04:46	WG1786873
Sulfate	96.2		5.00	1	12/10/2021 04:46	WG1786873

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.346		0.200	1	12/23/2021 05:03	WG1792036

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	74.5		1.00	1	12/20/2021 12:29	WG1790950

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

Analyte	Result	Units
pH (On Site)	6.81	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	214		10.0	1	11/24/2021 16:11	WG1779725

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	5.52		1.00	1	12/10/2021 05:01	WG1786873
Fluoride	ND		0.150	1	12/10/2021 05:01	WG1786873
Sulfate	18.6		5.00	1	12/10/2021 05:01	WG1786873

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	12/23/2021 05:06	WG1792036

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	47.4		1.00	1	12/20/2021 12:32	WG1790950

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

Analyte	Result	Units
pH (On Site)	6.94	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	334		10.0	1	11/23/2021 17:00	WG1779132

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	5.76		1.00	1	12/12/2021 06:58	WG1786886
Fluoride	ND		0.150	1	12/12/2021 06:58	WG1786886
Sulfate	45.9		5.00	1	12/12/2021 06:58	WG1786886

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	12/23/2021 05:09	WG1792036

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	74.0		1.00	1	12/20/2021 12:35	WG1790950

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	ND		10.0	1	11/24/2021 15:02	WG1779723

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	ND		1.00	1	12/14/2021 02:35	WG1788341
Fluoride	ND		0.150	1	12/14/2021 02:35	WG1788341
Sulfate	ND		5.00	1	12/14/2021 02:35	WG1788341

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	12/23/2021 05:11	WG1792036

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	ND		1.00	1	12/20/2021 12:39	WG1790950

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

Analyte	Result	Units
pH (On Site)	7.06	su

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	931		13.3	1	11/23/2021 17:00	WG1779132

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	144		5.00	5	12/12/2021 07:37	WG1786886
Fluoride	0.157		0.150	1	12/12/2021 07:18	WG1786886
Sulfate	242		25.0	5	12/12/2021 07:37	WG1786886

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	12/23/2021 05:14	WG1792036

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	122		1.00	1	12/23/2021 14:02	WG1790956

Method Blank (MB)

(MB) R3733768-1 11/22/21 18:06

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

L1433215-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1433215-11 11/22/21 18:06 • (DUP) R3733768-3 11/22/21 18:06

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	190	198	1	4.12		5

L1433215-74 Original Sample (OS) • Duplicate (DUP)

(OS) L1433215-74 11/22/21 18:06 • (DUP) R3733768-4 11/22/21 18:06

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	39.0	ND	1	200	P1	5

Laboratory Control Sample (LCS)

(LCS) R3733768-2 11/22/21 18:06

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	7970	90.6	77.4-123	

Method Blank (MB)

(MB) R3734200-1 11/23/21 17:00

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

L1433506-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1433506-01 11/23/21 17:00 • (DUP) R3734200-3 11/23/21 17:00

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	924	943	1	2.00		5

L1433506-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1433506-06 11/23/21 17:00 • (DUP) R3734200-4 11/23/21 17:00

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	900	915	1	1.62		5

Laboratory Control Sample (LCS)

(LCS) R3734200-2 11/23/21 17:00

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

Method Blank (MB)

(MB) R3734302-1 11/24/21 15:02

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

L1432218-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1432218-03 11/24/21 15:02 • (DUP) R3734302-3 11/24/21 15:02

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	812	805	1	0.825		5

L1432740-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1432740-01 11/24/21 15:02 • (DUP) R3734302-4 11/24/21 15:02

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1940	1930	1	0.258		5

Laboratory Control Sample (LCS)

(LCS) R3734302-2 11/24/21 15:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8620	98.0	77.4-123	

Method Blank (MB)

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

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

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

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

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

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

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

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

Laboratory Control Sample (LCS)

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

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

Method Blank (MB)

(MB) R3739426-1 12/09/21 14:28

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

L1433215-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1433215-07 12/09/21 22:40 • (DUP) R3739426-3 12/09/21 22:56

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	4.06	4.07	1	0.157		15
Fluoride	ND	ND	1	0.000		15
Sulfate	31.4	31.4	1	0.0515		15

L1433506-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1433506-11 12/10/21 05:01 • (DUP) R3739426-6 12/10/21 05:17

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	5.52	5.56	1	0.599		15
Fluoride	ND	ND	1	0.824		15
Sulfate	18.6	18.7	1	0.233		15

Laboratory Control Sample (LCS)

(LCS) R3739426-2 12/09/21 14:44

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	39.1	97.8	80.0-120	
Fluoride	8.00	8.00	100	80.0-120	
Sulfate	40.0	39.5	98.7	80.0-120	

L1433215-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433215-07 12/09/21 22:40 • (MS) R3739426-4 12/09/21 23:11 • (MSD) R3739426-5 12/09/21 23:27

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	4.06	50.0	49.8	92.0	91.6	1	80.0-120			0.399	15
Fluoride	5.00	ND	4.64	4.64	92.9	92.9	1	80.0-120			0.0237	15
Sulfate	50.0	31.4	76.2	76.2	89.5	89.6	1	80.0-120			0.0794	15

L1433506-11 Original Sample (OS) • Matrix Spike (MS)

(OS) L1433506-11 12/10/21 05:01 • (MS) R3739426-7 12/10/21 05:33

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	5.52	54.0	97.0	1	80.0-120	
Fluoride	5.00	ND	4.93	96.8	1	80.0-120	
Sulfate	50.0	18.6	66.8	96.3	1	80.0-120	

Method Blank (MB)

(MB) R3740138-1 12/11/21 15:08

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

L1433215-98 Original Sample (OS) • Duplicate (DUP)

(OS) L1433215-98 12/11/21 22:45 • (DUP) R3740138-3 12/11/21 23:05

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	18.2	18.0	1	1.06		15
Fluoride	ND	ND	1	3.55		15
Sulfate	ND	ND	1	9.21		15

L1433510-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1433510-01 12/12/21 07:57 • (DUP) R3740138-6 12/12/21 08:56

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	9.27	9.29	1	0.197		15
Fluoride	0.224	0.224	1	0.0446		15

L1433510-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1433510-01 12/13/21 17:02 • (DUP) R3740197-1 12/13/21 17:13

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	171	170	5	0.804		15

Laboratory Control Sample (LCS)

(LCS) R3740138-2 12/11/21 15:28

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	38.2	95.5	80.0-120	
Fluoride	8.00	7.08	88.5	80.0-120	
Sulfate	40.0	38.0	95.0	80.0-120	

L1433215-98 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433215-98 12/11/21 22:45 • (MS) R3740138-4 12/11/21 23:24 • (MSD) R3740138-5 12/11/21 23:44

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 %
Chloride	50.0	18.2	67.3	69.1	98.2	102	1	80.0-120			2.67	15
Fluoride	5.00	ND	4.66	4.86	91.1	95.0	1	80.0-120			4.09	15
Sulfate	50.0	ND	50.4	52.3	97.8	102	1	80.0-120			3.77	15

L1433510-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1433510-01 12/12/21 07:57 • (MS) R3740138-7 12/12/21 09:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	9.27	58.8	99.1	1	80.0-120	
Fluoride	5.00	0.224	4.95	94.4	1	80.0-120	
Sulfate	50.0	174	233	119	1	80.0-120	E

Method Blank (MB)

(MB) R3740658-1 12/13/21 18:53

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

L1433498-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1433498-11 12/14/21 00:27 • (DUP) R3740658-3 12/14/21 00:38

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

L1434071-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1434071-03 12/14/21 06:18 • (DUP) R3740658-6 12/14/21 06:29

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	15.4	15.5	1	0.0492		15
Fluoride	0.523	0.517	1	1.04		15

Laboratory Control Sample (LCS)

(LCS) R3740658-2 12/13/21 19:05

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	39.9	99.7	80.0-120	
Fluoride	8.00	7.99	99.9	80.0-120	
Sulfate	40.0	39.8	99.4	80.0-120	

L1433498-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433498-11 12/14/21 00:27 • (MS) R3740658-4 12/14/21 00:50 • (MSD) R3740658-5 12/14/21 01:25

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	52.1	52.0	104	104	1	80.0-120			0.0991	15
Fluoride	5.00	ND	5.30	5.31	106	106	1	80.0-120			0.247	15

L1433498-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433498-11 12/14/21 00:27 • (MS) R3740658-4 12/14/21 00:50 • (MSD) R3740658-5 12/14/21 01:25

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	51.5	51.5	103	103	1	80.0-120			0.0144	15

L1434071-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1434071-03 12/14/21 06:18 • (MS) R3740658-7 12/14/21 06:41

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	15.4	64.9	98.9	1	80.0-120	
Fluoride	5.00	0.523	5.21	93.7	1	80.0-120	

Method Blank (MB)

(MB) R3744230-1 12/23/21 03:59

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) R3744230-2 12/23/21 04:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1.00	0.970	97.0	80.0-120	

L1433506-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433506-02 12/23/21 04:04 • (MS) R3744230-4 12/23/21 04:10 • (MSD) R3744230-5 12/23/21 04:12

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	98.8	99.7	1	75.0-125			0.819	20

Method Blank (MB)

(MB) R3742679-1 12/20/21 10:54

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) R3742679-2 12/20/21 10:58

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	5.00	4.82	96.3	80.0-120	

L1433502-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1433502-08 12/20/21 11:01 • (MS) R3742679-4 12/20/21 11:08 • (MSD) R3742679-5 12/20/21 11:11

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	65.0	69.4	69.4	89.4	89.4	1	75.0-125			0.00249	20

Method Blank (MB)

(MB) R3744521-1 12/23/21 13:41

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) R3744521-2 12/23/21 13:44

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	5.00	4.88	97.7	80.0-120	

L1433526-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1433526-01 12/23/21 13:48 • (MS) R3744521-4 12/23/21 13:55

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Calcium	5.00	82.3	84.9	52.5	1	75.0-125	V

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

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

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
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 - Independence

City/State Collected: Newark, AR

Please Circle: PT MT (CT) ET

Phone: **501-847-7077**

Client Project #
1145-21-081

Lab Project #
GBMCBAR-ENTERGYINDY

Collected by (print):
Danielle Braund

Site/Facility ID #
LANDFILL - 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

Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

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SDG # L1433506

K123

Acctnum: GBMCBAR

Template: **T198839**

Prelogin: **P885927**

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

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	B, Ca 250mlHDPE-HNO3	Cl, F, ~~pH~~, SO4, TDS 250mlHDPE-NoPres								Remarks	Sample # (lab only)
MW-1 (701S-R)	Grab	GW	39.9	11/16/21	1315	2	X	X								7.06	-01
MW-2 (702S)	Grab	GW	31.7	11/16/21	1045	2	X	X								8.04	-02
MW-3 (703S)	Grab	GW	32.9	11/15/21	1645	2	X	X								7.26	-03
MW-6 (706S)	Grab	GW	30.3	11/16/21	823	2	X	X								6.62	-04
MW-7 (707S)	Grab	GW	30.0	11/15/21	1446	2	X	X								7.48	-05
MW-8 (708S)	Grab	GW	31.2	11/16/21	1428	2	X	X								6.96	-06
MW-9 (709S)	Grab	GW	30.1	11/16/21	1350	2	X	X								7.02	-07
MW-10 (710S)	Grab	GW	33.0	11/15/21	1705	2	X	X								7.24	-08
MW-11 (711S)	Grab	GW	33.5	11/15/21	1400	2	X	X								6.42	-09
MW-13 (NOT 713S)	Grab	GW	27.7	11/15/21	1300	2	X	X								6.52	-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 # see attached

Sample Receipt Checklist

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes (No) HCL / MeoH TBR	If preservation required by Login: Date/Time
Danielle Braund	11/18/21	1500			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C see attached / Bottles Received: 28	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11/19/21 Time: 0900	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

Report to:
Jonathan Brown

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

Project Description:
Entergy - Independence

City/State Collected: Newark, AR

Please Circle: PT MT (CT) ET

Phone: **501-847-7077**

Client Project #
1145-21-081

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Collected by (print):
Danielle Braund

Site/Facility ID #
LANDFILL - 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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	B, Ca 250mlHDPE-HNO3	Cl, F, ~~pH~~, SO4, TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-17	Grab	GW	27.75	11/17/21	850	2	X	X	6.81	-11
MW-18	Grab	GW	29.3	11/16/21	1605	2	X	X	6.94	-12
FIELD BLANK 1 CCR	Grab	GW	—	11/17/21	1200	2	X	X	—	-13
DUPLICATE 1 MW-1R	Grab	GW	32.9	11/16/21	1315	2	X	X	7.06	-14
		~~GW~~								

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

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SDG # LH335506

Table #

Acctnum: **GBMCBAR**

Template: **T198839**

Prelogin: **P885927**

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

PB:

Shipped Via:

* 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	11/18/21	1500		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 28
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11/19/21 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

L14335066

Tracking Numbers		Temperature
5300 4300 4830		1.0+0=1.0 NSAZ
5300 4297 7031		1.7+.1=1.8 DKA3
5300 4300 5766		1.9+.1=2.0 DKA3
5300 4300 5652		2.2+.1=2.3 DKA3

GROUNDWATER SAMPLING LOG

SITE NAME: ISES	SITE LOCATION: 555 Point Ferry Rd	
WELL NO: MW-1R/7015-R	SAMPLE ID: MW-1R/7015-R	DATE: 11/16/21

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet): dedicated	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1255	PURGING ENDED AT: 1325	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1307					7.06	18.47	1.53 mS	2.89	182	0	none
1310					7.07	18.43	1.51	2.74	183	0	
1313					7.06	18.41	1.50	2.74	184	0	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/WHG	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1315	SAMPLING ENDED AT: 1325
PUMP OR TUBING DEPTH IN WELL (feet): dedicated	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: (Y) N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final (pH)/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	HDPE		250	HNO_3	7.06	COC2	BP	
	4	↓			HNO_3		COC3	↓	
	2			250			COC1		
	2			250			COC2		
DUP	2			250			COC1 DUP		
DUP	2	↓		250			COC2 DUP		

REMARKS: Sampled CCR COC1/COC2, CCR Duplicate, & Rule 22 COC2/COC3

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: ISES		SITE LOCATION: 555 Point Ferry Rd	
WELL NO: MW-2/7025	SAMPLE ID: MW-2/7025		DATE: 11/16/21

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	TOTAL WATER DEPTH (feet): 36.7	STATIC DEPTH TO WATER (feet): 31.7	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet): dedicated	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1015	PURGING ENDED AT: 1055	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or ~~µS~~/cm mS	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1025		3GPM		31.7	9.20	17.71	1.02	0	135	0	none
1028	300 ml/min			31.7	8.76	17.72	1.03	0	140	0	↓
1034				31.7	8.35	17.75	1.03	0	148	0	
1038				31.7	8.17	17.78	1.03	0	149	0	
1041				31.7	8.08	17.78	1.03	0	149	0	
1044				31.7	8.04	17.78	1.03	0	150	0	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/WHG	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1045	SAMPLING ENDED AT: 1055
PUMP OR TUBING DEPTH IN WELL (feet): dedicated	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	HDPE	250		250	8.04	COC1	BP	
	2	↓	250		250		COC2	↓	
	2		250	HNO_3	250		COC2		
	4			HNO_3			COC3		

REMARKS: Sampled CCR COC1/COC2 & Rule 22 COC2/COC3

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: ISES		SITE LOCATION: 555 Foxy Rd	
WELL NO: MW-3/7035	SAMPLE ID: MW-3/7035		DATE: 11/15/21

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	TOTAL WATER DEPTH (feet): 38.1	STATIC DEPTH TO WATER (feet): 32.9	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet): dedicated	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1630	PURGING ENDED AT: 1658	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1638	300	PM		33	7.25	16.81	0807	3.84	180	0	none
1641				33	7.27	16.81	0.805	3.85	181	0	↓
1644	300	ml/min		33	7.26	16.85	0.802	3.80	182	0	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/WHG	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1645	SAMPLING ENDED AT: 1658
PUMP OR TUBING DEPTH IN WELL (feet): dedicated	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	HDPE	250		250	7.26	COC1	BP	
	2	↓	250		250		COC2	↓	
	2		250	HNO_3	250		COC2		
	4			HNO_3			COC3		

REMARKS: Sampled CCR COC1/COC2 & Rule 22 COC2/COC3

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: ISES	SITE LOCATION: 555 Point Ferry Rd	
WELL NO: MW-6/7065	SAMPLE ID: MW-6/7065	DATE: 11/16/21

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	TOTAL WATER DEPTH (feet): 38.6	STATIC DEPTH TO WATER (feet): 30.3	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet): dedicated	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 800	PURGING ENDED AT: 835	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
813		300 ml/min		30.3	6.38	16.14	0.670	2.97	253	0	none
816	350 ml/min			30.3	6.49	16.27	0.673	2.95	244	0	↓
819				30.3	6.58	16.30	0.673	2.94	240	0	
822				30.3	6.62	16.32	0.674	2.87	235	0	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/WHG	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 823	SAMPLING ENDED AT: 835
PUMP OR TUBING DEPTH IN WELL (feet): dedicated	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	HDPE	250		250	6.62	COC1	BP	
	2	↓	250		250		COC2		
	2	↓	250	HNO_3	250		COC2		
	4			HNO_3			COC3		

REMARKS: Sampled CCR COC1/COC2 & Rule 22 COC2/COC3

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	ISES	SITE LOCATION:	555 Ferry Rd	
WELL NO:	MW-7/707S	SAMPLE ID:	MW-7/707S	DATE: 11/15/21

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
2	1/4	35.9	30.0	BP

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
dedicated		1422	1452	

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm mS	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1435	300	200 mL/min		30.0	7.43	17.68	1.0	2.40	119	20	
1440		200 mL/min		30.0	7.44	17.66	1.0	2.37	123	0	
1443				30.1	7.47	17.66	1.0	2.47	125	0	
1446				30.1	7.48	17.64	1.0	2.35	127	0	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/WHG		1446	1452

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
dedicated			

FIELD DECONTAMINATION: PUMP Y N TUBING Y N (replaced) DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	HDPE				7.48	COC1	BP	
	2	↓					COC2	↓	
	2			HNO3			COC2		
	4			HNO3			COC3		

REMARKS: Sampled CCR COC1/COC2 & Rule 22 COC2/COC3

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: ISES	SITE LOCATION: 555 Point Ferry Rd	
WELL NO: MW-8/7085	SAMPLE ID: MW-8/7085	DATE: 11/16/21

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
2	1/4	36.0	31.2	BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
dedicated		1408	1438	

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1418	300 ml/min			31.3	7.11	18.16	1.43 ms	4.04	188	0	none
1421				31.3	7.02	18.05	1.44	3.96	192	0	
1424				31.3	6.97	17.96	1.44	3.89	196	0	
1427				31.3	6.96	17.95	1.44	3.88	197	0	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/WHG		1428	1438

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
dedicated			

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	HDPE	250		250	6.96	COC1	BP	
	2		250		250		COC2		
	2		250	HNO_3	250		COC2		
	4			HNO_3			COC3		

REMARKS: Sampled CCR COC1/COC2 & Rule 22 COC2/COC3

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: ISES		SITE LOCATION: 555 Point Ferry Rd	
WELL NO: MW-9 / 7095	SAMPLE ID: MW-9 / 7095		DATE: 11/16/21

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	TOTAL WATER DEPTH (feet): 40.4	STATIC DEPTH TO WATER (feet): 30.1	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet): dedicated	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1335	PURGING ENDED AT: 1400	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1342 ~~1340~~		3 CPM		~~30.2~~	7.08	18.28	1.25	3.33	184	0	none
1345 1345		300 ml/min		~~30.2~~	7.03	18.21	1.26	3.36	189	0	↓
1348				~~30.2~~	7.02	18.18	1.26	3.30	191	0	↓
				30.2							

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/WHG	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1350	SAMPLING ENDED AT: 1400
PUMP OR TUBING DEPTH IN WELL (feet): dedicated	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	HDPE	250		250	7.02	COC1	BP	
	2	↓	250		250		COC2	↓	
	2		250	HNO_3	250		COC2		
	4			HNO_3			COC3		
								↓	

REMARKS: Sampled CCR COC1/COC2 & Rule 22 COC2/COC3

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

Fix labels for Blanks

GROUNDWATER SAMPLING LOG

SITE NAME: ISES	SITE LOCATION: 555 Ferry Rd	
WELL NO: MW-10/7105	SAMPLE ID: MW-10/7105	DATE: 11/15/21

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	TOTAL WATER DEPTH (feet): 41.3	STATIC DEPTH TO WATER (feet): 33.0	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + 1620 gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet): dedicated	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1540	PURGING ENDED AT: ~~1720~~	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) (mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1556		3 GPM		33.0	7.31	17.55	1.48 mS	0.765	165	0	none
1559				33	7.27	17.50	1.42	0.765	169	0	
1602		300 ml/min		33	7.24	17.46	1.38	0.766	170	0	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/WHG	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: ~~1705~~ ~~1605~~ ~~1720~~ ~~1620~~ 1705	SAMPLING ENDED AT: ~~1720~~ 1720

PUMP OR TUBING DEPTH IN WELL (feet): dedicated	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	HDPE	250		250	7.24	COC1	BP	
	2	↓	250		250		COC2	↓	
	2	↓	250	HNO_3	250		COC2	↓	
	4	↓	↓	HNO_3	↓	↓	COC3	↓	

REMARKS: Sampled CCR COC1/COC2 & Rule 22 COC2/COC3

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: ISES		SITE LOCATION: 555 Ferry Rd	
WELL NO: MW-11 / 7115	SAMPLE ID: MW-11 / 7115		DATE: 11/15/21

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	TOTAL WATER DEPTH (feet): 40.1	STATIC DEPTH TO WATER (feet): 33.5	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X 1335 feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet): dedicated	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1335	PURGING ENDED AT: 1415	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm mS	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1350	3 GPM			32.5	6.62	17.62	0.738	0	39	0	none
1353		200 gallons		32.5	6.48	17.58	0.735	0	40	6	↓
1356		ml/min		32.5	6.48	17.58	0.733	0	41	0	
1359				32.5	6.42	17.58	0.732	0	43	0	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: B = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/WHG	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1400	SAMPLING ENDED AT: 1415
PUMP OR TUBING DEPTH IN WELL (feet): dedicated	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	HDPE		–		6.42, 17.62	COC1	BP	
	2	↓		–			COC2	↓	
	2			HNO3			COC2		
	4			HNO3			COC3		

REMARKS: Sampled CCR COC1/COC2 & Rule 22 COC2/COC3

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: ISES		SITE LOCATION: 555 Ferry Rd.	
WELL NO: MW-13	SAMPLE ID: MW-13		DATE: 11/15/2021

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	TOTAL WATER DEPTH (feet): 36.4	STATIC DEPTH TO WATER (feet): 27.7	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet): designated	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1237	PURGING ENDED AT: 1305	TOTAL VOLUME PURGED (gallons): ~~1300~~

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND. (circle units) µmhos/cm or ~~µS~~ mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
~~1250~~	~~1300~~	300pm		27.7	6.27	17.75	0.694	0	-28	0	none
1253	~~1303~~	↓ 200 ~~gpm~~		27.7	6.36	17.26	0.698	0	-16	0	↓
1256	~~1306~~	ml/min		27.7	6.44	17.24	0.700	0	-4	0	
1259				27.7	6.50	17.27	0.701	0	0	0	
1302				27.7	6.52	17.24	0.701	0	6	0	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/WHG	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1300	SAMPLING ENDED AT: 1305
PUMP OR TUBING DEPTH IN WELL (feet): dedicated	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) replaced	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	COC1	~~125~~ 250	none	250	6.52, 17.24		BP	
	2	COC2	~~125~~ 250	none	250				

REMARKS: Sampled CCR COC1, COC2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential**: ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: ISES		SITE LOCATION: 555 Point Ferry Rd	
WELL NO: MW-18	SAMPLE ID: MW-18		DATE: 11/16/21

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet): 41.9	STATIC DEPTH TO WATER (feet): 29.3	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet): 39.0	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: ~~1538~~	PURGING ENDED AT: 1610	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm ms	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
~~1538~~				29.3							
1591											
1554	3 GPM			29.3	6.97	16.97	0.580	1.96	187	3.4	
1557		750ml/min		29.3	6.97	16.97	0.579	1.24	188	3.1	
1600				29.3	6.94	16.94	0.579	1.30	189	2.7	
1603				29.3	6.94	16.93	0.578	1.24	189	2.3	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/WHG	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1605	SAMPLING ENDED AT: 1610
PUMP OR TUBING DEPTH IN WELL (feet): HDPE Bonded	TUBING MATERIAL CODE: 39.0 ft	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	HDPE	250		250	6.94	COC1	BP	
	2	↓	250		250		COC2	↓	

REMARKS: no dedicated pump. used rental bladder pump to Sample sampled CCR COC1/COC2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

APPENDIX C
ALTERNATE SOURCE DEMONSTRATION

Alternate Source Demonstration

2nd Half 2020 Sampling Event

Entergy Independence Plant
Coal Ash Disposal Landfill
Newark, Independence County, Arkansas

July 2021

Prepared For
Entergy Arkansas, LLC
Independence Plant
555 Point Ferry Road
Newark, Arkansas 72562

Michael Amstadt, P.E.
Senior Engineer

Jason S. House
Project Manager

Executive Summary

Entergy Arkansas, LLC (Entergy) performed the most recent semiannual detection monitoring sampling (2nd Half 2020) in December 2020 for Cells 12 through 15 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 12 through 15 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, verification samples were collected during March 2021, and the statistical analysis was then re-evaluated for the resampled parameters.

Based on the statistical analyses, the following statistically significant increase (SSI) above background concentrations was identified in one well monitoring the shallow sub horizon of the alluvial aquifer based on intrawell prediction limits:

- Chloride, sulfate and total dissolved solids (TDS) (MW-8).

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 is due to the following:

- Changes in redox conditions inhibiting the reduction of sulfate in the groundwater; and/or

- Natural variation in groundwater quality.

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.

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Appendices

Section 1
Introduction

1.1 Background

Entergy Arkansas, LLC (Entergy) operates the Entergy Independence Plant (Plant), a coal-fired power plant, to generate electricity. The Plant is located at 555 Point Ferry Road in Newark, Independence 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 1983. The CADL is a Class 3N non-commercial industrial landfill and operates under Arkansas Department of Energy and Environment, Division of Environmental Quality (ADEQ) Solid Waste Permit No. 0200-S3N-R2.

The CADL consists of a total of 15 disposal cells. There are currently four active CCR disposal cells (Cells 12 through 15) at the CADL 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 17, 2015, and subsequent Final Rules promulgated by the United States Environmental Protection Agency (USEPA). Cells 12 through 15 comprise the CCR management unit (Unit) per the CCR Rule and are the focus of this ASD. The closed and active cells are shown on Figure 2. Cells 1 through 11 were closed under Entergy's ADEQ solid waste management permit prior to the effective date of the CCR Rule. CCR has not been placed in those cells after October 15, 2015.

Historical CCR management by Entergy has consisted of the following activities:

- Beneficial use in local construction projects;
- Beneficial use as road bed 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 the CCR Unit and has collected samples from the Certified Monitoring Well Network for CCR constituents and performed statistical analysis of the collected samples. The Certified Monitoring Well Network consists of 11 wells installed into the shallow sub horizon of the alluvial aquifer, which is the uppermost aquifer system underlying the CCR Unit.

Pursuant to 40 CFR 257.91(f) of the CCR Rule, 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 of the CCR Rule (see Groundwater Monitoring System Certification, TRC, February 26, 2018).

As discussed above, groundwater quality in the shallow sub horizon of the alluvial aquifer is currently being monitored pursuant to the following:

- ADEQ Solid Waste Permit No. 0200-S3N-R2, 11 closed and four active cells of the CADL; and
- CCR Rule, four active CCR disposal cells.

Groundwater monitoring in accordance with the ADEQ solid waste management permit began in 2002. After installation of the CCR groundwater monitoring Certified Monitoring Well Network prior to October 15, 2017 and development of a groundwater sampling and analysis program including selection of statistical procedures to evaluate groundwater data (see Groundwater Sampling and Analysis Plan (FTN, 2017a)), 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 background monitoring samples were analyzed for the Appendix III and the Appendix IV to Part 257 – Constituents for Assessment Monitoring (Appendix IV) per 40 CFR 257.94(b).

Following completion of quarterly background 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 2020) in December 2020 (additional verification sampling was performed in March 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. In accordance with 40 CFR 257.93(f)(6), Entergy obtained certification by a qualified Arkansas-registered professional engineer 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 2020 semiannual detection monitoring

event. A total of 3 SSIs were identified for three Appendix III constituents: chloride, sulfate and total dissolved solids (TDS). SSIs were identified in MW-8.

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 2020 semiannual detection monitoring event, pursuant to 40 CFR 257.94(e)(2) of the CCR Rule.

1.3 Site Hydrogeology

Historical subsurface investigations at the CADL have identified the following three stratigraphic horizons and hydrogeology:

- **Upper Confining Unit**. A 23 to 35 feet thick upper confining unit consisting of clays and silts is present at the ground surface down to 23 to 35 feet below ground surface (bgs). Vertical hydraulic conductivity of the upper confining unit is estimated to range from 4.0×10^{-9} to 7.8×10^{-7} centimeters per second (cm/s) based on flexible wall permeability tests (FTN 2001, FTN and Golder Associates Inc. 2017).
- **Alluvial Aquifer**. An alluvial aquifer consisting of fine to medium grained sandy sub rounded to sub angular chert gravel with varying amounts of silt and clay is present beneath the upper confining unit. The alluvial aquifer is the uppermost laterally continuous water bearing zone beneath the CADL and the unit and is the uppermost aquifer pursuant to the CCR Rule. The alluvial aquifer extends to depths of 85 to 120 feet bgs. Hydraulic conductivity of the alluvial aquifer is estimated to range from 2.1×10^{-2} to 6×10^{-2} cm/s (FTN 2015).

  Historically, groundwater monitoring investigations were performed to evaluate three potential stratigraphic zones of the alluvial aquifer designated as upper, middle, and deep. Based on geochemical fingerprinting investigations, groundwater quality indicated that the alluvial aquifer consists of two distinct sub horizons: shallow (combination of upper and middle stratigraphic zones) and deep. Based on geochemical fingerprinting, the uppermost aquifer for the CCR groundwater monitoring system is the shallow sub horizon. Therefore, the 11 monitoring wells making up the Certified Monitoring Well Network for the CCR Unit are screened within the shallow sub horizon of the alluvial aquifer.

  Groundwater in the alluvial aquifer is present under confined conditions (i.e., the hydraulic head in the aquifer is present above the base of the upper confining clays and silts) except during periods of significant fluctuations of water elevation where levels can drop below the lower limits of the confining unit. During the 2nd Half 2020 semiannual detection monitoring event, groundwater flow was to the southeast. However, based on historical groundwater

monitoring at the CADL, seasonal variations in groundwater flow direction have been documented with flow to the southeast, north, east, south and west.

- **Bedrock**. Pennsylvanian aged bedrock consisting of chert, limestone, sandstone, and carbonaceous shale and associated residuum at the bedrock surface are present beneath the alluvial aquifer (Albin, 1967). The top of the bedrock is approximately 85 to 120 feet bgs.

1.4 General Groundwater Quality

Regionally, groundwater in the alluvial aquifer is a calcium-bicarbonate water type with sodium, magnesium, chloride, sulfate, silica, and iron comprising most of the remaining dissolved ions (Kresse et al. 2014). Elevated concentrations of trace metals including iron, manganese, and arsenic are ubiquitous in the alluvial aquifer and thought to be elevated due to the presence of carbonaceous material within the alluvial aquifer that drives redox-sensitive parameters to dissolve in groundwater (Kresse and Fazio 2003, Gonthier 2003, Kresse and Clark 2008, Welch et al. 2009, Kresse et al. 2014). Most parameters show a wide variability in concentration with respect to lateral and vertical position in the aquifer (Albin et al. 1967, Kresse et al. 2014).

Groundwater quality at the base of the alluvial aquifer can be heavily influenced by the underlying bedrock. The lower portion of the alluvial aquifer has high concentrations of chloride. The chloride concentrations in the deep alluvial aquifer sub horizon range from 1,260 to 2,220 milligrams per liter (mg/L). The source of this brackish to salty water in the deep alluvial aquifer sub horizon is likely related to upwelling of high-salinity groundwater from the underlying bedrock. An example of this type of upwelling has been documented in Morris and Bush (1986), where a similar plume of chloride (with concentrations in the 1,000s of mg/L) originated in the underlying bedrock and migrated up into the overlying alluvial aquifer.

Section 2
Alternate Source Demonstration

Pursuant to 40 CFR 257.94(e)(2), Entergy may demonstrate that a source other than the CCR Unit caused an 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 2020 semiannual detection monitoring event was performed in December 2020 and verification sampling was performed in March 2021. Statistical analysis of the 2nd Half 2020 semiannual detection monitoring data and verification sampling data were 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 intrawell prediction limits statistical analyses, the following 3 SSIs were identified:

- Chloride, sulfate and TDS (MW-8).

All other Appendix III constituent concentrations were within their intrawell prediction limits in all wells within the CCR Rule Certified Monitoring Well Network.

A discussion for each of the individual SSIs identified for the alluvial aquifer wells and associated evidence demonstrating that the 3 SSIs were not caused by a release from the CCR Unit is provided in the subsections below.

2.1 Chloride at MW-8

The chloride SSI identified at MW-8 is a result of natural variation in groundwater quality. The following evidence supports this determination:

- Chloride was detected at a concentration of 163 mg/L in the December 2020 sample. This concentration exceeds the intrawell prediction limit of 140 mg/L. Chloride concentrations measured in leachate at the CADL were 16 mg/L during the same sampling period. It is therefore unlikely that a leak from the CCR Unit could be responsible for the measured chloride concentrations observed at MW-8.

- As noted in Section 1 above, the chloride concentrations in the deep alluvial aquifer sub horizon range from 1,260 to 2,220 mg/L at the CADL and potential upwelling from this deep sub horizon may have impacted the MW-8 monitoring results.

2.2 Sulfate at MW-8

The sulfate SSI identified at MW-8 is a result of a change in redox conditions and natural variation in groundwater quality. The following evidence supports this determination:

- Sulfate was detected at a concentration of 276 mg/L in the December 2020 sample. This concentration exceeds the intrawell prediction limit of 268.4 mg/L. Oxygen reduction potential measured at MW-8 during the 2nd Half of 2020 indicated redox conditions unfavorable for sulfate reducing bacteria (values greater than 200 millivolts(mV)). Prior to March 2020, all ORP measurements collected at MW-8 during the CCR background and detection monitoring period were below 200 mV indicating more favorable sulfate reducing conditions. Based on this factor, it is likely that a change in redox conditions, and not a release from the CCR Unit, has impacted the MW-8 monitoring results.

    - Reduction of sulfate to sulfide by anaerobic bacteria results in an increase in the ^{34}S isotope of the residual sulfate. When the $^{34}S/^{32}S$ isotope ratio measured at MW-8 is compared against a known reference standard (Vienna-Canyon Diablo Troilite (VCDT)) it has a resulting ratio differential of -19.3 parts per thousand ($^{0}/_{00}$). Samples collected from an additional 6 wells at the CADL had $^{34}S/^{32}S$ isotope ratios ranging from -11.4 to 4.2 $^{0}/_{00}$. This indicates a lower amount of sulfate reduction activity is currently occurring in the MW-8 vicinity than around the rest of the CADL.

- Comparisons of CCR parameter ratios between MW-8 and monitoring wells at the CADL located east of MW-8 (604S, 605S and 701S-R) appear to become more similar after November 2019 (Appendix A). Groundwater flow at the site is variable over time and during 2 of 4 gauging events performed during 2020, groundwater flow was in a western/northwestern direction (towards the CCR Unit) at MW-8. This indicates a potential for groundwater movement from these wells to have impacted the MW-8 monitoring results.

    - An analysis of groundwater age by sulfur hexafluoride (SF_6), indicates an age range of 15 to 26 years at MW-8. Groundwater age at monitoring wells 604S and 701S were measured to be between 6 to 14 years and 9 to 14 years respectively, indicating a more robust recharge mechanism located east of MW-8 that may be contributing to the western component of the variable flow at the site.

2.3 TDS at MW-8

The TDS SSI identified at MW-8 is a result of a change in redox conditions and natural variation in groundwater quality. The following evidence supports this determination:

- TDS was detected at a concentration of 926 mg/L in the December 2020 sample. This concentration exceeds the intrawell prediction limit of 891 mg/L. Two common components of TDS in groundwater are chloride and sulfate. As noted in sections 2.1 and 2.2, increases in these constituents during the December 2020 monitoring results are more likely a release of natural variation in groundwater quality and a change in redox conditions, respectively.

- Comparisons of CCR parameter ratios between MW-8 and monitoring wells at the CADL located east of MW-8 (604S, 605S and 701S-R) appear to become more similar after November 2019 (Appendix A). Groundwater flow at the site is variable over time and during 2 of 4 gauging events performed during 2020, groundwater flow was in a western/northwestern direction (towards the CCR Unit) at MW-8. This indicates a potential for groundwater movement from these wells to have impacted the MW-8 monitoring results. The TDS measurements of 926 mg/L at MW-8 during the December 2020 monitoring event is within the historical ranges of TDS measurements at 604S and 701S-R. TDS measurements at 604S have historically ranged from 390 mg/L to 980 mg/L while measurements at 701SR have ranged from 623 mg/L to 1030 mg/L.

Section 3
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 and demonstrates that the SSIs determined based on statistical analysis of the 2nd Half 2020 semiannual detection monitoring event performed in December 2020 and subsequent verification sampling in March 2021 are not due to a release from the CCR Unit to the uppermost aquifer system.

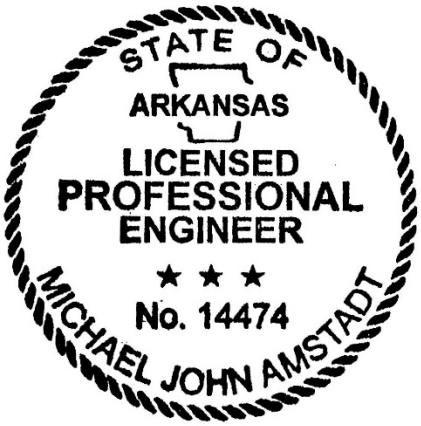
Based on the information provided in this ASD report, Entergy will continue to conduct semiannual detection monitoring in accordance with 40 CFR 257.94 at the Certified Monitoring Well Network for the CCR Unit.

Section 4
Certification

I hereby certify that the alternative source demonstration presented within this document for the Entergy Independence Plant Coal Ash Disposal Landfill CCR Unit has been prepared to meet the requirements of Title 40 CFR §257.94(e) 2 of the Federal CCR Rule. This document is accurate and has been prepared in accordance with good engineering practices, including the consideration of applicable industry standards, and with the requirements of Title 40 CFR §257.94(e)2.

Name: Michael J. Amstadt **Expiration Date:** December 31, 2022

Company: TRC Environmental Corporation **Date:** July 2, 2021



Section 5
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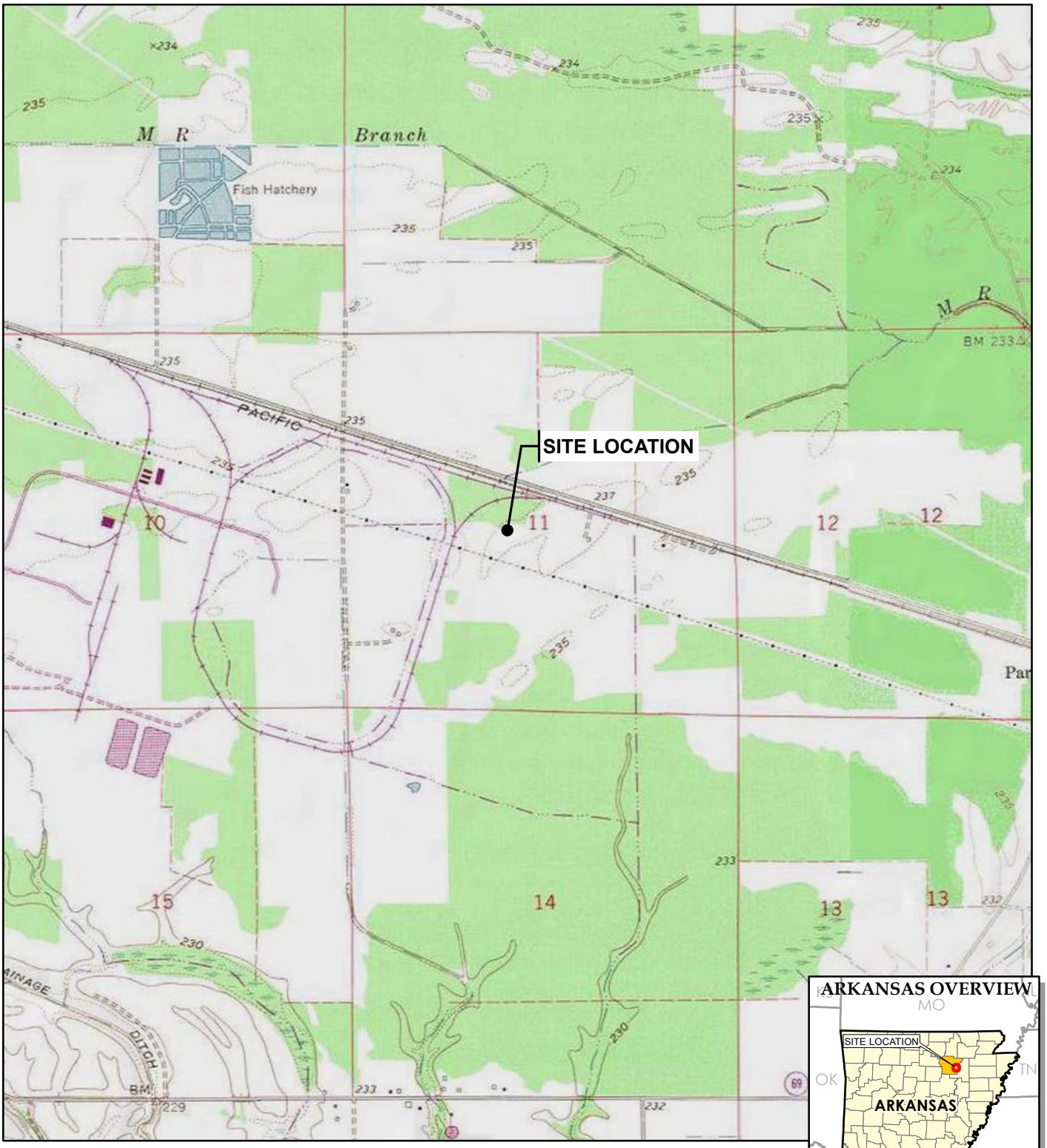

BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

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TRC
Two United Plaza
8550 United Plaza Blvd. Suite 502
Baton Rouge, LA
Phone: 734.971.7080
TRC - GIS

PROJECT:

ENTERGY INDEPENDENCE PLANT
555 POINT FERRY ROAD
NEWARK, ARKANSAS

TITLE:

SITE LOCATION MAP

DRAWN BY:	S. MAJOR
CHECKED BY:	K. BARBER
APPROVED BY:	J. HOUSE
DATE:	JULY 2021
PROJ. NO.:	419735
FILE:	339065-001slmIND.mxd

FIGURE 1

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LEGEND

- CADL MONITORING WELLS
- CCR UNIT BOUNDARY

NOTES

1. BASE MAP IMAGERY FROM ESRI/DIGITAL GLOBE, 2016.

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PROJECT:
ENTERGY INDEPENDENCE PLANT
555 POINT FERRY ROAD
NEWARK, ARKANSAS

TITLE:
MONITORING WELL LOCATIONS FOR CCR GROUNDWATER MONITORING NETWORK

DRAWN BY:	S. MAJOR	PROJ. NO.:	419735
CHECKED BY:	J. HOUSE		
APPROVED BY:	J. HOUSE		**FIGURE 2**
DATE:	JULY 2021		

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

FILE NO.: 341479-005IND.mxd

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TRC - GIS

APPENDIX A
WATER QUALITY PARAMETER COMPARISON CHARTS

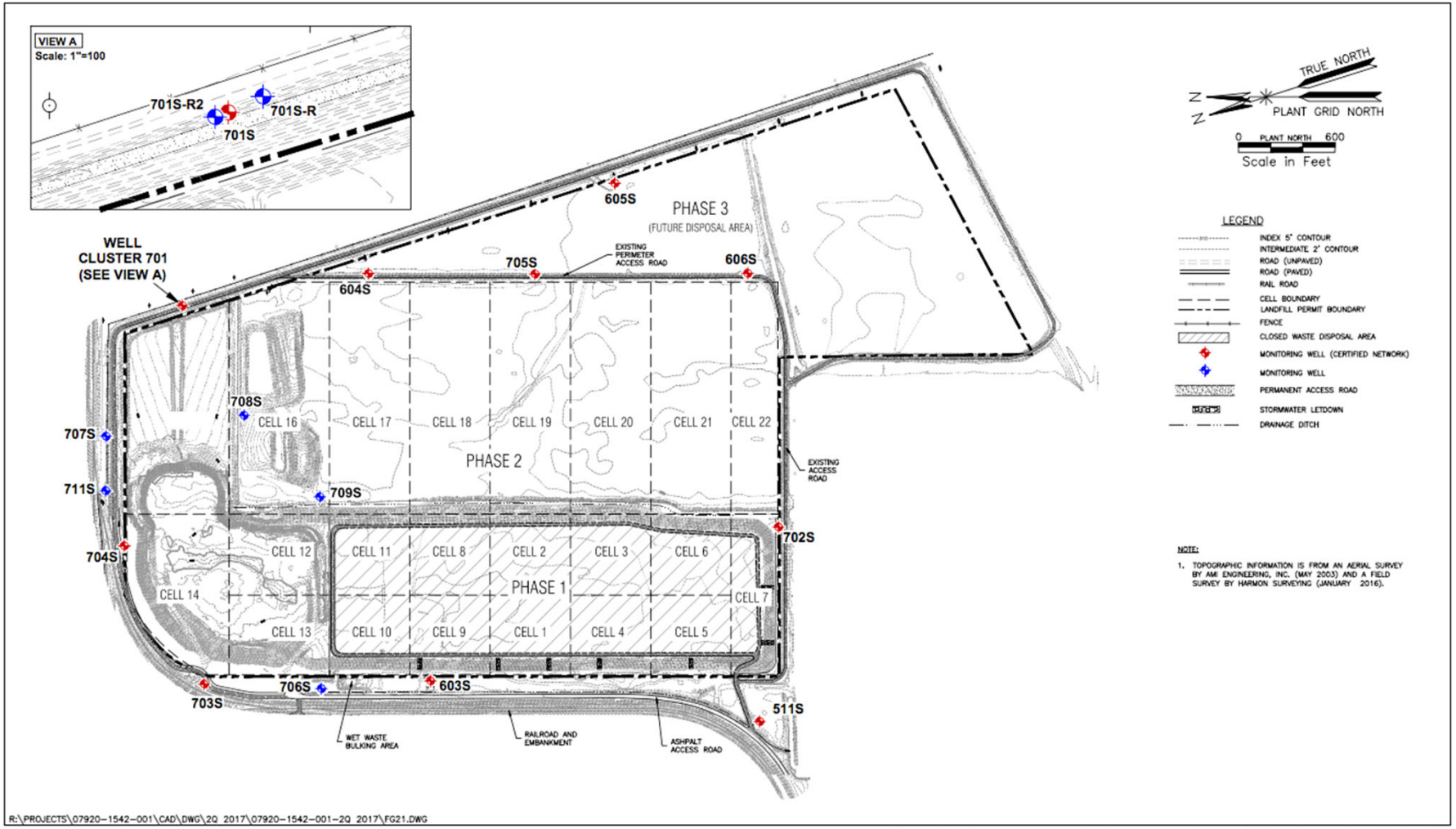
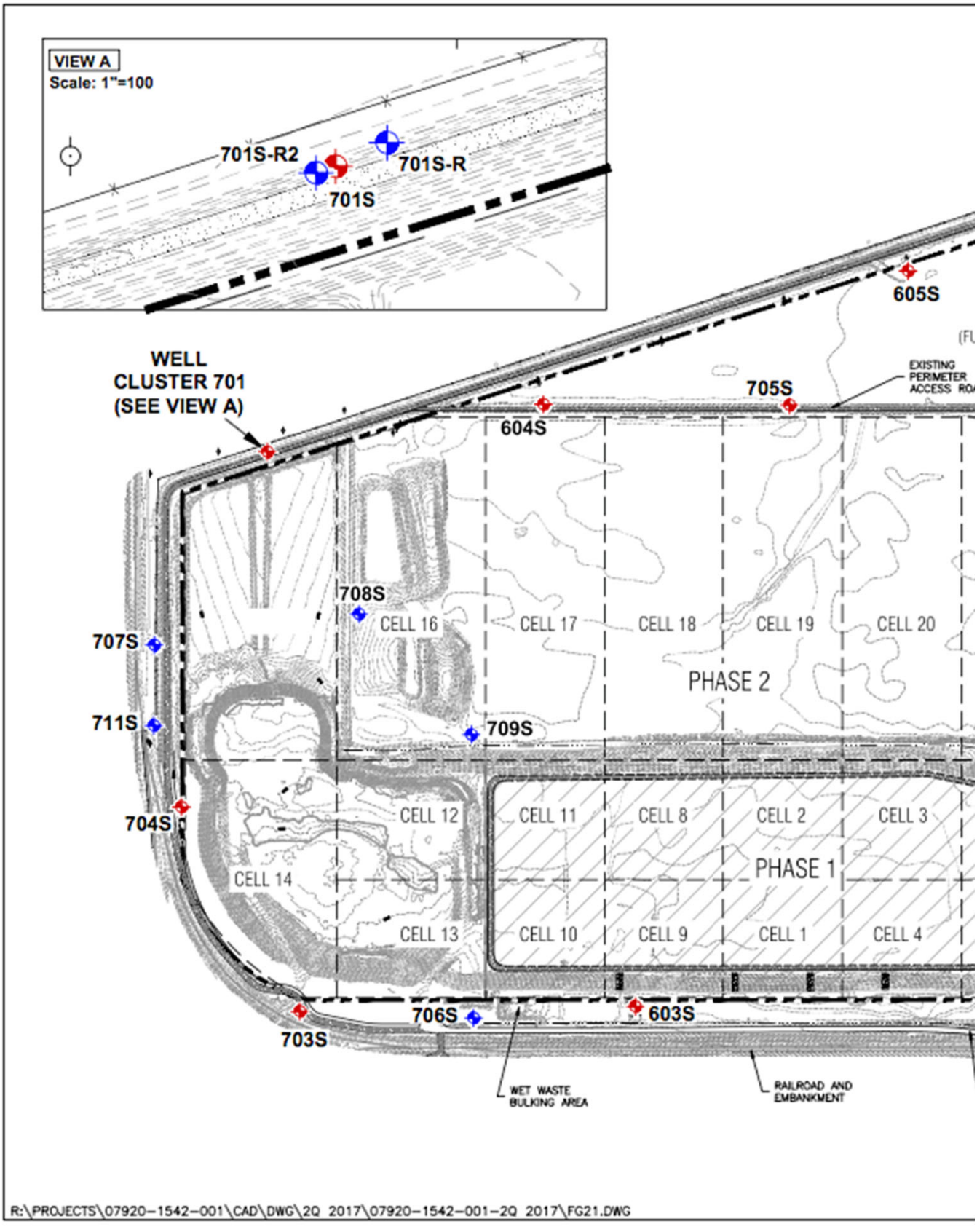


Figure 2.1. Groundwater monitoring network, Entergy Independence Class 3N landfill.



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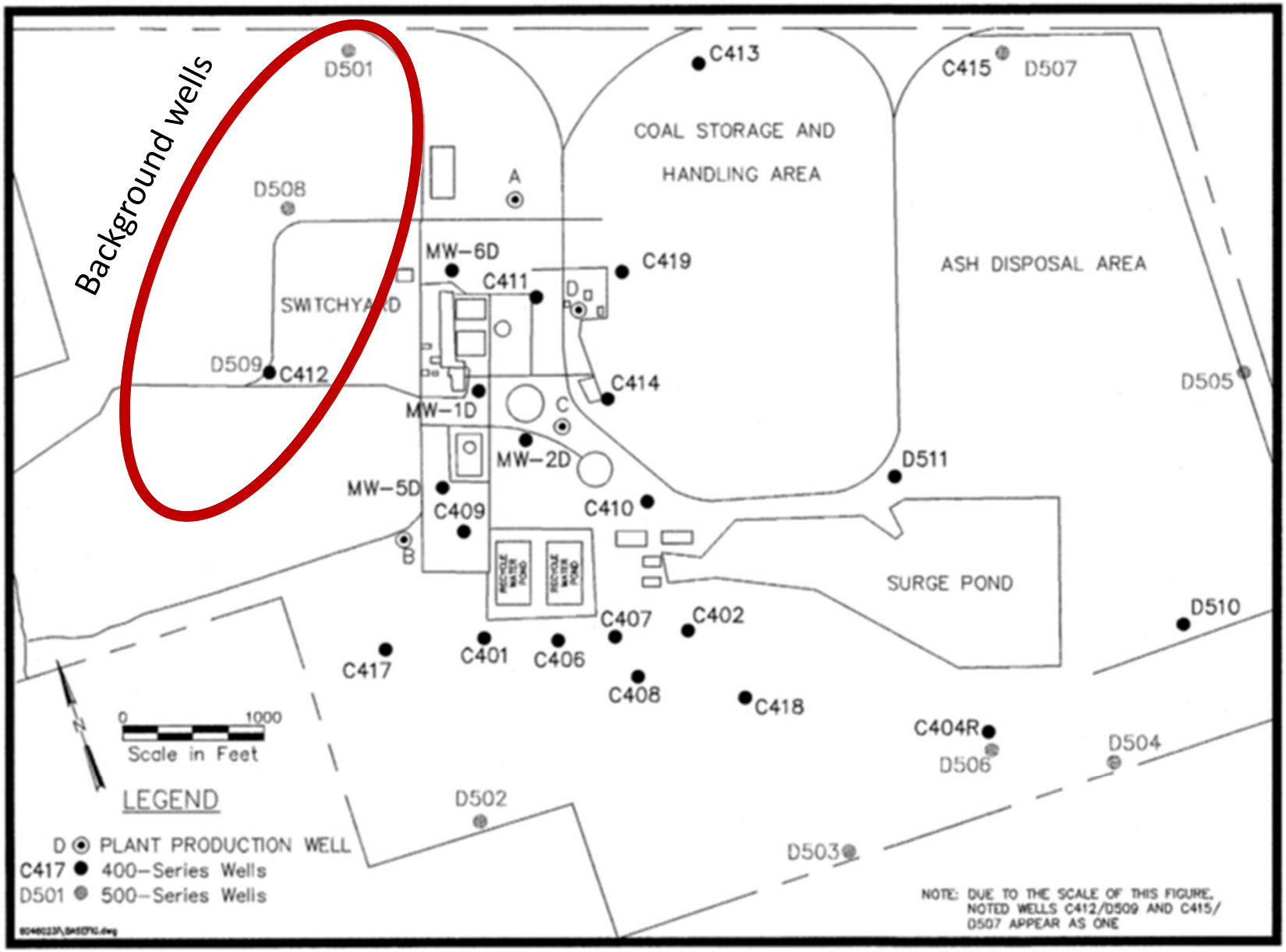
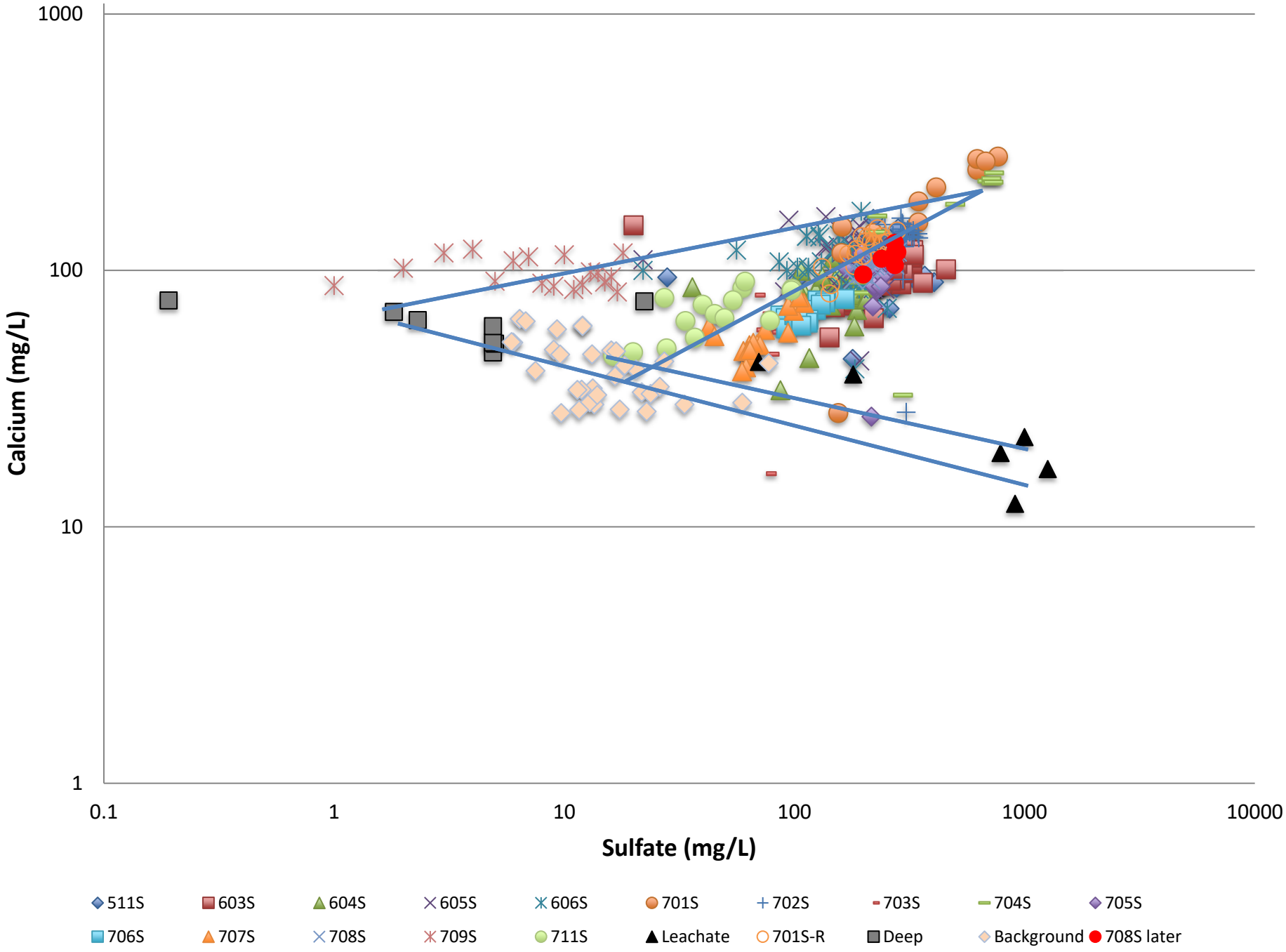


Figure 2.1. Location of Independence Plant groundwater monitoring wells.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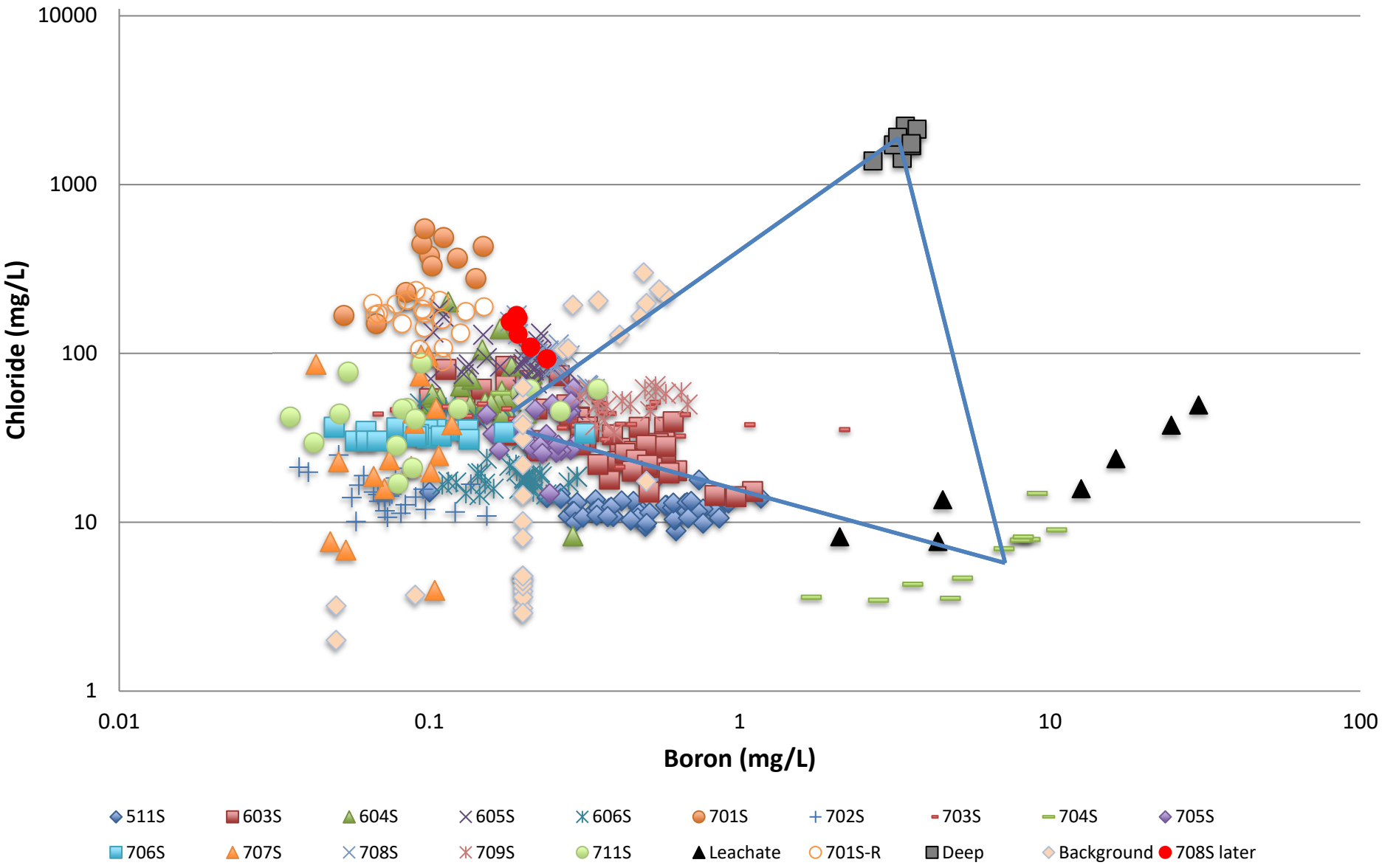
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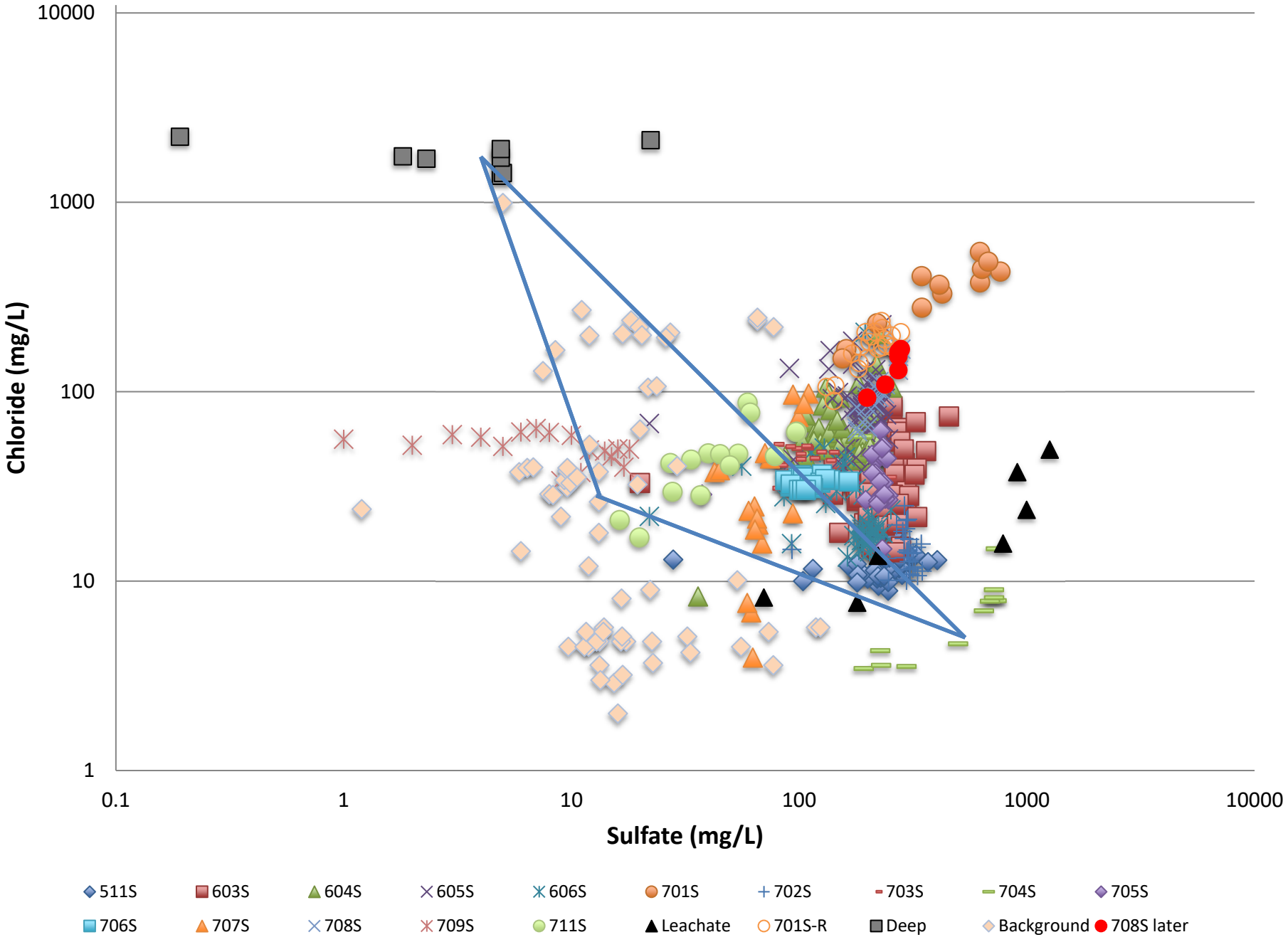
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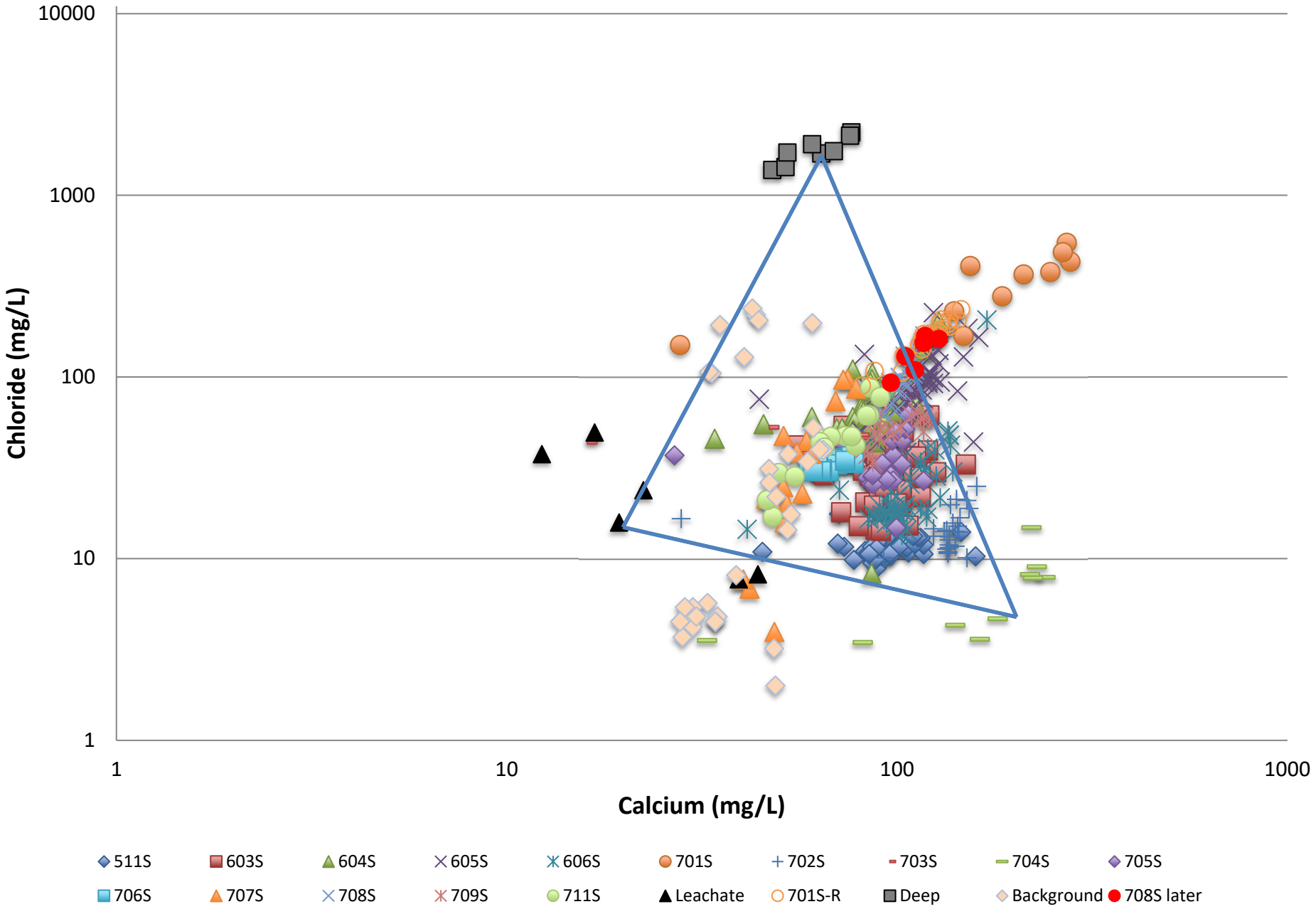
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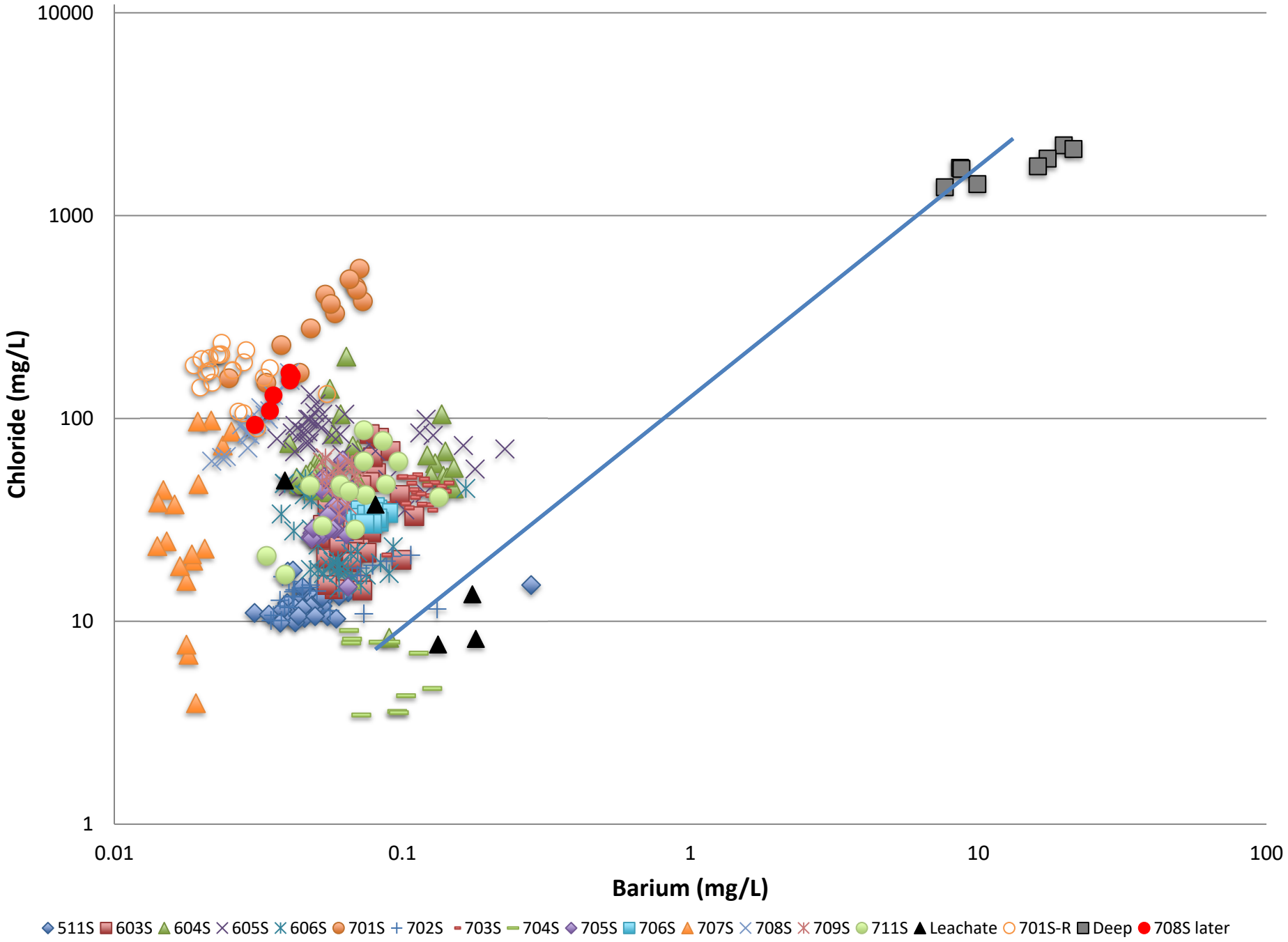
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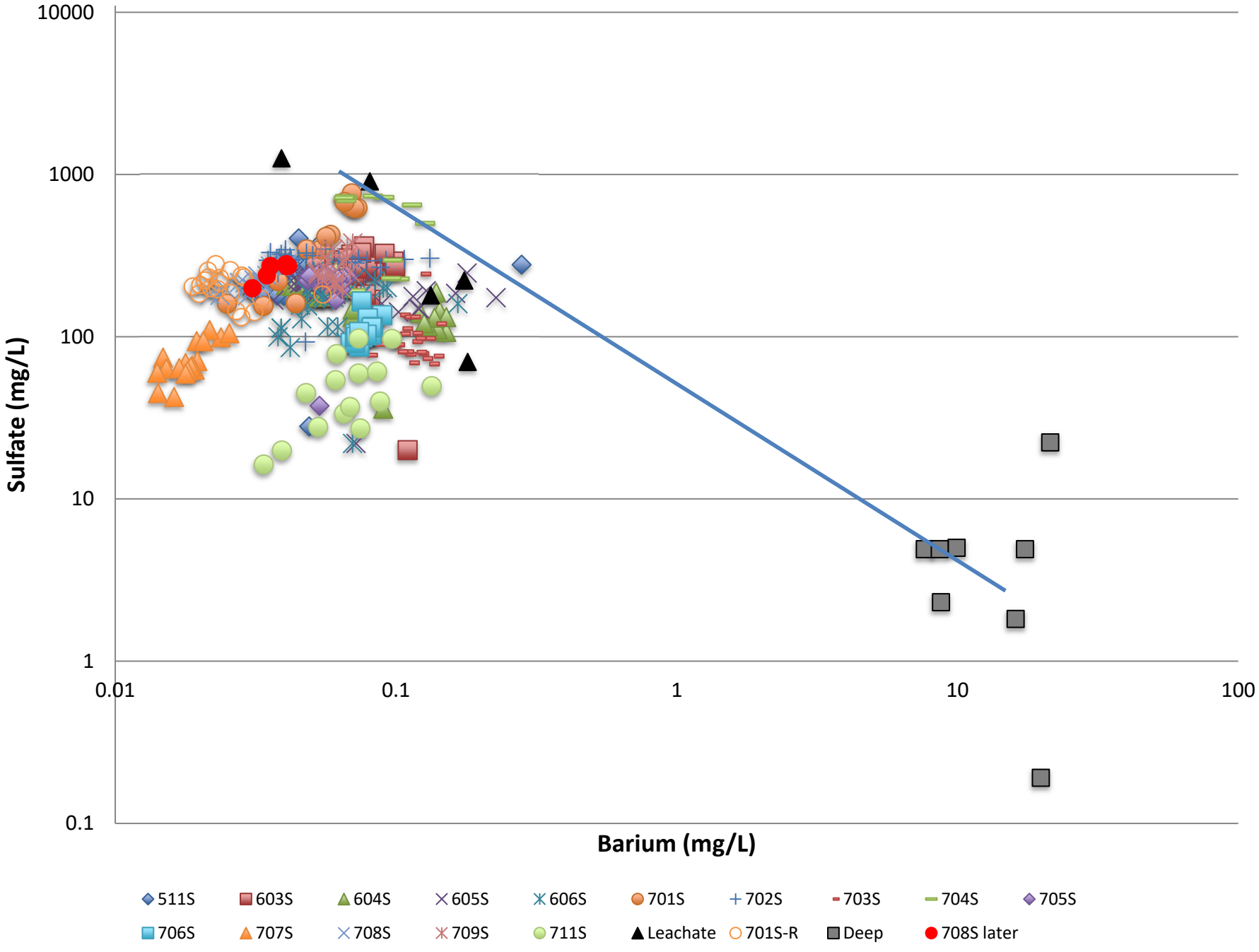
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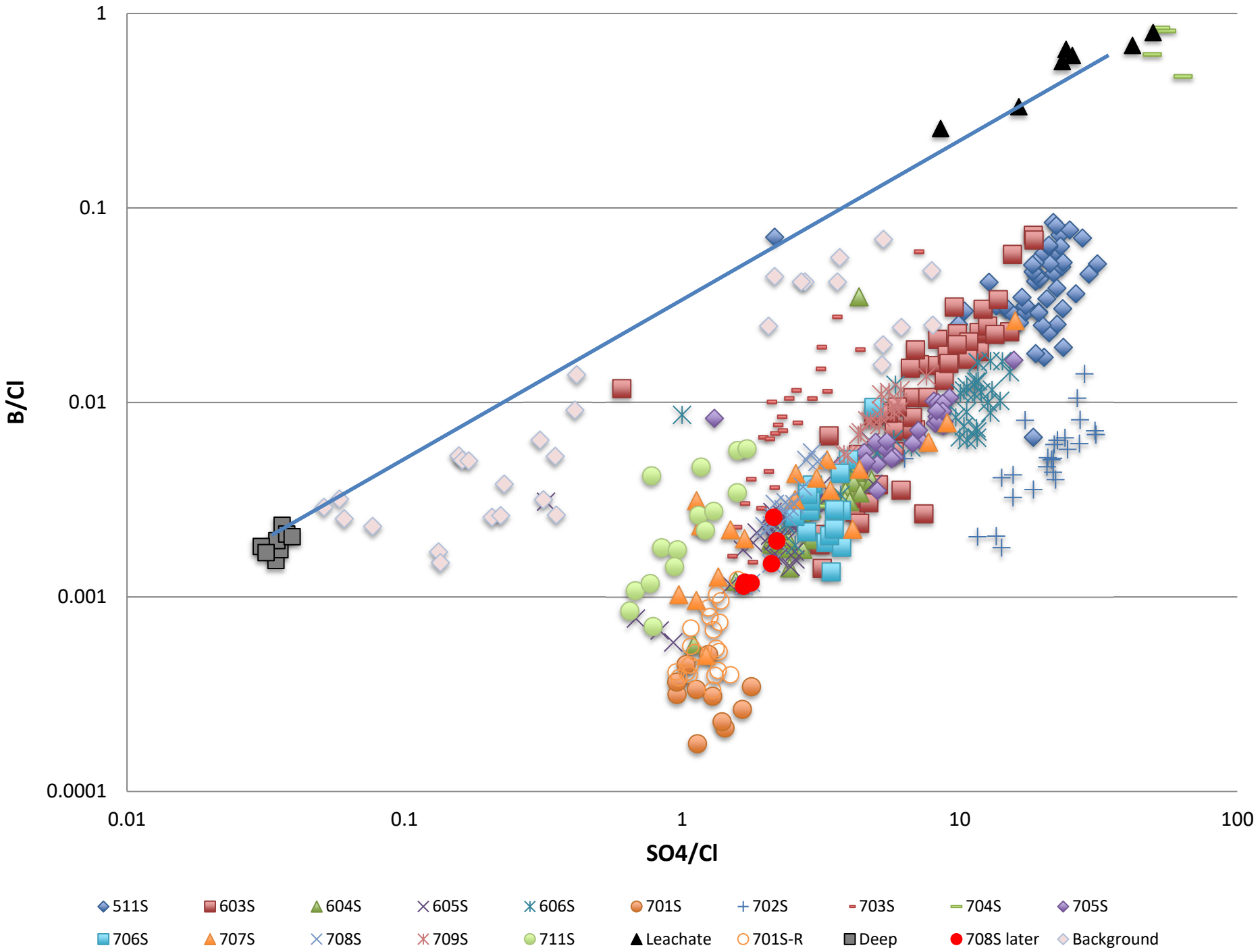
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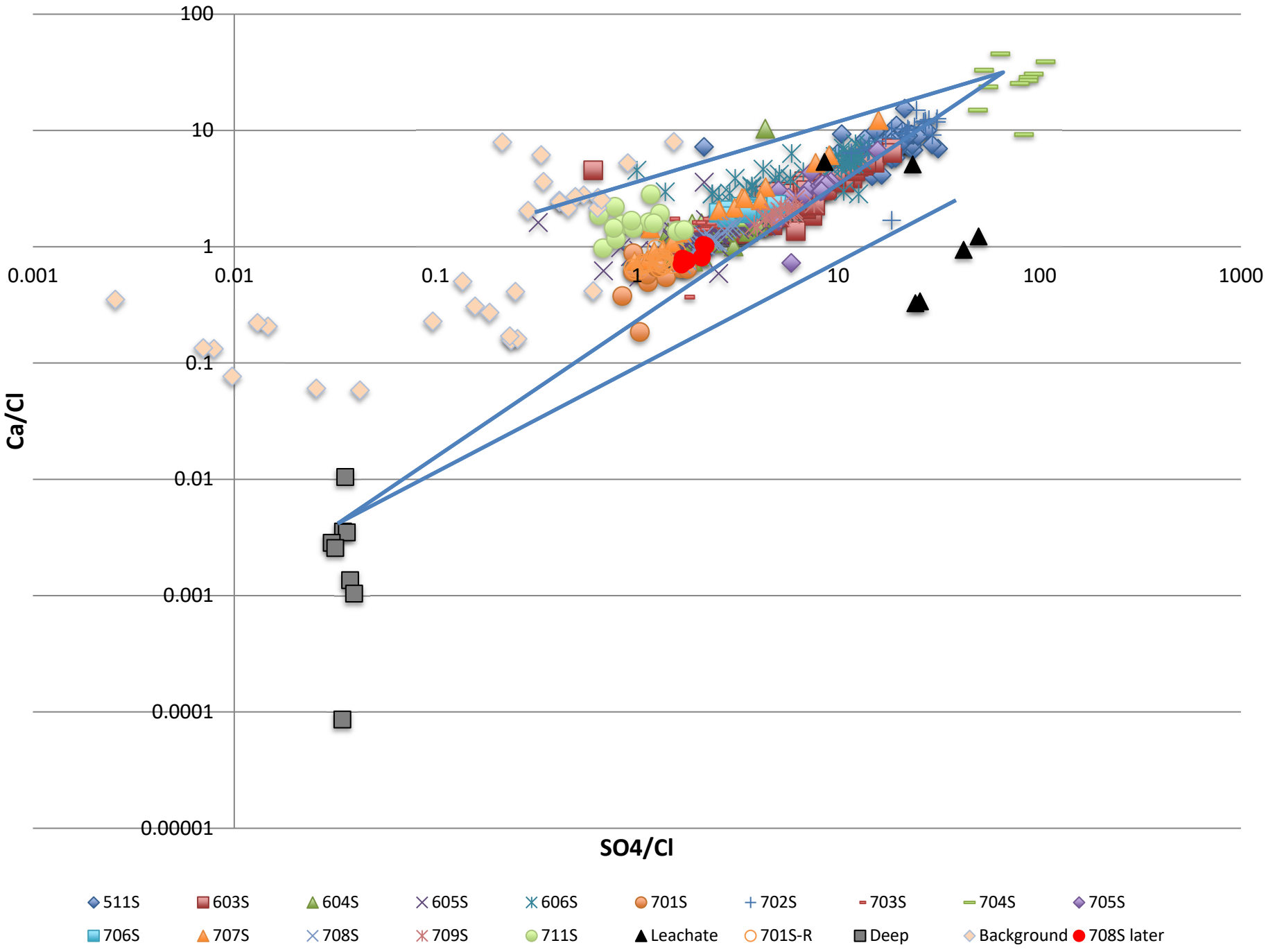
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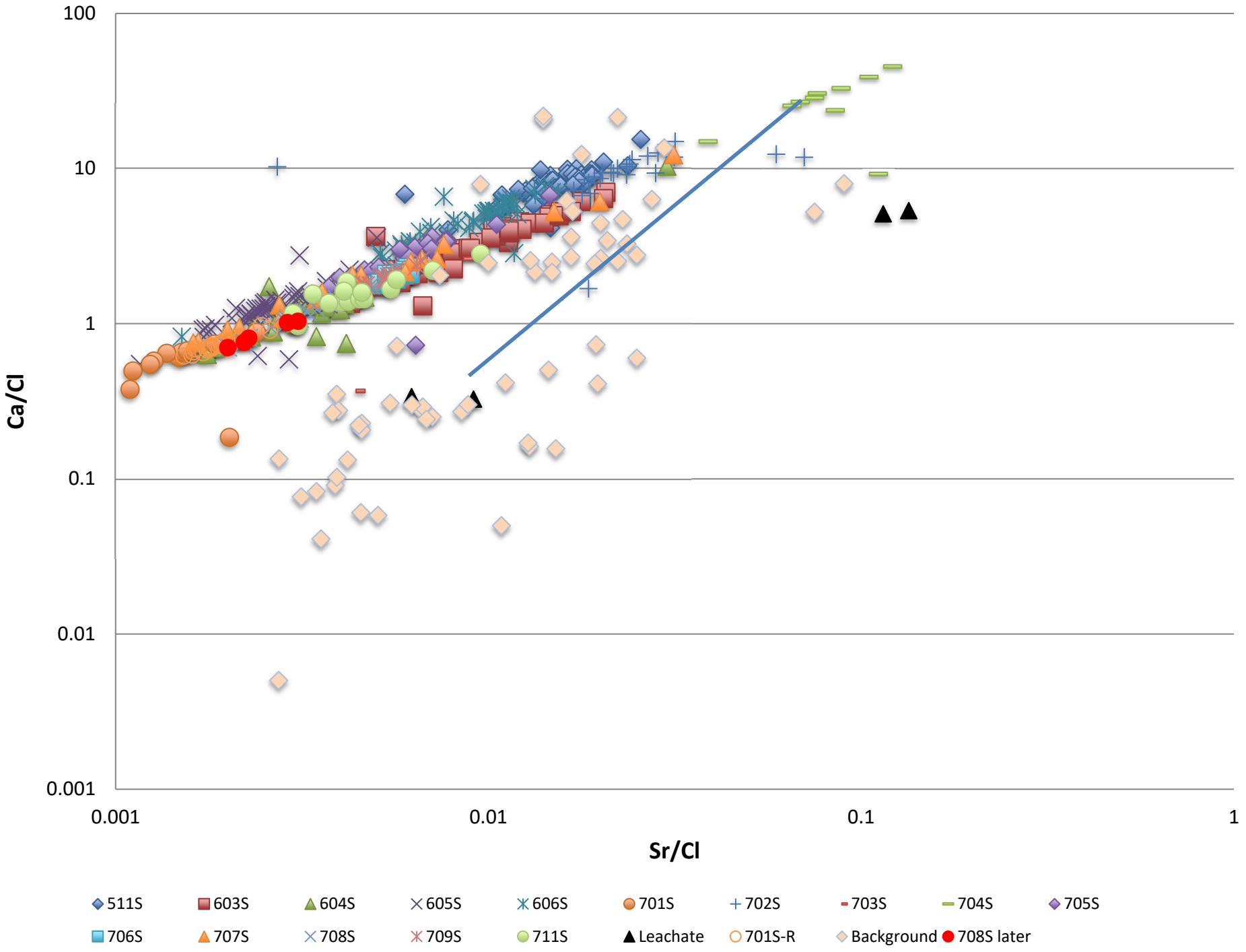
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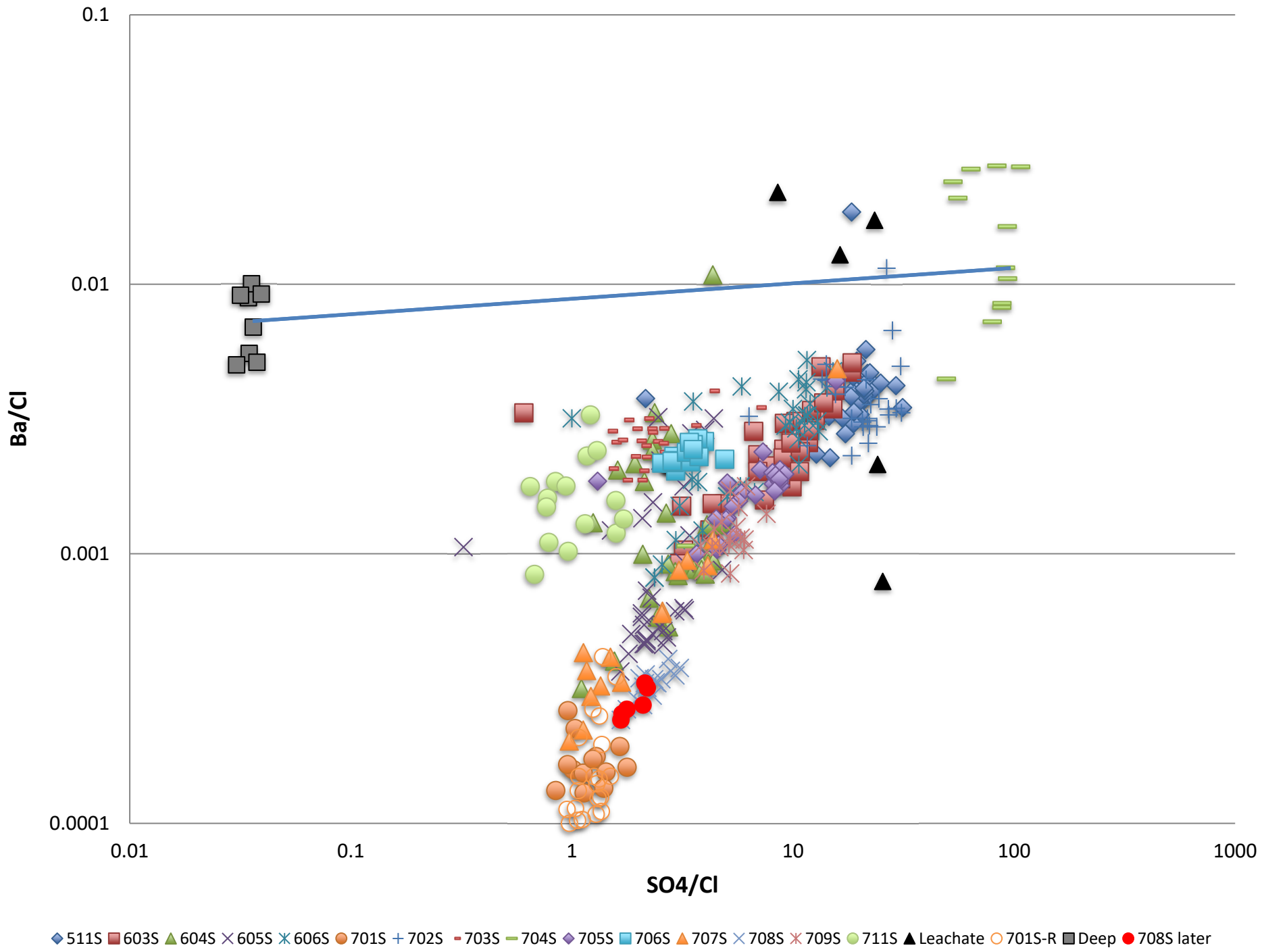
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711S
Leachate
701S-R
Deep
708S later